



TRANQUILITY[®] (SM) VERTICAL STACK SERIES

PRODUCT CATALOG

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Models: SM 006-036
60Hz - R-454B

Preliminary

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TRANQUILITY® (SM) VERTICAL STACK SERIES

The Tranquility (SM) Vertical Stack Series offers an innovative, labor-saving solution for spaces where individual, quiet control of the heating and cooling systems is important. The Tranquility SM offers a proven solution that is designed and manufactured in America, exceeds ASHRAE 90.1 efficiencies, and uses R-454B low Global Warming Potential (GWP) refrigerant, making it an extremely environmentally-friendly space-conditioning product solution. The Tranquility SM features a contractor/technician friendly design, has a compact footprint minimizing its impact on salable space, maximizes comfort levels of occupants, and has been proven as a preferred system in thousands of multi-story building applications across North America.

Vertical stack products are designed for multi-story buildings where floor-to-floor footprints are similar. They utilize vertically-mounted water lines, known as risers, installed in a wall or mechanical shaft to minimize space, material, and connections. The Tranquility SM consists of two major components; a cabinet located behind a finished wall, and a slide-in and out refrigeration chassis. This allows for the riser and cabinet pieces of the system to be installed early in the construction phase so they can be framed around without exposing the refrigeration chassis to the harsh construction environment. At the finishing stages of construction when the system is ready to be commissioned, the slide-in chassis is quickly and easily installed.

The Tranquility SM is available in eight sizes ranging from ½ ton (1.8 kW) through 3 tons (10.5 kW). The cabinet is designed with flexibility offering five different supply air locations and four different riser connection locations that can be factory or field configured. The chassis is designed for quick installation with two water hose connections and three or four electrical quick connectors. Both pieces of the system offer options to increase a building's energy efficiency. Integrated water control options save system watts by preventing over pumping both when the unit is in operation and when its not. EC blower motors maximize the system's airflow-movement efficiency. Industry-exclusive advanced-communicating controls offer reduced startup and commissioning time by providing an easy-to-read gateway into the systems operating conditions.

High-end condos, apartments, and hotels demand the highest level of occupant comfort. Not only is it important for the system to provide heating, cooling, and dehumidification, it must do so at quiet operating levels. ClimateMaster's double-isolation compressor mounting system makes the Tranquility SM the quietest vertical stack unit on the market. Compressors are mounted on specially engineered sound-tested isolation grommets to a heavy gauge base pan, which is then isolated from the cabinet base with a second layer of grommets under the condensate pan to provide superior sound attenuation by design. ClimateMaster offers an UltraQuiet sound-attenuation package and cabinet-isolation pad to meet the demand of the most sound-sensitive applications.

Recent EPA mandates require an industry transition to low-GWP refrigerants, such as R-454B which is a gas that is classified as having low-toxicity, low-flammability rating. Due to these characteristics, R-454B systems charged with over 62 ounces of refrigerant must contain an integrated Refrigerant Detection System (RDS). In the unlikely event of a system-refrigerant leak, the RDS shuts down compressor operation and runs the unit blower motor to disperse any concentration of leaked refrigerant in compliance with UL 60335-2-40 safety standards.

iGate® 2 technology provides technicians an interface into the operation of the system in real time without the need for hard tooling. On-board advanced controls communicate the key operating system temperatures allowing technicians to startup, commission, and service the equipment remotely by smart phone or website via the cloud. Communication can also be done at the unit via a communicating thermostat or handheld service tool. Not only does iGate 2 monitor current performance, it also offers the functionality to make system adjustments and captures operating conditions in the event of a system safety shut down. All this information is displayed in an easy-to-read format maximizing the usability of the experience.

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vFlow® variable water-flow technology takes water-flow control and system operating range to the next level. The functionality of an on/off water valve and water-flow regulator are combined into one modulating water valve component. With a modulating valve, water flow is controlled to maintain a set temperature difference between entering and leaving water while in normal operation. When in extreme entering-water conditions the vFlow system switches its operation to maintain a leaving-water temperature. With the functionality to control water flow to a leaving water temperature, the SM's operational range is expanded beyond other water source heat pumps with an ability to function in heating or cooling modes across the entire entering water range of 30–120°F. While not in operation the valve remains closed preventing excessive water flow. vFlow increases system water flow efficiency by only allowing the necessary amount of water flow needed when in operation. Advanced iGate 2 controls paired with the vFlow system provide functionality and efficiency unmatched in the marketplace.

The Tranquility (SM) Vertical Stack Series provides energy efficiency with superior sound attenuation by design while offering options flexibility and unmatched industry-leading technology.

FEATURES

- Sizes 06 (½ ton, 1.8kW) through 36 (3 ton, 10.6 kW)
- Environmentally-friendly R-454B low-GWP refrigerant
- High-efficiency rotary and scroll compressors
- Exceeds ASHRAE 90.1 efficiencies
- Removable chassis allows staged installation and ease of maintenance
- Coaxial heat exchanger
- Galvanized-steel cabinet construction
- Chassis rests on rubber-grommets isolated condensate pan for vibration reduction
- Unique double-isolation compressor mounting for quiet operation
- TXV metering device
- Cabinet construction for unit or remote-mounted controls
- Eight standard safety features
- Microprocessor controls with on-board fuse and emergency shutdown
- Integrated drain pan with condensate-overflow sensor
- Field-convertible supply air on all sides and the top
- Field-convertible riser supply, return, and condensate locations on the left, right, or back sides
- Communicating Controls Powered by CXM2:
 - Multiple communication pathways for unit access and diagnosis:
 - Cloud-based remote monitoring via Wi-Fi communicating color-touchscreen thermostat
 - Connect directly to the system with a handheld service tool
 - Provides real-time unit operating conditions
 - Reduces startup, commissioning, and service time by providing key system temperatures electronically
 - Captures operating conditions in the event of a safety shutdown

OPTIONS

- High-efficiency EC blower motors:
 - Intelligent Constant Volume (CV) EC motors for ultimate airflow control
 - Entry-level Constant Torque (CT) EC motors provide efficiency at a value
- Communicating Controls Powered by DXM2.5:
 - Includes all of the CXM2 control features
 - Dial in desired airflows for (CV) EC blower motors
- vFlow modulating water flow:
 - Modulates water flow to maintain a water-temperature differential
 - Changes operation to modulate to a leaving water-temperature during extreme entering-water temperatures
 - Provides ultimate variable water-flow control
 - Functionally operates as both a water-flow regulator and water close-off valve
- 2-inch filter rail to support higher indoor air-quality filters
- BACnet, Modbus, and Johnson Controls N2 compatibility options for Building Management Systems (BMS)
- Factory-configured supply-air openings with or without dust protection
- Full-port shut-off valves with memory stop, for supply and return risers.
- Unit-integrated power disconnect
- Field quick-connect thermostat whips in 15-, 25-, 35-, and 50-foot lengths
- Factory-mounted high-density rubber isolation pad
- Easy-to-clean rust-prohibitive stainless-steel drain pans
- Extended-range insulation for geothermal applications
- Autoflow regulators that limit water flow to the unit preventing system overpumping

OPTIONS

- Two-way motorized water valves that prevent water flow through the unit when it is not in operation increasing system pumping efficiency (fail-open or fail-closed options)
- Three-way motorized water valves that allow continuous water flow through the water loop, reducing pressure drop when the unit is not in operation (usually applied on the top floor of a system)
- Internally-mounted water pump for single-pipe systems
- RIB relay (sizes 06-18) box for quiet-contactor closer
- UltraQuiet sound-attenuation package
- Refrigerant Detection System (RDS) (optional for all sizes)

ACCESSORIES

- Copper risers:
 - Swedged ends ready for quick drop-in connection when brazing is used
 - End treatment ready for crimped (torch-less) style connections
- Unit stands that prevent clearance issues with tall baseboards
- Single, Double, and Double deflection with opposed dampers supply-air grilles
- Fresh-air frame kit for connection to outdoor air ducting
- Flush-mounted return-air panel (L style) with fixed frame and removable panel for easy chassis access/removal:
 - Available in Bright White or Polar Ice paint colors
- Attractive return-air panel with hinged access door (G style):
 - Key Lock Option
 - Available in Bright White or Polar Ice paint colors
- Stainless-steel braided-hose kits for connection from piping risers to the chassis
- Selection of thermostats including programmable, Wi-Fi, and color touchscreen
- Filters: 1-inch (Merv 8 or 11) or 2-inch (Merv 8 or 13)

IGATE 2

iGate 2 Communication – Cloud connected, web-enabled information gateway to monitor, control, and diagnose your system.

The Tranquility (SM) is equipped with industry-first, iGate 2 communication information gateway that allows users to interact with their water-source system in easy to read clear language.

Monitor/Configure – Installers can configure from the myUplink PRO website, mobile app, Communicating (AWC) Thermostat, or diagnostic tool, including: Unit family, size, accessory configuration, and demand reduction (optional, to limit unit operation during peak times). Users can look up the current system status: temperature sensor readings and operational status of the blower.

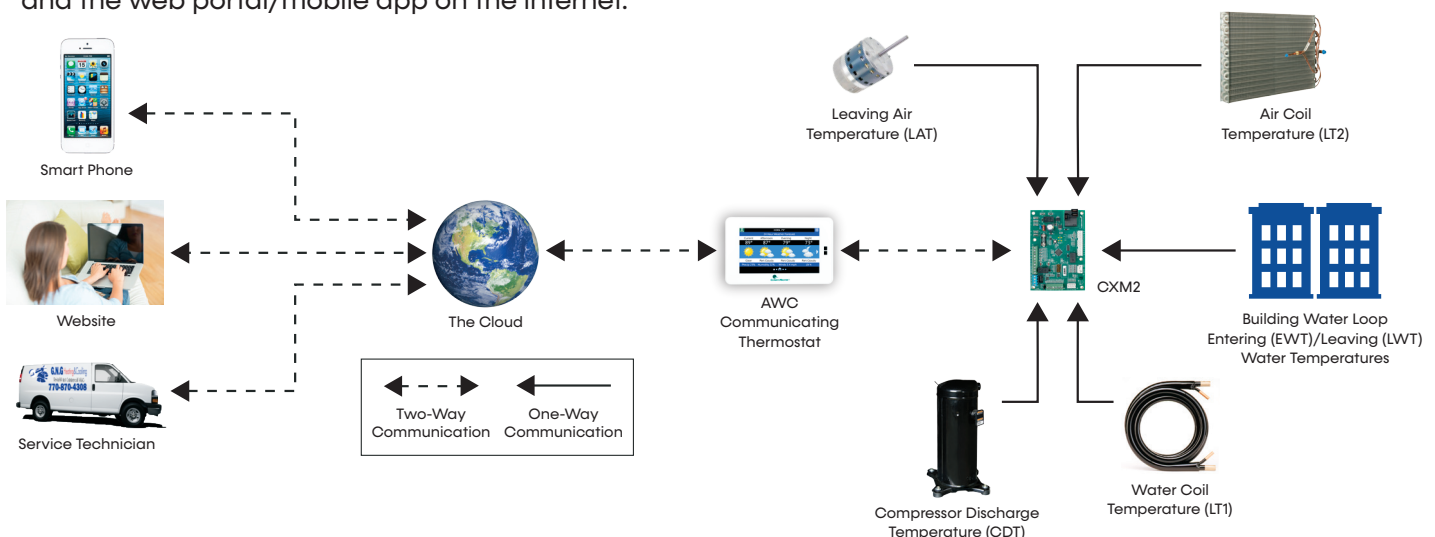
Precise Control – The new CXM2 board enables intelligent, two-way communication between the CXM2 board and smart components like the communicating thermostat and diagnostic tool. The advanced CXM2 board uses information received from the temperature sensors to precisely control operation to deliver high efficiency, reliability and increased comfort.

Diagnostics – iGate 2 takes diagnosing water source heat pump units to a next level of simplicity, by providing a dashboard of system and fault information, in clear language, on the AWC Communicating Thermostat, handheld service tool and the web portal/mobile app on the internet.

iGate 2 Service Warnings notify the homeowner and contractor of a fault and displays fault descriptions by app notifications/email with possible causes. Additionally, the current system status can be viewed graphically on the web portal and mobile app.

In iGate 2 Service Mode, the service personnel can access fault description, possible causes and most importantly, the conditions (temp, flow, i/o conditions, configuration) at the time of the fault. Manual Operation mode allows the service personnel to manually command operation for any of the thermostat outputs, blower speed, to help troubleshoot specific components. This operation can either be conducted at the unit with a communicating thermostat/diagnostic tool or remotely with mobile app/website when the AWC Communicating Thermostat controls are used.

With an iGate 2 communicating system, users and contractors have a web-enabled gateway to system information never before available and exclusive to ClimateMaster products.

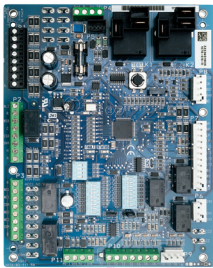


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iGate 2 Communicating Controls Powered by DXM2.5

Models:
SM
006-036

IGATE 2 COMMUNICATION – CLOUD CONNECTED, WEB-ENABLED INFORMATION GATEWAY TO MONITOR, CONTROL, AND DIAGNOSE YOUR SYSTEM



The Tranquility (SM) is equipped with industry-first, iGate 2 communication information gateway that allows users to interact with their water-source system in easy to read clear language AND delivers improved reliability/efficiency by precisely controlling smart components.

Monitor/Configure – Installers can configure from the myUplink PRO website, mobile app, Communicating AWC Thermostat, or diagnostic tool, including: airflow, unit family, size, accessory configuration, and demand reduction (optional, to limit unit operation during peak times). Users can look up the current system status: temperature sensor readings and operational status of the blower.

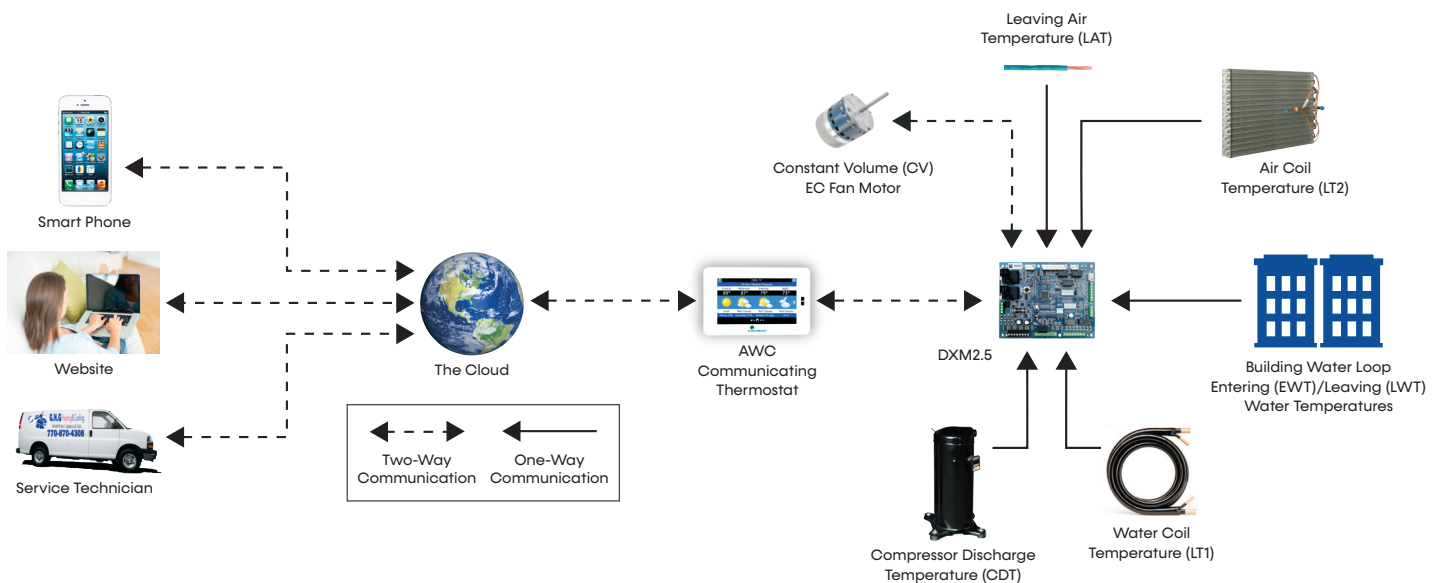
Precise Control – The new DXM2.5 board enables intelligent, two-way communication between the DXM2.5 board and smart components like the communicating thermostat/diagnostic tool and constant volume (CV) EC blower motor. The advanced DXM2.5 board uses information received from the smart components and temperature sensors to precisely control operation of the variable speed (CV) EC fan to deliver higher efficiency, reliability and increased comfort.

Diagnostics – iGate 2 takes diagnosing water source heat pump units to a next level of simplicity, by providing a dashboard of system and fault information, in clear language, on the AWC Communicating Thermostat, handheld service tool and the web portal/mobile app on the internet.

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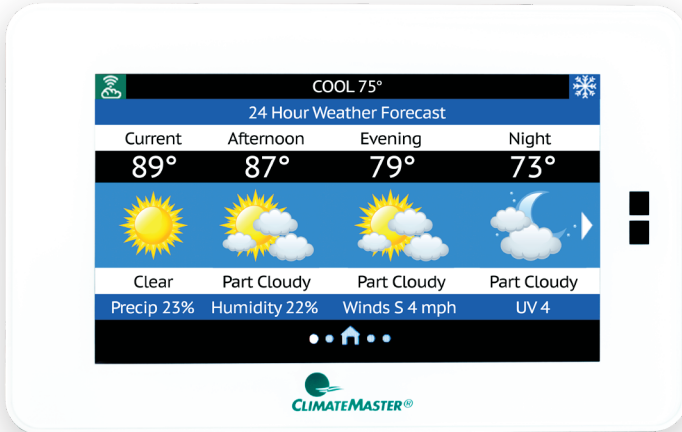
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IGATE 2 COMMUNICATION – CLOUD CONNECTED, WEB-ENABLED INFORMATION GATEWAY TO MONITOR, CONTROL, AND DIAGNOSE YOUR SYSTEM



The Communicating (AWC) Thermostat is innovating the future of comfort technology, one building at a time. The inspired design of the touch screen interface allows you to see real-time data for the efficiency and health of your system, with early warnings for potential system faults. The cloud based information gateway allows technicians to remotely diagnose system issues before occupants even know there is a problem. Control and monitor the system in your home or business from anywhere in the world with an easy to use app on your phone.

Features with Efficiency in Mind



Touch Screen Interface

A brilliantly customizable touch screen monitor for simple control.



Seamless Integration

Between your Communicating (AWC) Thermostat and comfort system.



(Mobile) Remote System Control

Control temperature and schedule from anywhere in the world.



Early Fault Warnings

Alerts the building owner and the contractor of potential system faults in the future.



Remote Diagnostics

Enable the contractor to remotely diagnose system issues, adjust system settings, and reset faults.



Real-Time Operations Data and System Schematics

Access simply via the myUplink Pro Account and web portal to view system diagrams with current operating temperatures.



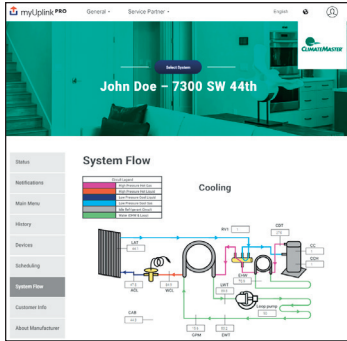
Revenue Stream

HVAC professionals can offer owners service contracts with remote monitoring and diagnostic capabilities without the large expense of a building management system.



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HVAC Professional | User Experience



The iGate 2 establishes a two-way link between the communicating (AWC) thermostat and the cloud, adding significant value for both residential and commercial customers. Our new thermostat works

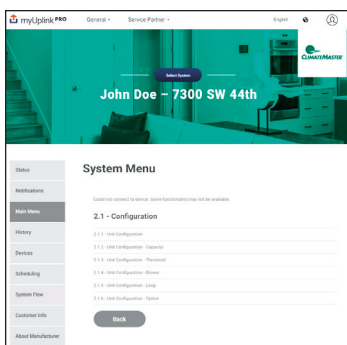
with your customers' Tranquility comfort systems to provide the most efficient link between their system and your services. The customizable monitoring from the myUplink PRO web portal or phone app account allows for continuous system monitoring, analysis, repair recognition, and early warnings for potential system faults that are sent to you and your customer.



Benefits

- Remote login from anywhere, anytime from any internet connected device
- View system fault history with possible root causes
- Information is available for contractors to troubleshoot and diagnose systems remotely
- Secure internet connection keeps homeowner information private
- Access thermostat(s) through Android and iPhone mobile apps

Homeowner | User Experience



The iGate 2 advanced unit controls enable a two-way communication link for critical system information between the unit and the cloud. From any internet connected device or smart phone, building owners can control and monitor their systems

from anywhere in the world. iGate 2 offers building owners peace of mind their systems are operating at peak performance with advanced operational performance issue notifications. HVAC professionals get notifications when systems are operating out of range. They can log in remotely to check system faults, review current operating conditions, and diagnose issues remotely. This gives the HVAC technician the upper hand when showing up to perform service, saving time which in turn, saves money.



Benefits

- Communicates personal settings and reminders through the iGate 2 communication system
- Easy-to-use, full-color, high-resolution user interface
- Sleek, intuitive control panel
- Secure internet connection keeps your information private
- Contains unit model, serial number and your HVAC professionals contact information
- System monitoring automatically contacts HVAC system providers when service is needed

vFLOW INTERNAL VARIABLE WATER FLOW

Industry-first, Built-in vFlow provides an ultra-high-efficient internal water-flow system. It saves installers time and labor by avoiding installing bulky valves or flow regulators in the field. Multi-unit installations are also much simpler with vFlow systems, as the units automatically adjust water flow across the system.

vFlow is enabled by iGate 2, which facilitates intelligent communication between the thermostat, DXM2.5 control, sensors, and modulating valve to make true variable water flow a reality.

In applications using the vFlow water-flow control, when the motorized modulating valve slows down the external pump consumes fewer watts, thus saving more energy.

vFlow delivers four main benefits:

1. One component replaces two-way motorized valve and auto-flow regulator
2. Superior reliability by varying the water flow to deliver more stable operation
3. Higher cost savings by varying water flow (and pump watt consumption) to match the unit's mode of operation
4. Allows unit to safely operate in cooling mode or heating mode from 20°F to 120°F

MODULATING WATER VALVE OPERATION

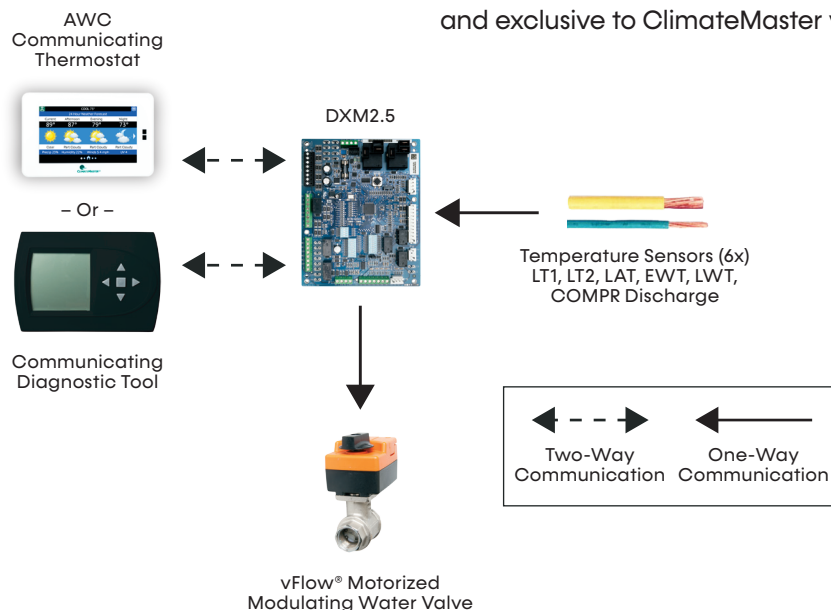
When the unit is in cooling or heating, the DXM2.5 controller monitors the entering and leaving water temperature. Based on the desired water temperature differential (delta T), the DXM2.5 sends a voltage signal to the valve which correlates to a percentage open in order to achieve the water flow needed. As conditions change the voltage signal will readjust the valve for the needed water flow.

The modulating water valve is factory set for a water delta T of 10°F for cooling operation and 7°F for heating operation. This default setting is estimated to be approximately 3 GPM of water flow per ton of load capacity. Installers can change the water flow by adjusting the delta T upward for lower flow or downward for higher flow by using the communicating thermostat or service tool. Please see unit IOM for full instructions.

At low cooling EWT's and high heating EWT's the DXM2.5 software overrides the delta T settings and adjusts the valve to operate to a LWT of no less than 60°F for cooling and no greater than 70°F for heating.

Units with the modulating water valve operate at EWT's from 30°F to 120°F in both cooling and heating. When there is no demand for cooling or heating, the valve is fully closed or can be field configured to remain slightly open allowing some water to pass through.

vFlow water-flow controls are unmatched in the market and exclusive to ClimateMaster vertical stack products.



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Reference Calculations

Heating	Cooling
$LWT = EWT - \frac{HE}{GPM \times \text{Constant}}$	$LWT = EWT + \frac{HR}{GPM \times \text{Constant}} \quad LC = TC - SC$
$LAT = EAT + \frac{HC}{CFM \times 1.08}$	$LAT (DB) = EAT (DB) - \frac{SC}{CFM \times 1.08} \quad S/T = \frac{SC}{TC}$

Constant = 500 for water, 485 for antifreeze

Conversion Table - to convert inch-pound (English) to S-I (Metric)

Airflow	Water Flow	External 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

Legend and Glossary of Abbreviations

Abbreviations	Descriptions
Btuh	Btu (British Thermal Unit) per hour
BMS	Building Management System
CDT	Compressor discharge temperature
CFM	Airflow, cubic feet per minute
COP	Coefficient of performance = Btuh output/Btuh input
CT EC	Electronically commutated constant torque blower motor
CV EC	Electronically commutated constant volume blower motor
DB	Dry bulb temperature, °F
DT	Delta T
EAT	Entering air temperature
EER	Energy efficient ratio = Btuh output/Watt input
ESP	External static pressure, inches w.g.
EWT	Entering water temperature
FPT	Female pipe thread
GPM	Water flow in U.S., gallons per minute
HC	Air heating capacity, Btuh
HE	Total heat of extraction, Btuh
HR	Total heat of rejection, Btuh

Abbreviations	Descriptions
HWG	Hot water generator (desuperheater) capacity, MBtuh
kW	Total power unit input, kilowatts
LAT	Leaving air temperature, °F
LC	Latent cooling capacity, Btuh
LOC	Loss of charge
LWT	Leaving water temperature, °F
MBtuh	1,000 Btu per hour
MPT	Male pipe thread
MWV	Motorized water valve
PSC	Permanent split capacitor
RDS	Refrigerant Detection System
SC	Sensible cooling capacity, Btuh
S/T	Sensible to total cooling ratio
TC	Total cooling capacity, Btuh
TD or delta T	Temperature differential
VFD	Variable frequency drive
WB	Wet bulb temperature, °F
WPD	Waterside pressure drop, psi or feet of head
WSE	Waterside economizer

Selection Procedure

USE THE FOLLOWING SELECTION STEPS

- Determine the actual heating and cooling loads at the desired dry bulb and wet bulb conditions.
- Obtain the following design parameters: Entering water temperature, water flow rate in GPM, airflow in CFM, water flow pressure drop and design wet and dry bulb temperatures. Airflow 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.
- 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.
- Enter tables at the design water flow and water temperature. Read the total and sensible cooling capacities (NOTE: interpolation is permissible, extrapolation is not).
- 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.
- 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.
- 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.
- 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 17,000 Btuh
Sensible Cooling 12,000 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 10°F rise in temp) .. 5.1 GPM
Airflow 630 CFM (90% of rated)

Steps 3, 4 & 5: HP Selection

After making our preliminary selection (SM024), we enter the tables at design water flow and water temperature and read Total Cooling, Sensible Cooling and Heat of Rejection capacities:

Total Cooling 18,350 Btuh
Sensible Cooling 13,210 Btuh
Heat of Rejection 22,470 Btuh

Steps 6 and 7: Entering Airflow Corrections

Next, we determine our correction factors.

Corrected Values	Table	Ent Air	Airflow	Corrected
Corrected Total Cooling	= 18,350 x	0.975 x	0.971 =	17,372
Corrected Sensible Cooling	= 13,210 x	0.999 x	0.932 =	12,299
Corrected Heat of Rejection	= 22,470 x	0.982 x	0.972 =	21,602

Step 8: Water Temperature Rise Calculation and Assessment

Actual Temperature Rise 8.8°F

When we compare the Corrected Total Cooling and Corrected Sensible Cooling values 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 value is slightly undersized as recommended, when compared to the actual indicated load.

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Model Nomenclature

Models:
SM
006-036

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15
S | **M** | **S** | **S** | **0** | **6** | **A** | **G** | **C** | **0** | **0** | **C** | **3** | **Q** | **S**

PRODUCT NAME

S = R-454B Refrigerant

MODEL TYPE

M = Vertical Stack Chassis Series

CHASSIS STYLE

S = Non-ducted Standard
T = Ducted Standard

SHIPPING

S = Standard
M = In Cabinet

SIZE

06 18
09 24
12 30
15 36

REVISION

A = Current

VOLTAGE

60 Hz 1 Phase	Without *RDS	With *RDS
Standard Thermostat		
208/230	G	J
265	E	D
Communicating Thermostat		
208/230	C	K
265	M	L
Standard / RIB Relay		
208/230	S	N
265	R	P
Communicating Thermostat / RIB Relay		
208/230	T	U
265	B	V

*Refrigerant Detection System

CONTROLS

Control	Standard	MPC
CXM2	C	N
DXM2.5	D	P

Use ClimateMaster's selection software at <https://climatemastersolutions.com/eRep/> to configure your Tranquility SM model.

STANDARD

S = Standard

BLOWER MOTOR

L = Constant Volume (CV) EC
Q = Constant Torque (CT) EC

EXTENDED OPTIONS

3 = Standard range, No UltraQuiet
4 = Standard range, UltraQuiet
1 = Extended Range, No UltraQuiet
2 = Extended Range, UltraQuiet

DRAIN PAN/HEAT EXCHANGER OPTIONS

C = Standard Drain Pan
S = Standard Stainless Steel Drain Pan

WATER OPTIONS

Option	Description
0	None
7	Internal Secondary Pump
C	Modulating Water Valve
M	Motorized Water Valve Normally Closed (Non-modulating)
R	Motorized Water Valve Normally Open (Non-modulating)
S	Three-way Water Valve (Non-modulating)

REGULATOR OPTIONS

Option	Auto-flow Regulator GPM							
	Unit Size							
	06	09	12	15	18	24	30	36
0	None							
B	1.0							
C	1.5							
D	2.0							
E		2.5						
F		3.0						
G		3.5						
H		4.0						
J		5.0						
K			6.0					
L			7.0					
M			8.0					
N				9.0				
P					10.5			

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Model Nomenclature

Models:
SM
006-036

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15
S | **G** | **3** | **0** | **0** | **6** | **A** | **0** | **4** | **C** | **0** | **0** | **1** | **F** | **S**

PRODUCT NAME

S = R-454B

MODEL TYPE

G = Vertical Stack Cabinet Series

CABINET HEIGHT AND THERMOSTAT WHIP

TSTAT Whip	65" Ducted	80"	88"
None	1	2	3
15'	A	B	C
25'	D	E	F
35'	G	H	J
50'	K	L	M

SHIPPING/PACKAGING

- 0 = Cabinet/chassis separate, no riser, ball-valve assembly optional
- 1 = Cabinet, chassis, and riser shipped separately
- 2 = Cabinet/chassis shipped separately, risers mounted back left
- 3 = Cabinet/chassis shipped separately, risers mounted back right
- 4 = Cabinet/chassis shipped separately, risers mounted left
- 5 = Cabinet/chassis shipped separately, risers mounted right
- 6 = Chassis shipped in cabinet, risers shipped separately
- 7 = Chassis shipped in cabinet, no riser, ball-valve assembly optional

SIZE

- 06 18
- 09 24
- 12 30
- 15 36

REVISION

A = Current

VOLTAGE

Description	208/230-1-60	265-1-60
None	0	N
Disconnect	D	S
Circuit breaker	C	B
Pump	P	M
Disconnect/Pump	W	U
Circuit breaker/Internal Secondary Pump	R	K

CONTROLS AND FAN MOTOR

Motor	Constant Torque	Constant Volume
Surface	5	S
Remote	4	R
ADA	1	B
MPC	2	D

Use ClimateMaster's selection software at <https://climatemastersolutions.com/eRep/> to configure your Tranquility SG model.

SPECIAL OPTIONS

S = Standard

ADDITIONAL CABINET OPTIONS

Open	Supply Air	Return Air	Outside Air	
	*Recovered	Open	With	Without
Yes	Yes	Yes	1	A
		No	2	B
	No	Yes	Yes	3
No			4	D
No		No	5	E
No	No	Yes	6	F
		No		

*Recovered dictates the supply air opening will be knocked out at the factory and a removable dust cover will be added to the opening for dust protection.

FILTERS AND DRAIN PANS

Description	1" Filter	2" Filter
Standard Drain Pan, Standard Seal	1	2
Stainless-steel Drain Pan, Standard Seal	B	H
Standard Drain Pan, Standard Seal, ISO Pad	3	4
Stainless-steel Drain Pan, Standard Seal, ISO Pad	E	L

RISER STYLE AND BALL VALVE OPTION

Riser Style	None	Ball Valve MNPT
Follower/None	0	M
Standard	1	D
Leader	2	R

SIDE SUPPLY AIR OPTIONS

Option	Description
0	None
A	Right Small
B	Right Large
C	Left Small
D	Left Large
E	Right and Left Small
F	Right and Left Large
G	Right Small and Left Large
H	Right Large and Left Small

BACK/FRONT/TOP SUPPLY AIR OPTIONS

Description	Option		
	Cabinet		
	65"	80"	88"
Top	E		
None	0		
Back Small	A		
Back Small and Top	F		
Back Small and Front Small	K		
Back Small and Front Large	M		
Back Small and Front Small/Top	P		
Back Small and Front Large/Top	R		
Back Large	B		
Back Large and Top	G		
Back Large and Front Small	N		
Back Large and Front Large	L		
Back Large and Front Small/Top	S		
Back Large and Front Large/Top	Q		
Front Small	C		
Front Large	D		
Front Small and Top	H		
Front Large and Top	J		

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Model Nomenclature

Riser

1 2 3 4 5 6 7 8 9 10 11 12 13 14
| 2 0 M 3 0 9 8 M 1 2 A S A 0 |

GROUP

20 = Vertical Stack Riser

M = MAKE ITEM

RISER STYLE

- 1 = 80" cabinet supply/return standard
- 2 = 80" cabinet drain standard
- 3 = 88" and 65" cabinet supply/return standard
- 4 = 88" and 65" cabinet drain standard
- 5 = 80" cabinet supply/return M/S
- 6 = 80" cabinet drain M/S
- 7 = 88" and 65" cabinet supply/return M/S
- 8 = 88" and 65" cabinet drain M/S
- 9 = Riser Extension - Add-on

RISER LENGTH

- 0 = Cabinet/chassis separate, no riser, ball-valve assembly optional
- 1 = Cabinet, chassis, and riser shipped separately
- 2 = Cabinet/chassis shipped separately, risers mounted back left
- 3 = Cabinet/chassis shipped separately, risers mounted back right
- 4 = Cabinet/chassis shipped separately, risers mounted left
- 5 = Cabinet/chassis shipped separately, risers mounted right
- 6 = Chassis shipped in cabinet, risers shipped separately
- 7 = Chassis shipped in cabinet, no riser, ball-valve assembly optional

COPPER TYPE

- M = M Copper
- L = L Copper

RISER TOP DIAMETER

- 0 = Cap
- 1 = 1"
- 2 = 1.25"
- 3 = 1.5"
- 4 = 2"
- 5 = 2.5"
- 6 = 3"

VALVE PACKAGE

- 0 = Drain
- 7 = 06-12 (Sweat Valve)
- 8 = 15-18 (Sweat Valve)
- 9 = 24-36 (Sweat Valve)

REVISION LEVEL

- A = Current Revision Level

SPECIAL

- S = Standard
- A = Special #1
- B = Special #2

TYPE

- A = Standard - Top Swage Only (3" deep)
- B = Standard - Top/Bottom No Swage
- E = Standard - Top Swage Only (3" deep) Insulated
- F = Standard - To/Bottom No Swage Insulated

RISER BOTTOM DIAMETER

- 0 = Cap
- 1 = 1"
- 2 = 1.25"
- 3 = 1.5"
- 4 = 2"
- 5 = 2.5"
- 6 = 3"

Use ClimateMaster's selection software at <https://climatemastersolutions.com/eRep/> to configure your riser selections.

Hose Kit

1 2 3 4 5 6 7 8 9 10
| A H U 0 5 0 3 6 S C |

GROUP

AH = Accessory Hose Kit

TYPE

HOSE SIZE

- 050 = 1/2" Nominal
- 075 = 3/4" Nominal
- 100 = 1" Nominal

REVISION LEVEL

- C = Current Revision

STANDARD

- S = Standard

LENGTH (INCHES)

Model Nomenclature

Return Air Panel G Style

1 2 3 4 5 6 7 8 9 10 11
| A V H S | G | 1 | S | F | S | N | S |

ACCESSORY
VHS RETURN AIR PANEL
SMS/SMT

TYPE G (REMOVABLE)

WIDTH

1 = 17"
2 = 19"
3 = 24"

COLOR

S = Standard (Polar Ice)
W = Bright White

INSULATION TYPE

F = Fiberglass

STANDARD

S = Standard

REVISION LEVEL

N = Current Revision SMS/SMT (G Panel)

STYLE

A = Standard with ADA Type 1 Tstat Option
B = Standard with ADA Type 2 Tstat Option
C = Standard with ADA Type 1 Tstat Option and Lock
D = Standard with ADA Type 2 Tstat Option and Lock
L = Standard Door with Key Locks
S = Standard Door

Thermostat Options

Type 1	Type 2
ATP21W02	AVB32V02C
ATA11U03	ATA32V01
AWC99U01	
ATA11U01	
ABV32V03C	

Return Air Panel L Style

1 2 3 4 5 6 7 8 9 10 11 12 13
| A V H R L | 1 | S | F | S | F | O | A | S |

ACCESSORY
VS RETURN AIR PANEL
AVHRL = L-Panel

WIDTH

Option	Width	SMS/SMT
1	17"	06-12
2	19"	15-18
3	24"	24
4	24"	30-36

COLOR

S = Standard (Polar Ice)
W = Bright White

INSULATION TYPE

F = Fiberglass

STANDARD

S = Standard

REVISION LEVEL

A = Current Revision

RESERVED FOR FUTURE USE

O = Standard

COMPONENT

F = Frame
P = Panel

STYLE

S = Standard

Model Nomenclature

Supply Air Grille Nomenclature

1 2 3 4 5 6 7 8 9 10 11 12 13 14
A 8 1 6 G A S S 1 2 0 6 0 A

SUPPLY AIR GRILLE

S = R-454B Refrigerant

GRILLE DEFLECTION

A = Single Deflection
 B = Double Deflection
 C = Double Deflection and Opposed Damper

MATERIAL AND COLOR

SS = Brushed Aluminum
 SP = Painted Aluminum, Polar Ice
 SW = Painted Aluminum, Bright White

REVISION LEVEL

A = Current

SPECIAL OPTIONS

0 = Standard (This option is always 0 unless a special option is quoted from the factory)

DIMENSIONS

*1206 = 12"W x 6"H
 *more dimensions are available on ClimateMaster's selection software site.

Cabinet Stands (ships loose in bulk for field attachment)

1 2 3 4 5 6 7 8 9 10 11 12 13
A C S T 0 0 1 0 0 0 0 0 B

ACCESSORY CABINET STAND

SMS/SMT

CABINET SIZE

0 = 17" x 17" (sizes 06-12)
 1 = 19" x 19" (sizes 15-18)
 2 = 24" x 24" (sizes 24-36)

HEIGHT

01 = 1"	08 = 8"
02 = 2"	09 = 9"
03 = 3"	10 = 10"
04 = 4"	11 = 11"
05 = 5"	12 = 12"
06 = 6"	13 = 13"
07 = 7"	

ISO PAD

0 = Standard (No ISO pad)
 1 = ISO Pad

REVISION

B = Current Version

FUTURE USE

0 = Standard

FUTURE USE

0 = Standard

FUTURE USE

0 = Standard

FUTURE USE

0 = Standard

FUTURE USE

0 = Standard

FUTURE USE

0 = Standard

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Performance Data: AHRI/ASHRAE/ISO 13256-1

Models:
SM
006-036

Tested in Accordance with AHRI/ASHRAE/ISO 13,256-1 English (I-P) Units

Model with EC Motor	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 77°F		Heating 32°F	
	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP
SMS06	6,224	14.0	6,733	5.1	6,476	15.5	4,055	3.3
SMS09	9,384	14.7	11,590	5.6	9,894	16.7	6,745	3.4
SMS12	12,036	14.5	15,504	5.5	12,342	17.3	9,180	3.3
SMS15	14,892	16.4	17,850	5.5	15,810	19.4	11,220	3.7
SMS18	18,360	15.7	22,644	5.3	18,870	17.8	13,464	3.4
SMS24	25,500	16.2	33,150	5.3	27,030	19.1	18,564	3.6
SMS30	28,560	15.6	35,190	5.2	29,580	18.1	22,644	3.7
SMS36	35,700	15.0	41,310	5.2	36,720	17.0	26,010	3.6

Notes:

- Where dual voltages are available ratings are based on the lower voltage setting.
- 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.
- Ground Loop Heat Pump ratings based on 15% antifreeze solution.

Tested in Accordance with AHRI/ASHRAE/ISO 13,256-1 English (I-P) Units

Model with EC Motor	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 77°F		Heating 32°F	
	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP	Capacity (Btuh)	EER (Btuh/W)	Capacity (Btuh)	COP
SMT06	6,220	14.5	6,729	5.3	6,472	16.5	4,052	3.4
SMT09	9,486	15.2	11,875	5.8	10,302	17.3	6,840	3.5
SMT12	12,240	15.9	14,725	5.5	12,852	17.7	8,740	3.5
SMT15	14,892	16.8	17,955	5.6	15,708	19.8	10,450	3.8
SMT18	17,442	15.6	21,185	5.6	18,768	18.3	12,350	3.6
SMT24	25,500	16.9	28,975	5.5	27,030	20.0	17,575	3.7
SMT30	29,070	16.6	31,825	5.5	30,090	19.0	19,950	3.8
SMT36	35,700	15.5	38,475	5.2	36,720	17.2	24,225	3.6

Notes:

- Where dual voltages are available ratings are based on the lower voltage setting.
- 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.
- Ground Loop Heat Pump ratings based on 15% antifreeze solution.

Performance Data – AHRI/ASHRAE/ISO 13256-1

Models:
SM
006-036

Tested in Accordance with AHRI/ASHRAE/ISO 13256-1 Metric (S-I) Units

Model with EC Motor	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 20°C		Cooling 25°C		Heating 0°C	
	Capacity (kW)	EER (W/W)	Capacity (kW)	COP	Capacity (kW)	EER (W/W)	Capacity (kW)	COP
SMS06	1.83	4.1	1.97	5.1	1.90	4.5	1.19	3.3
SMS09	2.75	4.3	3.40	5.6	2.90	4.9	1.98	3.4
SMS12	3.53	4.3	4.55	5.5	3.62	5.1	2.69	3.3
SMS15	4.37	4.8	5.23	5.5	4.64	5.7	3.29	3.7
SMS18	5.38	4.6	6.64	5.3	5.53	5.2	3.95	3.4
SMS24	7.48	4.7	9.72	5.3	7.93	5.6	5.44	3.6
SMS30	8.38	4.6	10.32	5.2	8.67	5.3	6.64	3.7
SMS36	10.47	4.4	12.11	5.2	10.77	5.0	7.63	3.6

Notes:

- Where dual voltages are available ratings are based on the lower voltage setting.
- 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.
- Ground Loop Heat Pump ratings based on 15% antifreeze solution.

Tested in Accordance with AHRI/ASHRAE/ISO 13256-1 Metric (S-I) Units

Model with EC Motor	Water Loop Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 20°C		Cooling 25°C		Heating 0°C	
	Capacity (kW)	EER (W/W)	Capacity (kW)	COP	Capacity (kW)	EER (W/W)	Capacity (kW)	COP
SMT06	1.82	4.3	1.97	5.3	1.90	4.8	1.19	3.4
SMT09	2.78	4.5	3.48	5.8	3.02	5.1	2.01	3.5
SMT12	3.59	4.7	4.32	5.5	3.77	5.2	2.56	3.5
SMT15	4.37	4.9	5.27	5.6	4.61	5.8	3.06	3.8
SMT18	5.11	4.6	6.21	5.6	5.50	5.4	3.62	3.6
SMT24	7.48	5.0	8.50	5.5	7.93	5.9	5.15	3.7
SMT30	8.52	4.9	9.33	5.5	8.82	5.6	5.85	3.8
SMT36	10.47	4.5	11.28	5.2	10.77	5.0	7.10	3.6

Notes:

- Where dual voltages are available ratings are based on the lower voltage setting.
- 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.
- Ground Loop Heat Pump ratings based on 15% antifreeze solution.

Performance Data: Selection Notes

Models:
SM
006-036

For operation in the shaded area when water is used in lieu of an antifreeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 40°F (4.4°C) when the JW3 jumper is not clipped (see example below). Otherwise, appropriate levels of a proper antifreeze solution should be used in systems with leaving water temperatures of 40°F (4.4°C) or below and the JW3 jumper should be clipped. 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.

Example:

At 50°F EWT (Entering Water Temperature) and 1.5 GPM/ton, a 3 ton unit has a HE of 26,830 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.

$$TD = HE / (GPM \times 500)$$

$$TD = 26,830 / (1.5 \times 500)$$

$$TD = 37.8^\circ\text{F}$$

$$LWT = EWT - TD$$

LWT = 50 - 37.8 = 12.2°F - Requires appropriate antifreeze (Protect to 28°F), JW3 must be clipped, and extended range insulation option.

In this example, a higher flow rate will be required for EWTs of 50°F without antifreeze. At 3 GPM/ton, the calculation becomes: (Note higher flow increases HE)

$$TD = 29,650 / (3 \text{ GPM} \times 500)$$

$$TD = 19.8^\circ\text{F}$$

LWT = 50 - 19.8 = 30.2°F - Water is acceptable, do not clip JW3.

		Heating - EAT 70°F					
		EER	HC	Power kW	HE	LAT	COP
Not Recommended							
			4.0	0.45	2.5	84.6	2.6
8.6	27.4	4.6	0.46	3.0	86.8	2.9	
8.6	31.0	4.8	0.47	3.2	87.8	3.0	
8.6	33.0	4.9	0.47	3.3	88.3	3.1	
8.4	23.3	5.4	0.48	3.8	90.2	3.3	
8.5	26.3	5.7	0.49	4.0	91.4	3.4	
8.6	27.9	5.9	0.49	4.2	92.1	3.5	
8.2	19.8	6.2	0.50	4.5	93.6	3.7	
4	22.3	6.6	0.50	4.9	95.0	3.8	
	23.7	6.8	0.51	5.0	95.8	3.9	
	16.7	7.0	0.51	5.3	96.9	4.0	
	13.8	7.4	0.52	5.6	98.5	4.1	
		7.6	0.52	5.8	99.3	4.2	
			0.53	6.0	100.0	4.3	

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Performance Data SMS06 (EC Blower Motor)

Models:
SM
006-036

300 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.13	1.6	3.6	Operation Not Recommended						Operation Not Recommended				
	1.69	3.0	6.9											
	2.25	4.9	11.3											
30	1.13	1.2	2.8	8.2	6.0	0.73	0.42	9.6	19.6	4.1	0.61	2.0	84.2	2.0
	1.69	2.7	6.2	8.2	5.9	0.72	0.39	9.5	20.9	4.3	0.62	2.2	84.9	2.1
	2.25	4.5	10.3	8.1	5.7	0.71	0.38	9.4	21.3	4.4	0.62	2.3	85.3	2.1
40	1.13	1.0	2.4	8.1	6.1	0.75	0.46	9.7	17.5	4.9	0.63	2.7	86.8	2.3
	1.69	1.9	4.5	8.2	6.1	0.74	0.43	9.7	19.3	5.2	0.63	3.0	87.8	2.4
	2.25	3.1	7.3	8.2	6.0	0.73	0.41	9.6	20.0	5.3	0.63	3.1	88.3	2.4
50	1.13	1.0	2.2	7.8	6.0	0.77	0.51	9.5	15.1	5.7	0.64	3.5	89.6	2.6
	1.69	1.9	4.3	8.0	6.1	0.75	0.47	9.6	17.0	6.0	0.64	3.8	90.7	2.7
	2.25	3.1	7.1	8.1	6.1	0.75	0.45	9.7	18.0	6.2	0.65	4.0	91.4	2.8
60	1.13	0.9	2.1	7.4	5.7	0.78	0.57	9.3	12.9	6.5	0.65	4.3	92.4	2.9
	1.69	1.8	4.2	7.7	5.9	0.77	0.53	9.5	14.7	6.9	0.66	4.7	93.7	3.1
	2.25	3.0	6.9	7.8	6.0	0.76	0.50	9.6	15.6	7.1	0.66	4.9	94.5	3.2
70	1.13	0.8	1.9	6.9	5.5	0.80	0.63	9.0	10.9	7.3	0.66	5.1	95.2	3.2
	1.69	1.8	4.1	7.3	5.7	0.78	0.59	9.3	12.4	7.8	0.67	5.5	96.8	3.4
	2.25	2.9	6.7	7.4	5.8	0.78	0.56	9.4	13.2	8.1	0.67	5.8	97.7	3.5
80	1.13	0.8	1.8	6.3	5.2	0.81	0.70	8.7	9.1	8.1	0.67	5.9	98.1	3.6
	1.69	1.7	3.9	6.7	5.4	0.80	0.65	9.0	10.3	8.7	0.67	6.4	99.9	3.8
	2.25	2.8	6.5	6.9	5.5	0.79	0.63	9.1	11.1	9.0	0.68	6.7	101.0	3.9
90	1.13	0.7	1.7	5.8	4.8	0.84	0.77	8.4	7.5	9.0	0.68	6.7	100.9	3.9
	1.69	1.6	3.8	6.2	5.1	0.82	0.72	8.6	8.6	9.6	0.68	7.2	103.0	4.1
	2.25	2.8	6.4	6.4	5.2	0.81	0.70	8.7	9.2	9.9	0.68	7.6	104.2	4.2
100	1.13	0.7	1.7	5.2	4.5	0.87	0.84	8.1	6.2	9.0	0.68	6.7	100.9	3.9
	1.69	1.6	3.7	5.6	4.7	0.85	0.79	8.3	7.0	9.0	0.68	6.7	100.9	3.9
	2.25	2.7	6.2	5.8	4.8	0.84	0.77	8.4	7.5	9.0	0.68	6.7	100.9	3.9
110	1.13	0.7	1.6	4.7	4.2	0.91	0.91	7.8	5.1	9.0	0.68	6.7	100.9	3.9
	1.69	1.6	3.6	5.0	4.4	0.88	0.87	8.0	5.8	9.0	0.68	6.7	100.9	3.9
	2.25	2.6	6.1	5.2	4.5	0.87	0.84	8.1	6.1	9.0	0.68	6.7	100.9	3.9
120	1.13	0.7	1.6	4.2	4.0	0.96	0.99	7.6	4.3	9.0	0.68	6.7	100.9	3.9
	1.69	1.5	3.5	4.5	4.1	0.93	0.94	7.7	4.7	9.0	0.68	6.7	100.9	3.9
	2.25	2.6	5.9	4.6	4.2	0.91	0.92	7.8	5.0	9.0	0.68	6.7	100.9	3.9

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

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Performance Data SMS09 (EC Blower Motor)

Models:
SM
006-036

400 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.13	1.6	3.6	Operation Not Recommended						Operation Not Recommended				
	1.69	3.0	6.9											
	2.25	4.9	11.3											
30	1.13	1.2	2.8	11.9	8.7	0.73	0.43	13.4	27.6	5.9	0.63	3.7	84.2	2.7
	1.69	2.7	6.2	11.8	8.5	0.72	0.40	13.2	29.4	6.1	0.64	4.0	84.9	2.8
	2.25	4.5	10.3	11.7	8.3	0.71	0.39	13.0	29.9	6.3	0.64	4.1	85.3	2.9
40	1.13	1.0	2.4	11.7	8.8	0.75	0.48	13.3	24.6	6.9	0.65	4.7	86.8	3.1
	1.69	1.9	4.5	11.9	8.8	0.74	0.44	13.4	27.1	7.3	0.65	5.1	87.8	3.3
	2.25	3.1	7.3	11.9	8.7	0.73	0.42	13.3	28.2	7.5	0.65	5.3	88.3	3.4
50	1.13	1.0	2.2	11.3	8.6	0.77	0.53	13.1	21.3	8.0	0.66	5.8	89.6	3.6
	1.69	1.9	4.3	11.6	8.8	0.75	0.49	13.3	23.9	8.5	0.66	6.3	90.7	3.8
	2.25	3.1	7.1	11.8	8.8	0.75	0.47	13.3	25.2	8.8	0.67	6.5	91.4	3.9
60	1.13	0.9	2.1	10.7	8.3	0.78	0.59	12.7	18.1	9.2	0.67	6.9	92.4	4.0
	1.69	1.8	4.2	11.1	8.6	0.77	0.54	13.0	20.6	9.8	0.68	7.5	93.7	4.2
	2.25	3.0	6.9	11.4	8.7	0.76	0.52	13.1	21.9	10.1	0.68	7.8	94.5	4.4
70	1.13	0.8	1.9	10.0	7.9	0.80	0.65	12.2	15.3	10.4	0.68	8.0	95.2	4.5
	1.69	1.8	4.1	10.5	8.2	0.78	0.60	12.6	17.4	11.0	0.69	8.7	96.8	4.7
	2.25	2.9	6.7	10.8	8.4	0.78	0.58	12.7	18.6	11.4	0.69	9.1	97.7	4.9
80	1.13	0.8	1.8	9.2	7.5	0.81	0.72	11.6	12.7	11.5	0.69	9.2	98.1	4.9
	1.69	1.7	3.9	9.7	7.8	0.80	0.67	12.0	14.5	12.3	0.69	9.9	99.9	5.2
	2.25	2.8	6.5	10.0	8.0	0.79	0.65	12.2	15.6	12.7	0.70	10.4	101.0	5.4
90	1.13	0.7	1.7	8.4	7.0	0.84	0.79	11.1	10.6	12.7	0.70	10.3	100.9	5.3
	1.69	1.6	3.8	8.9	7.3	0.82	0.74	11.4	12.0	13.6	0.70	11.2	103.0	5.7
	2.25	2.8	6.4	9.2	7.5	0.81	0.72	11.7	12.9	14.1	0.71	11.6	104.2	5.8
100	1.13	0.7	1.7	7.5	6.6	0.87	0.86	10.5	8.7	12.7	0.70	10.3	100.9	5.3
	1.69	1.6	3.7	8.1	6.8	0.85	0.82	10.9	9.9	12.7	0.70	10.3	100.9	5.3
	2.25	2.7	6.2	8.4	7.0	0.84	0.79	11.1	10.6	12.7	0.70	10.3	100.9	5.3
110	1.13	0.7	1.6	6.8	6.1	0.91	0.94	10.0	7.2	12.7	0.70	10.3	100.9	5.3
	1.69	1.6	3.6	7.2	6.4	0.88	0.89	10.3	8.1	12.7	0.70	10.3	100.9	5.3
	2.25	2.6	6.1	7.5	6.5	0.87	0.87	10.5	8.6	12.7	0.70	10.3	100.9	5.3
120	1.13	0.7	1.6	6.1	5.8	0.96	1.01	9.5	6.0	12.7	0.70	10.3	100.9	5.3
	1.69	1.5	3.5	6.5	6.0	0.93	0.97	9.8	6.7	12.7	0.70	10.3	100.9	5.3
	2.25	2.6	5.9	6.7	6.1	0.91	0.95	9.9	7.1	12.7	0.70	10.3	100.9	5.3

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMS12 (EC Blower Motor)

Models:
SM
006-036

450 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.50	2.3	5.3	Operation Not Recommended						Operation Not Recommended				
	2.25	4.7	10.8											
	3.00	7.8	18.0											
30	1.50	2.1	4.7	14.1	9.4	0.67	0.54	15.9	26.1	7.5	0.81	4.8	86.3	2.7
	2.25	4.3	9.9	13.8	9.0	0.65	0.51	15.6	27.0	7.9	0.81	5.1	87.1	2.8
	3.00	7.0	16.2	13.6	8.7	0.64	0.50	15.3	27.0	8.1	0.82	5.3	87.5	2.9
40	1.50	1.5	3.6	14.0	9.6	0.69	0.59	16.0	23.8	9.0	0.83	6.2	89.4	3.2
	2.25	3.1	7.3	14.1	9.5	0.67	0.55	16.0	25.6	9.5	0.84	6.6	90.4	3.3
	3.00	5.2	12.1	14.0	9.3	0.67	0.53	15.9	26.3	9.7	0.84	6.8	91.0	3.4
50	1.50	1.5	3.5	13.6	9.6	0.71	0.65	15.9	20.9	10.4	0.85	7.5	92.5	3.6
	2.25	3.1	7.1	13.9	9.7	0.69	0.60	16.0	23.1	11.0	0.86	8.0	93.7	3.7
	3.00	5.1	11.8	14.0	9.6	0.69	0.58	16.0	24.1	11.3	0.87	8.3	94.4	3.8
60	1.50	1.5	3.4	13.0	9.5	0.73	0.73	15.5	17.9	11.9	0.88	8.9	95.6	4.0
	2.25	3.0	6.9	13.5	9.6	0.71	0.67	15.8	20.1	12.5	0.88	9.5	97.1	4.1
	3.00	5.0	11.4	13.7	9.7	0.71	0.65	15.9	21.2	12.9	0.89	9.9	97.9	4.2
70	1.50	1.4	3.3	12.2	9.1	0.75	0.81	15.0	15.2	13.3	0.90	10.2	98.8	4.4
	2.25	2.9	6.7	12.8	9.4	0.73	0.75	15.4	17.1	14.1	0.91	11.0	100.4	4.5
	3.00	4.8	11.1	13.1	9.5	0.72	0.72	15.5	18.2	14.5	0.91	11.4	101.4	4.7
80	1.50	1.4	3.2	11.4	8.7	0.77	0.89	14.4	12.7	14.8	0.92	11.7	102.0	4.7
	2.25	2.8	6.5	12.0	9.0	0.75	0.83	14.8	14.4	15.7	0.93	12.5	103.9	4.9
	3.00	4.7	10.8	12.3	9.2	0.74	0.80	15.0	15.3	16.2	0.94	13.0	105.1	5.1
90	1.50	1.3	3.1	10.4	8.2	0.79	0.98	13.8	10.6	16.3	0.94	13.1	105.3	5.1
	2.25	2.8	6.4	11.0	8.5	0.77	0.92	14.2	11.9	17.4	0.95	14.2	107.6	5.4
	3.00	4.6	10.5	11.4	8.7	0.77	0.89	14.4	12.7	18.0	0.96	14.8	109.0	5.5
100	1.50	1.3	3.0	9.4	7.7	0.82	1.07	13.1	8.8	16.2	0.94	13.0	105.1	5.1
	2.25	2.7	6.2	10.0	8.0	0.80	1.02	13.5	9.9	16.2	0.94	13.0	105.1	5.1
	3.00	4.5	10.3	10.4	8.2	0.79	0.99	13.7	10.5	16.2	0.94	13.0	105.1	5.1
110	1.50	1.3	2.9	8.5	7.2	0.85	1.17	12.5	7.3	16.2	0.94	13.0	105.1	5.1
	2.25	2.6	6.1	9.0	7.5	0.83	1.11	12.8	8.1	16.2	0.94	13.0	105.1	5.1
	3.00	4.4	10.1	9.3	7.6	0.82	1.08	13.0	8.6	16.2	0.94	13.0	105.1	5.1
120	1.50	1.2	2.8	7.6	6.7	0.88	1.26	11.9	6.1	16.2	0.94	13.0	105.1	5.1
	2.25	2.6	5.9	8.1	7.0	0.86	1.21	12.2	6.7	16.2	0.94	13.0	105.1	5.1
	3.00	4.3	10.0	8.4	7.1	0.85	1.18	12.4	7.1	16.2	0.94	13.0	105.1	5.1

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMS15 (EC Blower Motor)

Models:
SM
006-036

600 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.88	0.5	1.2	Operation Not Recommended						Operation Not Recommended				
	2.81	1.6	3.8											
	3.75	2.7	6.3											
30	1.88	0.4	1.0	18.3	13.4	0.73	0.54	20.1	33.8	9.2	0.92	6.1	85.0	3.0
	2.81	1.4	3.2	17.9	12.5	0.70	0.50	19.6	35.5	9.7	0.93	6.5	85.7	3.1
	3.75	2.3	5.4	17.5	11.8	0.67	0.49	19.2	35.6	10.0	0.93	6.8	86.1	3.1
40	1.88	0.3	0.7	18.2	13.9	0.76	0.61	20.3	29.9	11.0	0.95	7.8	87.9	3.4
	2.81	0.9	2.1	18.3	13.6	0.74	0.56	20.2	33.0	11.6	0.96	8.4	88.9	3.6
	3.75	1.5	3.5	18.3	13.3	0.73	0.53	20.1	34.2	12.0	0.96	8.7	89.4	3.7
50	1.88	0.3	0.6	17.6	13.8	0.78	0.70	20.0	25.4	12.9	0.97	9.6	90.9	3.9
	2.81	0.9	2.0	18.1	13.9	0.77	0.63	20.3	28.8	13.7	0.98	10.3	92.2	4.1
	3.75	1.4	3.3	18.3	13.9	0.76	0.60	20.3	30.5	14.1	0.99	10.7	92.9	4.2
60	1.88	0.3	0.6	16.7	13.3	0.80	0.80	19.5	21.1	14.8	1.00	11.4	94.0	4.4
	2.81	0.8	1.9	17.4	13.7	0.79	0.72	19.9	24.2	15.7	1.01	12.3	95.5	4.6
	3.75	1.4	3.2	17.7	13.9	0.78	0.69	20.1	25.9	16.2	1.01	12.8	96.3	4.7
70	1.88	0.3	0.6	15.6	12.6	0.81	0.90	18.7	17.3	16.7	1.02	13.3	97.1	4.8
	2.81	0.8	1.8	16.4	13.1	0.80	0.83	19.2	19.9	17.8	1.03	14.3	98.8	5.1
	3.75	1.3	3.0	16.8	13.4	0.79	0.79	19.5	21.4	18.4	1.03	14.9	99.8	5.2
80	1.88	0.2	0.6	14.4	11.8	0.82	1.02	17.8	14.1	18.6	1.03	15.1	100.2	5.3
	2.81	0.7	1.7	15.2	12.3	0.81	0.94	18.4	16.2	19.8	1.04	16.3	102.1	5.6
	3.75	1.3	2.9	15.7	12.6	0.81	0.90	18.7	17.4	20.5	1.05	16.9	103.2	5.7
90	1.88	0.2	0.5	13.1	10.9	0.84	1.14	17.0	11.4	20.5	1.05	16.9	103.2	5.7
	2.81	0.7	1.6	13.9	11.5	0.82	1.06	17.5	13.1	21.8	1.06	18.2	105.3	6.0
	3.75	1.2	2.8	14.3	11.7	0.82	1.02	17.8	14.0	22.4	1.06	18.8	106.4	6.2
100	1.88	0.2	0.5	11.8	10.2	0.86	1.27	16.2	9.3	20.5	1.05	16.9	103.2	5.7
	2.81	0.7	1.6	12.6	10.7	0.85	1.19	16.7	10.6	20.5	1.05	16.9	103.2	5.7
	3.75	1.1	2.6	13.0	10.9	0.84	1.15	16.9	11.3	20.5	1.05	16.9	103.2	5.7
110	1.88	0.2	0.5	10.7	9.8	0.91	1.40	15.5	7.7	20.5	1.05	16.9	103.2	5.7
	2.81	0.6	1.5	11.4	10.0	0.88	1.33	15.9	8.6	20.5	1.05	16.9	103.2	5.7
	3.75	1.1	2.5	11.7	10.2	0.87	1.29	16.1	9.1	20.5	1.05	16.9	103.2	5.7
120	1.88	0.2	0.4	9.9	9.6	0.97	1.53	15.1	6.4	20.5	1.05	16.9	103.2	5.7
	2.81	0.6	1.4	10.3	9.6	0.93	1.46	15.3	7.1	20.5	1.05	16.9	103.2	5.7
	3.75	1.0	2.3	10.6	9.7	0.92	1.42	15.4	7.4	20.5	1.05	16.9	103.2	5.7

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMS18 (EC Blower Motor)

Models:
SM
006-036

700 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	2.25	0.8	1.8	Operation Not Recommended						Operation Not Recommended				
	3.38	1.9	4.4											
	4.50	3.3	7.7											
30	2.25	0.6	1.4	19.8	13.6	0.69	0.72	22.3	27.4	10.6	1.12	6.8	84.7	2.8
	3.38	1.6	3.7	19.6	13.2	0.67	0.68	21.9	29.0	11.1	1.13	7.3	85.4	2.9
	4.50	2.8	6.6	19.4	12.8	0.66	0.66	21.7	29.6	11.4	1.13	7.6	85.9	3.0
40	2.25	0.5	1.1	19.6	13.9	0.71	0.81	22.3	24.3	12.8	1.16	8.9	87.8	3.2
	3.38	1.2	2.7	19.8	13.8	0.70	0.75	22.4	26.5	13.5	1.17	9.5	88.7	3.4
	4.50	2.0	4.7	19.8	13.6	0.69	0.72	22.3	27.5	13.8	1.17	9.8	89.2	3.5
50	2.25	0.4	1.0	18.9	13.7	0.72	0.90	22.0	20.9	14.9	1.19	10.9	90.7	3.7
	3.38	1.1	2.6	19.4	13.9	0.71	0.84	22.3	23.2	15.7	1.20	11.6	91.8	3.8
	4.50	2.0	4.5	19.6	13.9	0.71	0.80	22.4	24.4	16.1	1.20	12.0	92.3	3.9
60	2.25	0.4	1.0	17.9	13.3	0.74	1.01	21.4	17.7	16.9	1.21	12.8	93.5	4.1
	3.38	1.1	2.5	18.6	13.6	0.73	0.94	21.8	19.8	17.7	1.22	13.6	94.6	4.3
	4.50	1.9	4.3	18.9	13.7	0.72	0.90	22.0	21.0	18.2	1.23	14.0	95.3	4.3
70	2.25	0.4	0.9	16.7	12.7	0.76	1.13	20.5	14.7	18.8	1.23	14.6	96.1	4.5
	3.38	1.0	2.4	17.5	13.1	0.75	1.05	21.1	16.6	19.7	1.25	15.4	97.4	4.6
	4.50	1.8	4.1	17.9	13.3	0.74	1.01	21.4	17.6	20.2	1.25	15.9	98.1	4.7
80	2.25	0.4	0.9	15.3	12.0	0.78	1.27	19.6	12.1	20.6	1.26	16.3	98.6	4.8
	3.38	1.0	2.2	16.2	12.4	0.77	1.18	20.2	13.7	21.6	1.27	17.3	100.0	5.0
	4.50	1.7	4.0	16.6	12.6	0.76	1.14	20.5	14.6	22.2	1.28	17.8	100.8	5.1
90	2.25	0.4	0.8	13.9	11.2	0.81	1.41	18.7	9.8	22.4	1.28	18.0	101.1	5.1
	3.38	0.9	2.1	14.7	11.7	0.79	1.32	19.2	11.1	23.5	1.30	19.0	102.6	5.3
	4.50	1.6	3.8	15.2	11.9	0.78	1.28	19.5	11.8	24.1	1.32	19.6	103.5	5.4
100	2.25	0.3	0.8	12.4	10.5	0.85	1.57	17.7	7.9	21.6	1.27	17.3	100.0	5.0
	3.38	0.9	2.1	13.2	10.9	0.83	1.48	18.3	8.9	21.6	1.27	17.3	100.0	5.0
	4.50	1.6	3.7	13.6	11.1	0.82	1.43	18.5	9.5	21.6	1.27	17.3	100.0	5.0
110	2.25	0.3	0.7	11.0	9.9	0.90	1.74	16.9	6.3	21.6	1.27	17.3	100.0	5.0
	3.38	0.9	2.0	11.7	10.2	0.87	1.65	17.3	7.1	21.6	1.27	17.3	100.0	5.0
	4.50	1.5	3.6	12.1	10.4	0.86	1.60	17.6	7.6	21.6	1.27	17.3	100.0	5.0
120	2.25	0.3	0.7	9.7	9.5	0.97	1.92	16.3	5.1	21.6	1.27	17.3	100.0	5.0
	3.38	0.8	1.9	10.3	9.7	0.94	1.83	16.6	5.7	21.6	1.27	17.3	100.0	5.0
	4.50	1.5	3.4	10.7	9.8	0.92	1.78	16.8	6.0	21.6	1.27	17.3	100.0	5.0

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

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Performance Data SMS24 (EC Blower Motor)

Models:
SM
006-036

800 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	3.00	1.2	2.8	Operation Not Recommended						Operation Not Recommended				
	4.50	2.5	5.9											
	6.00	4.1	9.6											
30	3.00	1.0	2.4	30.1	21.0	0.70	1.11	33.9	27.1	16.3	1.71	10.4	89.8	2.8
	4.50	2.1	5.0	30.3	21.1	0.70	1.02	33.7	29.7	17.1	1.73	11.2	90.8	2.9
	6.00	3.6	8.2	30.3	21.1	0.70	0.97	33.6	31.1	17.6	1.74	11.7	91.4	3.0
40	3.00	0.8	1.7	29.5	20.7	0.70	1.23	33.7	23.9	19.3	1.77	13.3	93.5	3.2
	4.50	1.6	3.6	30.0	20.9	0.70	1.13	33.9	26.4	20.4	1.79	14.3	94.8	3.4
	6.00	2.5	5.9	30.2	21.0	0.70	1.09	33.9	27.7	21.0	1.80	14.9	95.6	3.4
50	3.00	0.7	1.7	28.6	20.3	0.71	1.37	33.3	20.9	22.4	1.82	16.2	97.2	3.6
	4.50	1.5	3.4	29.3	20.6	0.70	1.26	33.6	23.3	23.7	1.84	17.4	98.8	3.8
	6.00	2.4	5.6	29.6	20.7	0.70	1.21	33.8	24.5	24.4	1.85	18.1	99.7	3.9
60	3.00	0.7	1.6	27.5	19.7	0.72	1.53	32.7	18.0	25.4	1.87	19.0	100.9	4.0
	4.50	1.4	3.3	28.4	20.1	0.71	1.40	33.2	20.2	26.9	1.90	20.4	102.7	4.2
	6.00	2.3	5.4	28.8	20.3	0.71	1.35	33.4	21.4	27.8	1.91	21.2	103.7	4.2
70	3.00	0.7	1.5	26.1	19.1	0.73	1.70	32.0	15.4	28.4	1.93	21.8	104.5	4.3
	4.50	1.4	3.1	27.2	19.6	0.72	1.57	32.5	17.3	30.1	1.96	23.4	106.6	4.5
	6.00	2.2	5.2	27.7	19.8	0.72	1.50	32.8	18.4	31.0	1.98	24.3	107.7	4.6
80	3.00	0.6	1.4	24.6	18.4	0.75	1.91	31.1	12.9	31.3	1.99	24.5	108.1	4.6
	4.50	1.3	3.0	25.8	18.9	0.73	1.75	31.7	14.7	33.2	2.04	26.2	110.3	4.8
	6.00	2.1	5.0	26.3	19.2	0.73	1.68	32.0	15.6	34.2	2.07	27.1	111.6	4.8
90	3.00	0.6	1.4	23.0	17.6	0.77	2.14	30.3	10.8	34.2	2.07	27.1	111.5	4.8
	4.50	1.2	2.9	24.2	18.2	0.75	1.97	30.9	12.3	36.2	2.13	28.9	113.9	5.0
	6.00	2.1	4.8	24.8	18.5	0.74	1.89	31.2	13.1	37.2	2.17	29.8	115.2	5.0
100	3.00	0.6	1.3	21.4	16.8	0.79	2.41	29.6	8.9	34.2	2.07	27.1	111.6	4.8
	4.50	1.2	2.8	22.5	17.4	0.77	2.22	30.1	10.2	34.2	2.07	27.1	111.6	4.8
	6.00	2.0	4.6	23.1	17.7	0.76	2.13	30.4	10.9	34.2	2.07	27.1	111.6	4.8
110	3.00	0.6	1.3	19.6	16.0	0.81	2.72	28.9	7.2	34.2	2.07	27.1	111.6	4.8
	4.50	1.2	2.7	20.8	16.5	0.80	2.51	29.3	8.3	34.2	2.07	27.1	111.6	4.8
	6.00	1.9	4.5	21.4	16.8	0.79	2.40	29.6	8.9	34.2	2.07	27.1	111.6	4.8
120	3.00	0.5	1.2	17.9	15.1	0.84	3.08	28.4	5.8	34.2	2.07	27.1	111.6	4.8
	4.50	1.1	2.6	19.0	15.7	0.82	2.84	28.7	6.7	34.2	2.07	27.1	111.6	4.8
	6.00	1.9	4.4	19.6	16.0	0.81	2.72	28.9	7.2	34.2	2.07	27.1	111.6	4.8

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMS30 (EC Blower Motor)

Models:
SM
006-036

1,000 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	3.75	1.5	3.5	Operation Not Recommended						Operation Not Recommended				
	5.63	3.3	7.5											
	7.50	5.4	12.6											
30	3.75	1.3	3.1	32.7	22.7	0.70	1.14	36.6	28.7	17.6	1.77	11.6	87.2	2.9
	5.63	2.9	6.6	32.3	22.1	0.69	1.06	35.9	30.5	18.4	1.78	12.3	87.9	3.0
	7.50	5.0	11.6	32.0	21.7	0.68	1.02	35.5	31.2	18.8	1.78	12.7	88.3	3.1
40	3.75	1.0	2.3	32.6	23.0	0.71	1.26	36.9	25.8	20.6	1.80	14.5	90.0	3.4
	5.63	2.1	4.9	32.7	22.9	0.70	1.17	36.7	27.9	21.5	1.81	15.3	90.9	3.5
	7.50	3.5	8.0	32.7	22.7	0.70	1.13	36.5	28.8	22.0	1.82	15.8	91.4	3.6
50	3.75	1.0	2.2	31.9	22.8	0.71	1.40	36.7	22.8	23.5	1.84	17.3	92.9	3.8
	5.63	2.0	4.7	32.4	23.0	0.71	1.30	36.9	24.9	24.6	1.85	18.3	93.9	3.9
	7.50	3.4	7.9	32.6	23.0	0.71	1.26	36.9	25.9	25.2	1.86	18.8	94.5	4.0
60	3.75	0.9	2.1	30.8	22.1	0.72	1.56	36.1	19.7	26.4	1.88	20.0	95.7	4.1
	5.63	2.0	4.5	31.6	22.6	0.72	1.45	36.5	21.8	27.7	1.91	21.2	96.9	4.3
	7.50	3.3	7.7	31.9	22.8	0.71	1.40	36.7	22.9	28.3	1.92	21.8	97.6	4.3
70	3.75	0.9	2.0	29.2	21.3	0.73	1.74	35.2	16.8	29.3	1.94	22.7	98.5	4.4
	5.63	1.9	4.4	30.3	21.9	0.72	1.62	35.8	18.7	30.7	1.97	24.0	99.9	4.6
	7.50	3.2	7.5	30.8	22.1	0.72	1.56	36.1	19.7	31.5	1.99	24.7	100.6	4.6
80	3.75	0.9	2.0	27.5	20.3	0.74	1.95	34.1	14.1	32.2	2.01	25.4	101.3	4.7
	5.63	1.8	4.2	28.6	20.9	0.73	1.81	34.8	15.8	33.8	2.05	26.8	102.8	4.8
	7.50	3.2	7.3	29.2	21.3	0.73	1.74	35.2	16.7	34.6	2.07	27.6	103.7	4.9
90	3.75	0.8	1.9	25.5	19.3	0.76	2.19	33.0	11.6	35.1	2.08	28.0	104.1	4.9
	5.63	1.8	4.1	26.8	19.9	0.75	2.04	33.7	13.1	36.8	2.14	29.5	105.8	5.1
	7.50	3.1	7.1	27.4	20.3	0.74	1.96	34.1	13.9	37.8	2.17	30.4	106.7	5.1
100	3.75	0.8	1.8	23.4	18.3	0.78	2.47	31.9	9.5	33.8	2.05	26.8	102.8	4.8
	5.63	1.7	3.9	24.7	18.9	0.77	2.30	32.5	10.7	33.8	2.05	26.8	102.8	4.8
	7.50	3.0	6.8	25.3	19.2	0.76	2.21	32.9	11.4	33.8	2.05	26.8	102.8	4.8
110	3.75	0.8	1.8	21.3	17.4	0.82	2.79	30.8	7.6	33.8	2.05	26.8	102.8	4.8
	5.63	1.7	3.8	22.5	17.9	0.80	2.60	31.4	8.7	33.8	2.05	26.8	102.8	4.8
	7.50	2.8	6.6	23.2	18.2	0.79	2.51	31.7	9.2	33.8	2.05	26.8	102.8	4.8
120	3.75	0.7	1.7	19.2	16.6	0.87	3.16	30.0	6.1	33.8	2.05	26.8	102.8	4.8
	5.63	1.6	3.7	20.4	17.0	0.84	2.95	30.4	6.9	33.8	2.05	26.8	102.8	4.8
	7.50	2.7	6.3	21.0	17.3	0.82	2.84	30.7	7.4	33.8	2.05	26.8	102.8	4.8

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

ClimateMaster works continually to improve its products. As a result, the design and specifications of each product at the time of order may be changed without notice and may not be as described herein. Please contact ClimateMaster's Customer Service Department at 1-800-299-9747 for specific information on the current design and specifications. Statements and other information contained herein are not express warranties and do not form the basis of any bargain between the parties, but are merely ClimateMaster's opinion or commendation of its products. The latest version of this document is available at www.climate-master.com. Engineered and assembled in the USA. © ClimateMaster, Inc. All Rights Reserved 2024

Performance Data SMS36 (EC Blower Motor)

Models:
SM
006-036

1,200 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	4.50	2.2	5.1	Operation Not Recommended						Operation Not Recommended				
	6.75	4.5	10.3											
	9.00	7.2	16.7											
30	4.50	1.8	4.2	39.7	27.3	0.69	1.48	44.8	26.8	21.9	2.15	14.6	87.8	3.0
	6.75	3.6	8.4	38.8	26.5	0.68	1.38	43.5	28.1	22.8	2.17	15.4	88.5	3.1
	9.00	5.9	13.6	38.1	26.0	0.68	1.34	42.7	28.5	23.2	2.17	15.8	88.8	3.1
40	4.50	1.5	3.4	39.9	27.7	0.69	1.64	45.5	24.4	25.4	2.21	17.8	90.6	3.4
	6.75	2.9	6.8	39.9	27.5	0.69	1.53	45.1	26.1	26.5	2.23	18.9	91.5	3.5
	9.00	4.8	11.0	39.7	27.3	0.69	1.48	44.7	26.9	27.1	2.25	19.4	91.9	3.5
50	4.50	1.4	3.2	39.2	27.5	0.70	1.81	45.4	21.6	29.0	2.28	21.2	93.5	3.7
	6.75	2.8	6.4	39.8	27.7	0.70	1.69	45.6	23.6	30.3	2.31	22.4	94.6	3.8
	9.00	4.5	10.4	40.0	27.7	0.69	1.63	45.5	24.5	31.1	2.32	23.1	95.2	3.9
60	4.50	1.3	3.1	37.7	26.9	0.71	2.01	44.6	18.8	32.6	2.36	24.6	96.5	4.1
	6.75	2.6	6.1	38.8	27.4	0.71	1.87	45.2	20.8	34.1	2.39	26.0	97.7	4.2
	9.00	4.3	9.9	39.2	27.6	0.70	1.80	45.4	21.8	34.9	2.41	26.7	98.3	4.3
70	4.50	1.3	2.9	35.8	25.9	0.72	2.24	43.4	16.0	36.2	2.43	27.9	99.3	4.4
	6.75	2.5	5.8	37.2	26.6	0.72	2.08	44.3	17.9	37.7	2.47	29.3	100.6	4.5
	9.00	4.0	9.3	37.8	26.9	0.71	2.00	44.6	18.9	38.5	2.48	30.1	101.2	4.5
80	4.50	1.2	2.7	33.5	24.7	0.74	2.51	42.1	13.4	39.4	2.50	30.8	101.9	4.6
	6.75	2.3	5.4	35.1	25.5	0.73	2.33	43.0	15.1	40.9	2.54	32.2	103.1	4.7
	9.00	3.8	8.8	35.8	25.9	0.72	2.24	43.4	16.0	41.6	2.56	32.9	103.7	4.8
90	4.50	1.1	2.6	31.1	23.3	0.75	2.83	40.7	11.0	42.1	2.57	33.3	104.1	4.8
	6.75	2.2	5.1	32.7	24.2	0.74	2.62	41.6	12.5	43.3	2.60	34.4	105.1	4.9
	9.00	3.6	8.3	33.5	24.6	0.74	2.52	42.0	13.3	43.8	2.62	34.9	105.5	4.9
100	4.50	1.1	2.5	28.6	21.9	0.77	3.20	39.6	8.9	40.9	2.54	32.2	103.1	4.7
	6.75	2.1	4.9	30.1	22.8	0.76	2.96	40.3	10.2	40.9	2.54	32.2	103.1	4.7
	9.00	3.5	8.0	30.9	23.2	0.75	2.85	40.7	10.9	40.9	2.54	32.2	103.1	4.7
110	4.50	1.0	2.4	26.3	20.6	0.78	3.64	38.7	7.2	40.9	2.54	32.2	103.1	4.7
	6.75	2.0	4.7	27.7	21.4	0.77	3.37	39.2	8.2	40.9	2.54	32.2	103.1	4.7
	9.00	3.3	7.7	28.4	21.8	0.77	3.24	39.4	8.8	40.9	2.54	32.2	103.1	4.7
120	4.50	1.0	2.3	24.2	19.5	0.80	4.18	38.4	5.8	40.9	2.54	32.2	103.1	4.7
	6.75	2.0	4.5	25.4	20.1	0.79	3.85	38.5	6.6	40.9	2.54	32.2	103.1	4.7
	9.00	3.2	7.4	26.0	20.4	0.79	3.70	38.6	7.0	40.9	2.54	32.2	103.1	4.7

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT06 (EC Blower Motor)

Models:
SM
006-036

300 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.13	1.6	3.6	Operation Not Recommended						Operation Not Recommended				
	1.69	3.0	6.9											
	2.25	4.9	11.3											
30	1.13	1.2	2.8	8.2	6.0	0.74	0.48	9.9	17.0	4.5	0.68	2.2	84.2	1.9
	1.69	2.7	6.2	8.2	5.9	0.72	0.45	9.7	18.0	4.7	0.68	2.4	84.9	2.0
	2.25	4.5	10.3	8.1	5.7	0.71	0.44	9.6	18.2	4.9	0.68	2.5	85.3	2.1
40	1.13	1.0	2.4	8.1	6.1	0.75	0.53	9.9	15.3	5.3	0.69	2.9	86.8	2.3
	1.69	1.9	4.5	8.2	6.1	0.74	0.49	9.9	16.7	5.6	0.69	3.2	87.8	2.4
	2.25	3.1	7.3	8.2	6.0	0.73	0.47	9.8	17.3	5.8	0.70	3.4	88.3	2.4
50	1.13	1.0	2.2	7.8	6.0	0.77	0.58	9.7	13.4	6.1	0.70	3.7	89.6	2.6
	1.69	1.9	4.3	8.0	6.1	0.75	0.54	9.9	14.9	6.5	0.71	4.1	90.7	2.7
	2.25	3.1	7.1	8.1	6.1	0.75	0.52	9.9	15.7	6.7	0.71	4.3	91.4	2.8
60	1.13	0.9	2.1	7.3	5.7	0.78	0.64	9.5	11.5	7.0	0.71	4.6	92.4	2.9
	1.69	1.8	4.2	7.7	5.9	0.77	0.59	9.7	13.0	7.5	0.72	5.0	93.7	3.0
	2.25	3.0	6.9	7.8	6.0	0.76	0.57	9.8	13.8	7.7	0.72	5.3	94.5	3.1
70	1.13	0.8	1.9	6.9	5.5	0.80	0.70	9.2	9.8	7.9	0.72	5.4	95.2	3.2
	1.69	1.8	4.1	7.2	5.7	0.78	0.65	9.5	11.1	8.4	0.73	5.9	96.8	3.4
	2.25	2.9	6.7	7.4	5.8	0.78	0.63	9.6	11.9	8.7	0.73	6.2	97.7	3.5
80	1.13	0.8	1.8	6.3	5.2	0.82	0.77	8.9	8.3	8.8	0.73	6.3	98.1	3.5
	1.69	1.7	3.9	6.7	5.4	0.80	0.72	9.2	9.4	9.4	0.74	6.9	99.9	3.7
	2.25	2.8	6.5	6.9	5.5	0.79	0.69	9.3	10.0	9.7	0.74	7.2	101.0	3.9
90	1.13	0.7	1.7	5.7	4.8	0.84	0.83	8.6	6.9	9.6	0.74	7.1	100.9	3.8
	1.69	1.6	3.8	6.1	5.1	0.82	0.79	8.8	7.8	10.3	0.74	7.8	103.0	4.1
	2.25	2.8	6.4	6.4	5.2	0.81	0.76	8.9	8.4	10.7	0.75	8.2	104.2	4.2
100	1.13	0.7	1.7	5.2	4.5	0.87	0.91	8.3	5.7	9.7	0.74	7.2	100.9	3.9
	1.69	1.6	3.7	5.6	4.7	0.85	0.86	8.5	6.5	9.7	0.74	7.2	100.9	3.9
	2.25	2.7	6.2	5.8	4.8	0.84	0.83	8.6	6.9	9.7	0.74	7.2	100.9	3.9
110	1.13	0.7	1.6	4.7	4.2	0.91	0.98	8.0	4.8	9.7	0.74	7.2	100.9	3.9
	1.69	1.6	3.6	5.0	4.4	0.88	0.93	8.2	5.3	9.7	0.74	7.2	100.9	3.9
	2.25	2.6	6.1	5.2	4.5	0.87	0.91	8.3	5.7	9.7	0.74	7.2	100.9	3.9
120	1.13	0.7	1.6	4.2	4.0	0.96	1.05	7.8	4.0	9.7	0.74	7.2	100.9	3.9
	1.69	1.5	3.5	4.5	4.1	0.93	1.01	7.9	4.4	9.7	0.74	7.2	100.9	3.9
	2.25	2.6	5.9	4.6	4.2	0.91	0.98	8.0	4.7	9.7	0.74	7.2	100.9	3.9

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT09 (EC Blower Motor)

Models:
SM
006-036

400 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.13	1.6	3.6	Operation Not Recommended						Operation Not Recommended				
	1.69	3.0	6.9											
	2.25	4.9	11.3											
30	1.13	1.2	2.8	11.9	8.7	0.74	0.50	13.6	23.9	6.4	0.70	4.0	84.2	2.7
	1.69	2.7	6.2	11.8	8.5	0.72	0.47	13.4	25.3	6.7	0.70	4.3	84.9	2.8
	2.25	4.5	10.3	11.7	8.3	0.71	0.46	13.2	25.6	6.9	0.70	4.5	85.3	2.9
40	1.13	1.0	2.4	11.7	8.8	0.75	0.54	13.5	21.5	7.5	0.71	5.1	86.8	3.1
	1.69	1.9	4.5	11.9	8.8	0.74	0.51	13.6	23.5	7.9	0.72	5.5	87.8	3.3
	2.25	3.1	7.3	11.9	8.7	0.73	0.49	13.6	24.3	8.2	0.72	5.7	88.3	3.3
50	1.13	1.0	2.2	11.2	8.6	0.77	0.60	13.3	18.8	8.7	0.72	6.2	89.6	3.5
	1.69	1.9	4.3	11.6	8.8	0.75	0.55	13.5	21.0	9.2	0.73	6.8	90.7	3.7
	2.25	3.1	7.1	11.7	8.8	0.75	0.53	13.6	22.1	9.6	0.73	7.1	91.4	3.8
60	1.13	0.9	2.1	10.6	8.3	0.78	0.66	12.9	16.2	9.9	0.73	7.4	92.4	4.0
	1.69	1.8	4.2	11.1	8.6	0.77	0.61	13.2	18.3	10.6	0.74	8.1	93.7	4.2
	2.25	3.0	6.9	11.3	8.7	0.76	0.59	13.3	19.4	11.0	0.74	8.4	94.5	4.3
70	1.13	0.8	1.9	9.9	7.9	0.80	0.72	12.4	13.8	11.2	0.74	8.6	95.2	4.4
	1.69	1.8	4.1	10.5	8.2	0.78	0.67	12.8	15.6	11.9	0.75	9.4	96.8	4.7
	2.25	2.9	6.7	10.8	8.4	0.78	0.65	13.0	16.7	12.4	0.75	9.8	97.7	4.8
80	1.13	0.8	1.8	9.1	7.5	0.82	0.79	11.8	11.6	12.4	0.75	9.8	98.1	4.8
	1.69	1.7	3.9	9.7	7.8	0.80	0.74	12.2	13.2	13.3	0.76	10.7	99.9	5.1
	2.25	2.8	6.5	10.0	8.0	0.79	0.71	12.4	14.1	13.8	0.76	11.2	101.0	5.3
90	1.13	0.7	1.7	8.3	7.0	0.84	0.86	11.3	9.7	13.7	0.76	11.1	100.9	5.3
	1.69	1.6	3.8	8.9	7.3	0.82	0.81	11.7	11.0	14.6	0.77	12.0	103.0	5.6
	2.25	2.8	6.4	9.2	7.5	0.81	0.78	11.9	11.7	15.2	0.77	12.6	104.2	5.8
100	1.13	0.7	1.7	7.5	6.5	0.87	0.93	10.7	8.1	13.8	0.76	11.2	100.9	5.3
	1.69	1.6	3.7	8.0	6.8	0.85	0.88	11.1	9.1	13.8	0.76	11.2	100.9	5.3
	2.25	2.7	6.2	8.3	7.0	0.84	0.86	11.3	9.7	13.8	0.76	11.2	100.9	5.3
110	1.13	0.7	1.6	6.7	6.1	0.91	1.01	10.2	6.7	13.8	0.76	11.2	100.9	5.3
	1.69	1.6	3.6	7.2	6.4	0.88	0.96	10.5	7.5	13.8	0.76	11.2	100.9	5.3
	2.25	2.6	6.1	7.5	6.5	0.87	0.94	10.7	8.0	13.8	0.76	11.2	100.9	5.3
120	1.13	0.7	1.6	6.0	5.8	0.96	1.08	9.7	5.6	13.8	0.76	11.2	100.9	5.3
	1.69	1.5	3.5	6.4	6.0	0.93	1.04	10.0	6.2	13.8	0.76	11.2	100.9	5.3
	2.25	2.6	5.9	6.7	6.1	0.91	1.01	10.1	6.6	13.8	0.76	11.2	100.9	5.3

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT12 (EC Blower Motor)

Models:
SM
006-036

450 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.50	2.3	5.3	Operation Not Recommended						Operation Not Recommended				
	2.25	4.7	10.8											
	3.00	7.8	18.0											
30	1.50	2.1	4.7	14.1	9.4	0.67	0.60	16.1	23.5	7.9	0.78	5.2	86.3	2.7
	2.25	4.3	9.9	13.8	9.0	0.65	0.57	15.8	24.2	8.3	0.79	5.6	87.1	2.8
	3.00	7.0	16.2	13.6	8.8	0.64	0.56	15.5	24.2	8.5	0.79	5.8	87.5	2.9
40	1.50	1.5	3.6	14.0	9.7	0.69	0.65	16.2	21.6	9.5	0.81	6.7	89.4	3.1
	2.25	3.1	7.3	14.1	9.5	0.67	0.61	16.2	23.1	10.0	0.81	7.2	90.4	3.3
	3.00	5.2	12.1	14.0	9.4	0.67	0.59	16.1	23.7	10.2	0.82	7.4	91.0	3.4
50	1.50	1.5	3.5	13.6	9.6	0.71	0.71	16.0	19.1	11.0	0.83	8.1	92.5	3.6
	2.25	3.1	7.1	13.9	9.7	0.69	0.66	16.2	21.0	11.6	0.84	8.7	93.7	3.7
	3.00	5.1	11.8	14.0	9.6	0.69	0.64	16.2	21.9	11.9	0.84	9.0	94.4	3.8
60	1.50	1.5	3.4	13.0	9.5	0.73	0.79	15.7	16.5	12.5	0.85	9.6	95.6	3.9
	2.25	3.0	6.9	13.5	9.6	0.71	0.73	16.0	18.4	13.2	0.86	10.3	97.1	4.1
	3.00	5.0	11.4	13.7	9.7	0.71	0.70	16.1	19.4	13.6	0.86	10.6	97.9	4.2
70	1.50	1.4	3.3	12.2	9.1	0.75	0.87	15.2	14.1	14.0	0.87	11.0	98.8	4.3
	2.25	2.9	6.7	12.8	9.4	0.73	0.81	15.6	15.8	14.8	0.88	11.8	100.4	4.5
	3.00	4.8	11.1	13.1	9.5	0.73	0.78	15.7	16.8	15.3	0.89	12.3	101.4	4.6
80	1.50	1.4	3.2	11.3	8.7	0.77	0.95	14.6	11.9	15.6	0.89	12.5	102.0	4.7
	2.25	2.8	6.5	12.0	9.0	0.75	0.89	15.0	13.4	16.5	0.90	13.5	103.9	4.9
	3.00	4.7	10.8	12.3	9.1	0.74	0.86	15.2	14.2	17.1	0.91	14.0	105.1	5.1
90	1.50	1.3	3.1	10.4	8.2	0.79	1.04	13.9	9.9	17.2	0.91	14.1	105.3	5.1
	2.25	2.8	6.4	11.0	8.5	0.77	0.98	14.4	11.2	18.3	0.93	15.2	107.6	5.3
	3.00	4.6	10.5	11.4	8.7	0.77	0.95	14.6	11.9	19.0	0.93	15.8	109.0	5.5
100	1.50	1.3	3.0	9.4	7.7	0.82	1.13	13.3	8.3	17.1	0.91	14.0	105.1	5.1
	2.25	2.7	6.2	10.0	8.0	0.80	1.08	13.7	9.3	17.1	0.91	14.0	105.1	5.1
	3.00	4.5	10.3	10.4	8.2	0.79	1.05	13.9	9.9	17.1	0.91	14.0	105.1	5.1
110	1.50	1.3	2.9	8.5	7.2	0.85	1.23	12.6	6.9	17.1	0.91	14.0	105.1	5.1
	2.25	2.6	6.1	9.0	7.5	0.83	1.17	13.0	7.7	17.1	0.91	14.0	105.1	5.1
	3.00	4.4	10.1	9.3	7.6	0.82	1.14	13.2	8.2	17.1	0.91	14.0	105.1	5.1
120	1.50	1.2	2.8	7.6	6.7	0.88	1.32	12.1	5.8	17.1	0.91	14.0	105.1	5.1
	2.25	2.6	5.9	8.1	7.0	0.86	1.27	12.4	6.4	17.1	0.91	14.0	105.1	5.1
	3.00	4.3	10.0	8.3	7.1	0.85	1.24	12.6	6.7	17.1	0.91	14.0	105.1	5.1

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

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Performance Data SMT15 (EC Blower Motor)

Models:
SM
006-036

600 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	1.88	0.5	1.2	Operation Not Recommended						Operation Not Recommended				
	2.81	1.6	3.8											
	3.75	2.7	6.3											
30	1.88	0.4	1.0	18.3	13.4	0.73	0.59	20.3	30.9	9.7	0.97	6.4	85.0	2.9
	2.81	1.4	3.2	17.9	12.5	0.70	0.56	19.8	32.2	10.2	0.97	6.8	85.7	3.1
	3.75	2.3	5.4	17.5	11.8	0.67	0.54	19.4	32.3	10.5	0.98	7.1	86.1	3.1
40	1.88	0.3	0.7	18.2	13.9	0.76	0.66	20.5	27.5	11.6	1.00	8.2	87.9	3.4
	2.81	0.9	2.1	18.3	13.6	0.74	0.61	20.4	30.2	12.3	1.01	8.8	88.9	3.6
	3.75	1.5	3.5	18.3	13.3	0.73	0.58	20.3	31.2	12.6	1.01	9.2	89.4	3.7
50	1.88	0.3	0.6	17.6	13.8	0.78	0.75	20.2	23.6	13.6	1.02	10.1	90.9	3.9
	2.81	0.9	2.0	18.1	13.9	0.77	0.68	20.4	26.6	14.4	1.03	10.9	92.2	4.1
	3.75	1.4	3.3	18.3	13.9	0.76	0.65	20.5	28.1	14.9	1.04	11.4	92.9	4.2
60	1.88	0.3	0.6	16.7	13.3	0.80	0.85	19.6	19.7	15.6	1.05	12.0	94.0	4.4
	2.81	0.8	1.9	17.4	13.7	0.79	0.77	20.1	22.6	16.6	1.06	13.0	95.5	4.6
	3.75	1.4	3.2	17.7	13.9	0.78	0.74	20.2	24.1	17.2	1.06	13.6	96.3	4.8
70	1.88	0.3	0.6	15.6	12.6	0.81	0.96	18.9	16.3	17.7	1.06	14.0	97.1	4.9
	2.81	0.8	1.8	16.4	13.1	0.80	0.88	19.4	18.7	18.9	1.07	15.2	98.8	5.1
	3.75	1.3	3.0	16.8	13.4	0.79	0.84	19.7	20.1	19.5	1.08	15.8	99.8	5.3
80	1.88	0.2	0.6	14.3	11.7	0.82	1.07	18.0	13.4	19.7	1.08	16.0	100.2	5.3
	2.81	0.7	1.7	15.2	12.3	0.81	0.99	18.6	15.3	21.0	1.09	17.3	102.1	5.6
	3.75	1.3	2.9	15.6	12.6	0.81	0.95	18.9	16.4	21.8	1.10	18.0	103.2	5.8
90	1.88	0.2	0.5	13.1	10.9	0.84	1.20	17.1	10.9	21.7	1.10	17.9	103.2	5.8
	2.81	0.7	1.6	13.9	11.4	0.82	1.12	17.7	12.4	23.1	1.10	19.3	105.3	6.1
	3.75	1.2	2.8	14.3	11.7	0.82	1.07	18.0	13.3	23.9	1.11	20.1	106.4	6.3
100	1.88	0.2	0.5	11.8	10.2	0.87	1.32	16.3	8.9	21.8	1.10	18.0	103.2	5.8
	2.81	0.7	1.6	12.6	10.6	0.85	1.24	16.8	10.1	21.8	1.10	18.0	103.2	5.8
	3.75	1.1	2.6	13.0	10.9	0.84	1.20	17.1	10.8	21.8	1.10	18.0	103.2	5.8
110	1.88	0.2	0.5	10.7	9.7	0.91	1.45	15.7	7.4	21.8	1.10	18.0	103.2	5.8
	2.81	0.6	1.5	11.3	10.0	0.88	1.38	16.0	8.2	21.8	1.10	18.0	103.2	5.8
	3.75	1.1	2.5	11.7	10.2	0.87	1.34	16.3	8.7	21.8	1.10	18.0	103.2	5.8
120	1.88	0.2	0.4	9.9	9.6	0.97	1.59	15.3	6.2	21.8	1.10	18.0	103.2	5.8
	2.81	0.6	1.4	10.3	9.6	0.93	1.51	15.5	6.8	21.8	1.10	18.0	103.2	5.8
	3.75	1.0	2.3	10.6	9.7	0.92	1.47	15.6	7.2	21.8	1.10	18.0	103.2	5.8

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions
- water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT18 (EC Blower Motor)

Models:
SM
006-036

700 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	2.25	0.8	1.8	Operation Not Recommended						Operation Not Recommended				
	3.38	1.9	4.4											
	4.50	3.3	7.7											
30	2.25	0.6	1.4	19.8	13.7	0.69	0.74	22.3	26.8	10.6	1.13	6.7	84.7	2.7
	3.38	1.6	3.7	19.6	13.2	0.67	0.69	22.0	28.4	11.1	1.14	7.2	85.4	2.9
	4.50	2.8	6.6	19.4	12.8	0.66	0.67	21.7	28.9	11.5	1.15	7.5	85.9	2.9
40	2.25	0.5	1.1	19.6	13.9	0.71	0.82	22.4	23.8	12.9	1.17	8.9	87.8	3.2
	3.38	1.2	2.7	19.8	13.8	0.70	0.76	22.4	25.9	13.6	1.18	9.6	88.7	3.4
	4.50	2.0	4.7	19.8	13.6	0.69	0.74	22.3	26.9	14.0	1.19	10.0	89.2	3.5
50	2.25	0.4	1.0	18.9	13.7	0.72	0.92	22.0	20.5	15.1	1.20	11.0	90.7	3.7
	3.38	1.1	2.6	19.4	13.9	0.71	0.85	22.3	22.8	15.9	1.21	11.8	91.8	3.8
	4.50	2.0	4.5	19.6	13.9	0.71	0.82	22.4	23.9	16.4	1.22	12.2	92.3	3.9
60	2.25	0.4	1.0	17.9	13.3	0.74	1.03	21.4	17.4	17.2	1.23	13.0	93.5	4.1
	3.38	1.1	2.5	18.6	13.6	0.73	0.95	21.9	19.5	18.1	1.24	13.8	94.6	4.3
	4.50	1.9	4.3	18.9	13.7	0.72	0.92	22.1	20.6	18.5	1.24	14.3	95.3	4.4
70	2.25	0.4	0.9	16.7	12.6	0.76	1.15	20.6	14.5	19.1	1.25	14.9	96.1	4.5
	3.38	1.0	2.4	17.5	13.1	0.75	1.07	21.1	16.3	20.1	1.26	15.8	97.4	4.7
	4.50	1.8	4.1	17.9	13.3	0.74	1.03	21.4	17.4	20.6	1.27	16.3	98.1	4.8
80	2.25	0.4	0.9	15.3	12.0	0.78	1.28	19.7	11.9	21.0	1.27	16.7	98.6	4.8
	3.38	1.0	2.2	16.2	12.4	0.77	1.20	20.3	13.5	22.1	1.29	17.7	100.0	5.0
	4.50	1.7	4.0	16.6	12.6	0.76	1.16	20.6	14.4	22.6	1.30	18.2	100.8	5.1
90	2.25	0.4	0.8	13.8	11.2	0.81	1.43	18.7	9.7	22.8	1.30	18.4	101.1	5.2
	3.38	0.9	2.1	14.7	11.7	0.79	1.34	19.3	11.0	24.0	1.32	19.5	102.6	5.3
	4.50	1.6	3.8	15.2	11.9	0.78	1.30	19.6	11.7	24.6	1.33	20.1	103.5	5.4
100	2.25	0.3	0.8	12.4	10.5	0.85	1.58	17.8	7.8	22.1	1.29	17.7	100.0	5.0
	3.38	0.9	2.1	13.2	10.9	0.83	1.49	18.3	8.8	22.1	1.29	17.7	100.0	5.0
	4.50	1.6	3.7	13.6	11.1	0.82	1.45	18.6	9.4	22.1	1.29	17.7	100.0	5.0
110	2.25	0.3	0.7	11.0	9.9	0.90	1.75	17.0	6.3	22.1	1.29	17.7	100.0	5.0
	3.38	0.9	2.0	11.7	10.2	0.87	1.66	17.4	7.1	22.1	1.29	17.7	100.0	5.0
	4.50	1.5	3.6	12.1	10.4	0.86	1.62	17.6	7.5	22.1	1.29	17.7	100.0	5.0
120	2.25	0.3	0.7	9.7	9.5	0.97	1.94	16.3	5.0	22.1	1.29	17.7	100.0	5.0
	3.38	0.8	1.9	10.3	9.7	0.94	1.84	16.6	5.6	22.1	1.29	17.7	100.0	5.0
	4.50	1.5	3.4	10.7	9.8	0.92	1.79	16.8	6.0	22.1	1.29	17.7	100.0	5.0

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

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Performance Data SMT24 (EC Blower Motor)

Models:
SM
006-036

800 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	3.00	1.2	2.8	Operation Not Recommended						Operation Not Recommended				
	4.50	2.5	5.9											
	6.00	4.1	9.6											
30	3.00	1.0	2.4	30.1	21.0	0.70	1.11	33.9	27.1	16.3	1.71	10.4	89.8	2.8
	4.50	2.1	5.0	30.3	21.1	0.70	1.02	33.7	29.7	17.1	1.73	11.2	90.8	2.9
	6.00	3.6	8.2	30.3	21.1	0.70	0.97	33.6	31.1	17.6	1.74	11.7	91.4	3.0
40	3.00	0.8	1.7	29.5	20.7	0.70	1.23	33.7	23.9	19.3	1.77	13.3	93.5	3.2
	4.50	1.6	3.6	30.0	20.9	0.70	1.13	33.9	26.4	20.4	1.79	14.3	94.8	3.4
	6.00	2.5	5.9	30.2	21.0	0.70	1.09	33.9	27.7	21.0	1.80	14.9	95.6	3.4
50	3.00	0.7	1.7	28.6	20.3	0.71	1.37	33.3	20.9	22.4	1.82	16.2	97.2	3.6
	4.50	1.5	3.4	29.3	20.6	0.70	1.26	33.6	23.3	23.7	1.84	17.4	98.8	3.8
	6.00	2.4	5.6	29.6	20.7	0.70	1.21	33.8	24.5	24.4	1.85	18.1	99.7	3.9
60	3.00	0.7	1.6	27.5	19.7	0.72	1.53	32.7	18.0	25.4	1.87	19.0	100.9	4.0
	4.50	1.4	3.3	28.4	20.1	0.71	1.40	33.2	20.2	26.9	1.90	20.4	102.7	4.2
	6.00	2.3	5.4	28.8	20.3	0.71	1.35	33.4	21.4	27.8	1.91	21.2	103.7	4.2
70	3.00	0.7	1.5	26.1	19.1	0.73	1.70	32.0	15.4	28.4	1.93	21.8	104.5	4.3
	4.50	1.4	3.1	27.2	19.6	0.72	1.57	32.5	17.3	30.1	1.96	23.4	106.6	4.5
	6.00	2.2	5.2	27.7	19.8	0.72	1.50	32.8	18.4	31.0	1.98	24.3	107.7	4.6
80	3.00	0.6	1.4	24.6	18.4	0.75	1.91	31.1	12.9	31.3	1.99	24.5	108.1	4.6
	4.50	1.3	3.0	25.8	18.9	0.73	1.75	31.7	14.7	33.2	2.04	26.2	110.3	4.8
	6.00	2.1	5.0	26.3	19.2	0.73	1.68	32.0	15.6	34.2	2.07	27.1	111.6	4.8
90	3.00	0.6	1.4	23.0	17.6	0.77	2.14	30.3	10.8	34.2	2.07	27.1	111.5	4.8
	4.50	1.2	2.9	24.2	18.2	0.75	1.97	30.9	12.3	36.2	2.13	28.9	113.9	5.0
	6.00	2.1	4.8	24.8	18.5	0.74	1.89	31.2	13.1	37.2	2.17	29.8	115.2	5.0
100	3.00	0.6	1.3	21.4	16.8	0.79	2.41	29.6	8.9	34.2	2.07	27.1	111.6	4.8
	4.50	1.2	2.8	22.5	17.4	0.77	2.22	30.1	10.2	34.2	2.07	27.1	111.6	4.8
	6.00	2.0	4.6	23.1	17.7	0.76	2.13	30.4	10.9	34.2	2.07	27.1	111.6	4.8
110	3.00	0.6	1.3	19.6	16.0	0.81	2.72	28.9	7.2	34.2	2.07	27.1	111.6	4.8
	4.50	1.2	2.7	20.8	16.5	0.80	2.51	29.3	8.3	34.2	2.07	27.1	111.6	4.8
	6.00	1.9	4.5	21.4	16.8	0.79	2.40	29.6	8.9	34.2	2.07	27.1	111.6	4.8
120	3.00	0.5	1.2	17.9	15.1	0.84	3.08	28.4	5.8	34.2	2.07	27.1	111.6	4.8
	4.50	1.1	2.6	19.0	15.7	0.82	2.84	28.7	6.7	34.2	2.07	27.1	111.6	4.8
	6.00	1.9	4.4	19.6	16.0	0.81	2.72	28.9	7.2	34.2	2.07	27.1	111.6	4.8

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT30 (EC Blower Motor)

Models:
SM
006-036

1,000 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	3.75	1.5	3.5	Operation Not Recommended						Operation Not Recommended				
	5.63	3.3	7.5											
	7.50	5.4	12.6											
30	3.75	1.3	3.1	32.7	22.7	0.70	1.24	36.9	26.3	18.5	1.87	12.1	87.2	2.9
	5.63	2.9	6.6	32.3	22.1	0.69	1.16	36.3	27.8	19.3	1.88	12.9	87.9	3.0
	7.50	5.0	11.6	32.0	21.7	0.68	1.13	35.8	28.4	19.8	1.88	13.4	88.3	3.1
40	3.75	1.0	2.3	32.6	23.0	0.71	1.36	37.2	23.9	21.6	1.90	15.1	90.0	3.3
	5.63	2.1	4.9	32.7	22.9	0.70	1.28	37.1	25.6	22.6	1.91	16.1	90.9	3.5
	7.50	3.5	8.0	32.7	22.7	0.70	1.24	36.9	26.4	23.1	1.91	16.6	91.4	3.5
50	3.75	1.0	2.2	31.9	22.7	0.71	1.50	37.0	21.2	24.6	1.93	18.0	92.9	3.7
	5.63	2.0	4.7	32.4	23.0	0.71	1.41	37.2	23.1	25.8	1.95	19.2	93.9	3.9
	7.50	3.4	7.9	32.6	23.0	0.71	1.36	37.2	24.0	26.4	1.96	19.8	94.5	4.0
60	3.75	0.9	2.1	30.7	22.1	0.72	1.66	36.4	18.5	27.6	1.98	20.9	95.7	4.1
	5.63	2.0	4.5	31.6	22.6	0.72	1.55	36.9	20.3	29.0	2.00	22.1	96.9	4.2
	7.50	3.3	7.7	31.9	22.8	0.71	1.50	37.0	21.3	29.7	2.02	22.8	97.6	4.3
70	3.75	0.9	2.0	29.2	21.3	0.73	1.85	35.5	15.8	30.6	2.03	23.7	98.5	4.4
	5.63	1.9	4.4	30.3	21.9	0.72	1.72	36.1	17.6	32.1	2.07	25.1	99.9	4.6
	7.50	3.2	7.5	30.8	22.1	0.72	1.66	36.4	18.5	32.9	2.08	25.8	100.6	4.6
80	3.75	0.9	2.0	27.4	20.3	0.74	2.06	34.5	13.3	33.6	2.10	26.4	101.3	4.7
	5.63	1.8	4.2	28.6	20.9	0.73	1.92	35.2	14.9	35.3	2.14	27.9	102.8	4.8
	7.50	3.2	7.3	29.2	21.3	0.73	1.85	35.5	15.8	36.2	2.17	28.8	103.7	4.9
90	3.75	0.8	1.9	25.5	19.3	0.76	2.30	33.3	11.1	36.5	2.18	29.1	104.1	4.9
	5.63	1.8	4.1	26.7	19.9	0.75	2.14	34.0	12.5	38.4	2.23	30.8	105.8	5.0
	7.50	3.1	7.1	27.4	20.3	0.74	2.07	34.4	13.2	39.4	2.26	31.6	106.7	5.1
100	3.75	0.8	1.8	23.4	18.3	0.78	2.58	32.2	9.1	35.3	2.14	27.9	102.8	4.8
	5.63	1.7	3.9	24.7	18.9	0.77	2.40	32.9	10.3	35.3	2.14	27.9	102.8	4.8
	7.50	3.0	6.8	25.3	19.2	0.76	2.32	33.2	10.9	35.3	2.14	27.9	102.8	4.8
110	3.75	0.8	1.8	21.3	17.4	0.82	2.90	31.1	7.3	35.3	2.14	27.9	102.8	4.8
	5.63	1.7	3.8	22.5	17.9	0.80	2.70	31.7	8.3	35.3	2.14	27.9	102.8	4.8
	7.50	2.8	6.6	23.1	18.2	0.79	2.61	32.0	8.9	35.3	2.14	27.9	102.8	4.8
120	3.75	0.7	1.7	19.2	16.6	0.87	3.26	30.3	5.9	35.3	2.14	27.9	102.8	4.8
	5.63	1.6	3.7	20.3	17.0	0.84	3.05	30.7	6.7	35.3	2.14	27.9	102.8	4.8
	7.50	2.7	6.3	20.9	17.3	0.83	2.95	31.0	7.1	35.3	2.14	27.9	102.8	4.8

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Performance Data SMT36 (EC Blower Motor)

Models:
SM
006-036

1,200 CFM Nominal Airflow

WATER / BRINE				COOLING - EAT 80.6/66.2 °F						HEATING - EAT 70°F				
EWT °F	FLOW GPM	PD psi	PD Ft	TC	SC	S/T	kW	HR	EER	HC	kW	HE	LAT	COP
20	4.50	2.2	5.1	Operation Not Recommended						Operation Not Recommended				
	6.75	4.5	10.3											
	9.00	7.2	16.7											
30	4.50	1.8	4.2	39.7	27.3	0.69	1.67	45.4	23.8	23.2	2.35	15.2	87.8	2.9
	6.75	3.6	8.4	38.9	26.6	0.68	1.57	44.2	24.8	24.1	2.36	16.1	88.5	3.0
	9.00	5.9	13.6	38.2	26.0	0.68	1.52	43.4	25.1	24.6	2.37	16.6	88.8	3.0
40	4.50	1.5	3.4	39.9	27.7	0.69	1.83	46.2	21.8	26.8	2.41	18.6	90.6	3.3
	6.75	2.9	6.8	39.9	27.5	0.69	1.72	45.8	23.3	28.0	2.43	19.7	91.5	3.4
	9.00	4.8	11.0	39.7	27.3	0.69	1.66	45.4	23.9	28.7	2.45	20.3	91.9	3.4
50	4.50	1.4	3.2	39.2	27.5	0.70	2.01	46.0	19.5	30.6	2.48	22.1	93.5	3.6
	6.75	2.8	6.4	39.8	27.7	0.70	1.88	46.2	21.2	32.0	2.51	23.4	94.6	3.7
	9.00	4.5	10.4	40.0	27.7	0.69	1.82	46.2	22.0	32.8	2.53	24.2	95.2	3.8
60	4.50	1.3	3.1	37.7	26.9	0.71	2.21	45.2	17.0	34.3	2.56	25.6	96.5	3.9
	6.75	2.6	6.1	38.8	27.4	0.71	2.07	45.8	18.8	36.0	2.59	27.1	97.7	4.1
	9.00	4.3	9.9	39.2	27.6	0.70	2.00	46.0	19.6	36.8	2.61	27.9	98.3	4.1
70	4.50	1.3	2.9	35.8	25.9	0.72	2.45	44.1	14.6	38.0	2.63	29.0	99.3	4.2
	6.75	2.5	5.8	37.1	26.6	0.72	2.28	44.9	16.3	39.7	2.67	30.6	100.6	4.4
	9.00	4.0	9.3	37.8	26.9	0.71	2.20	45.3	17.1	40.6	2.69	31.4	101.2	4.4
80	4.50	1.2	2.7	33.5	24.7	0.74	2.73	42.8	12.3	41.3	2.71	32.1	101.9	4.5
	6.75	2.3	5.4	35.0	25.5	0.73	2.54	43.7	13.8	43.0	2.74	33.6	103.1	4.6
	9.00	3.8	8.8	35.8	25.9	0.72	2.45	44.1	14.6	43.8	2.76	34.3	103.7	4.6
90	4.50	1.1	2.6	31.1	23.3	0.75	3.05	41.5	10.2	44.2	2.77	34.7	104.1	4.7
	6.75	2.2	5.1	32.6	24.2	0.74	2.84	42.3	11.5	45.5	2.81	35.9	105.1	4.7
	9.00	3.6	8.3	33.4	24.6	0.74	2.73	42.8	12.2	46.1	2.83	36.5	105.5	4.8
100	4.50	1.1	2.5	28.6	21.9	0.77	3.44	40.3	8.3	43.0	2.74	33.6	103.1	4.6
	6.75	2.1	4.9	30.1	22.8	0.76	3.19	41.0	9.4	43.0	2.74	33.6	103.1	4.6
	9.00	3.5	8.0	30.9	23.2	0.75	3.07	41.4	10.1	43.0	2.74	33.6	103.1	4.6
110	4.50	1.0	2.4	26.2	20.6	0.78	3.90	39.5	6.7	43.0	2.74	33.6	103.1	4.6
	6.75	2.0	4.7	27.6	21.4	0.77	3.61	39.9	7.7	43.0	2.74	33.6	103.1	4.6
	9.00	3.3	7.7	28.4	21.8	0.77	3.48	40.2	8.2	43.0	2.74	33.6	103.1	4.6
120	4.50	1.0	2.3	24.2	19.4	0.80	4.44	39.3	5.4	43.0	2.74	33.6	103.1	4.6
	6.75	2.0	4.5	25.3	20.1	0.79	4.11	39.4	6.2	43.0	2.74	33.6	103.1	4.6
	9.00	3.2	7.4	26.0	20.4	0.79	3.95	39.5	6.6	43.0	2.74	33.6	103.1	4.6

Notes:

- Interpolation is permissible, extrapolation is not.
- All entering air conditions are 80°F (26.6°C) DB and 67°F (19.4°C) WB in cooling, and 70°F (21°C) DB in heating
- All performance data is based upon the lower voltage of dual voltage rated units
- See performance correction tables for operating conditions other than those listed above.
- Table does not reflect corrections for Fan and Pump watts used is ISO-13256
- Operation below 40°F (4.4°C) EWT is based upon 20% methanol antifreeze solution.
- All performance data is based upon 0.0-inch External Static.
- Operation in the darker shaded region is only permissible with use of ClimateMaster Modulating Water valve. At these conditions water flow will be reduced in order to maintain a leaving water temperature of 70 °F (21°C)

Airflow Correction

Airflow % of Nominal (Rated) SCFM	Cooling				Heating		
	Total Capacity	Sensible Capacity	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction
70	0.921	0.8	0.969	0.943	0.942	1.077	0.934
75	0.934	0.833	0.974	0.952	0.952	1.062	0.947
80	0.946	0.866	0.979	0.961	0.961	1.048	0.958
85	0.958	0.899	0.985	0.97	0.971	1.035	0.969
90	0.971	0.932	0.99	0.979	0.980	1.023	0.979
95	0.985	0.966	0.995	0.989	0.990	1.011	0.989
100	1.000	1.000	1.000	1.000	1.000	1.000	1.000
105	1.017	1.035	1.005	1.013	1.010	0.989	1.011

Cooling Corrections

Ent. Air WB °F	Total Capacity	Sensible Capacity-Entering Air Dry Bulb, °F								Power	Heat of Rejection
		65	70	75	80	80.6	85	90	95		
45	0.557	*	*	*	*	*	*	*	*	0.986	0.672
50	0.658	1.100	*	*	*	*	*	*	*	0.989	0.747
55	0.758	0.861	1.091	*	*	*	*	*	*	0.992	0.821
60	0.859	0.623	0.854	1.091	1.325	1.383	*	*	*	0.996	0.896
65	0.960	*	0.617	0.857	1.093	1.151	1.326	*	*	0.999	0.970
66.2	0.984	*	0.561	0.801	1.037	1.095	1.270	1.521	*	1.000	0.988
67	1.000	*	0.523	0.763	1.000	1.058	1.232	1.482	*	1.000	1.000
70	1.060	*	*	0.623	0.861	0.919	1.090	1.339	1.563	1.002	1.045
75	1.161	*	*	*	0.629	0.686	0.854	1.101	1.318	1.005	1.119

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

Heating Corrections

Entering Air DB°F	Heating Capacity	Power	Heat of Extraction
45	1.107	0.768	1.181
50	1.085	0.814	1.143
55	1.064	0.860	1.108
60	1.043	0.906	1.072
65	1.022	0.952	1.036
68	1.009	0.981	1.015
70	1.000	1.000	1.000
75	0.982	1.050	0.962
80	0.953	1.103	0.921

Motorized Water Valve

Unit Size	N.O./N.C. Motorized Water Valves (MWV)		Modulating Valve	
	Cv	Max Close-Off Pressure	Cv	Max Close-Off Pressure
	GPM/psig	psig	GPM/psig	psig
06	4.9	125	3.0	200
09	4.9	125	3.0	200
12	4.9	125	3.0	200
15	10.3	125	4.7	200
18	10.3	125	4.7	200
24	10.3	125	7.4	200
30	10.3	125	7.4	200
36	10.3	125	7.4	200

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Antifreeze Correction Table

Models:
SM
006-036

EWT	Antifreeze Type	Antifreeze %	Cooling			Heating		WPD
			Total Cap	Sensible Cap	Watts	Total Cap	Watts	
90	Water	0%	1.000	1.000	1.000	1.000	1.000	1.000
	Ethanol	5%	0.998	0.998	1.002	0.996	0.999	1.025
		10%	0.996	0.996	1.003	0.991	0.997	1.048
		15%	0.994	0.994	1.005	0.987	0.996	1.098
		20%	0.991	0.991	1.006	0.982	0.994	1.142
		25%	0.986	0.986	1.009	0.972	0.991	1.207
		30%	0.981	0.981	1.012	0.962	0.988	1.265
		35%	0.977	0.977	1.015	0.953	0.985	1.312
		40%	0.972	0.972	1.018	0.943	0.982	1.370
		45%	0.966	0.966	1.023	0.931	0.978	1.431
		50%	0.959	0.959	1.027	0.918	0.974	1.494
	Ethylene Glycol	5%	0.998	0.998	1.002	0.996	0.999	1.021
		10%	0.996	0.996	1.003	0.991	0.997	1.040
		15%	0.994	0.994	1.004	0.987	0.996	1.079
		20%	0.991	0.991	1.005	0.982	0.995	1.114
		25%	0.988	0.988	1.008	0.976	0.993	1.146
		30%	0.985	0.985	1.010	0.969	0.990	1.175
		35%	0.982	0.982	1.012	0.963	0.988	1.208
		40%	0.979	0.979	1.014	0.956	0.986	1.243
		45%	0.976	0.976	1.016	0.950	0.984	1.278
		50%	0.972	0.972	1.018	0.943	0.982	1.314
	Methanol	5%	0.997	0.997	1.002	0.993	0.998	1.039
		10%	0.993	0.993	1.004	0.986	0.996	1.075
		15%	0.990	0.990	1.007	0.979	0.994	1.116
		20%	0.986	0.986	1.009	0.972	0.991	1.154
		25%	0.982	0.982	1.012	0.964	0.989	1.189
		30%	0.978	0.978	1.014	0.955	0.986	1.221
		35%	0.974	0.974	1.017	0.947	0.984	1.267
		40%	0.970	0.970	1.020	0.939	0.981	1.310
		45%	0.966	0.966	1.023	0.930	0.978	1.353
		50%	0.961	0.961	1.026	0.920	0.975	1.398
	Propylene Glycol	5%	0.995	0.995	1.003	0.990	0.997	1.065
		10%	0.990	0.990	1.006	0.980	0.994	1.119
		15%	0.986	0.986	1.009	0.971	0.991	1.152
		20%	0.981	0.981	1.012	0.962	0.988	1.182
		25%	0.978	0.978	1.014	0.956	0.986	1.227
		30%	0.975	0.975	1.016	0.950	0.984	1.267
		35%	0.972	0.972	1.018	0.944	0.982	1.312
		40%	0.969	0.969	1.020	0.938	0.980	1.356
		45%	0.965	0.965	1.023	0.929	0.977	1.402
		50%	0.960	0.960	1.026	0.919	0.974	1.450

Table continued on next page

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Antifreeze Correction Table

Models:
SM
006-036

Table continued from previous page

EWT	Antifreeze Type	Antifreeze %	Cooling			Heating		WPD
			Total Cap	Sensible Cap	Watts	Total Cap	Watts	
30	Water	0%	1.000	1.000	1.000	1.000	1.000	1.000
	Ethanol	5%	0.991	0.991	1.006	0.981	0.994	1.140
		10%	0.981	0.981	1.012	0.961	0.988	1.242
		15%	0.973	0.973	1.018	0.944	0.983	1.295
		20%	0.964	0.964	1.024	0.927	0.977	1.343
		25%	0.959	0.959	1.028	0.917	0.974	1.363
		30%	0.954	0.954	1.031	0.907	0.970	1.383
		35%	0.949	0.949	1.035	0.897	0.967	1.468
		40%	0.944	0.944	1.038	0.887	0.964	1.523
		45%	0.940	0.940	1.041	0.880	0.962	1.580
	50%	0.936	0.936	1.043	0.872	0.959	1.639	
	Ethylene Glycol	5%	0.997	0.997	1.002	0.993	0.998	1.040
		10%	0.993	0.993	1.004	0.986	0.996	1.075
		15%	0.990	0.990	1.006	0.980	0.994	1.122
		20%	0.987	0.987	1.008	0.973	0.992	1.163
		25%	0.983	0.983	1.011	0.966	0.990	1.195
		30%	0.979	0.979	1.013	0.958	0.987	1.225
		35%	0.976	0.976	1.016	0.951	0.985	1.279
		40%	0.972	0.972	1.018	0.943	0.982	1.324
		45%	0.969	0.969	1.021	0.937	0.980	1.371
	50%	0.966	0.966	1.023	0.930	0.978	1.419	
	Methanol	5%	0.995	0.995	1.004	0.989	0.997	1.069
		10%	0.989	0.989	1.007	0.978	0.993	1.127
		15%	0.984	0.984	1.011	0.968	0.990	1.164
		20%	0.979	0.979	1.014	0.957	0.986	1.197
		25%	0.975	0.975	1.017	0.949	0.984	1.216
		30%	0.971	0.971	1.019	0.941	0.981	1.235
		35%	0.967	0.967	1.022	0.933	0.979	1.286
		40%	0.963	0.963	1.025	0.924	0.976	1.323
		45%	0.959	0.959	1.028	0.917	0.974	1.360
	50%	0.955	0.955	1.030	0.910	0.971	1.399	
	Propylene Glycol	5%	0.995	0.995	1.004	0.989	0.997	1.071
		10%	0.989	0.989	1.007	0.978	0.993	1.130
		15%	0.985	0.985	1.010	0.968	0.990	1.206
		20%	0.980	0.980	1.013	0.958	0.987	1.270
		25%	0.974	0.974	1.017	0.947	0.983	1.359
		30%	0.968	0.968	1.021	0.935	0.979	1.433
		35%	0.963	0.963	1.025	0.924	0.976	1.522
		40%	0.957	0.957	1.029	0.913	0.972	1.614
		45%	0.949	0.949	1.034	0.898	0.967	1.712
	50%	0.941	0.941	1.039	0.882	0.962	1.816	

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Blower Performance SMS06

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)			
	CFM		0.0	0.1	0.2	0.3
CV EC	150	RPM	408	498	576	672
	200	RPM	544	664	768	896
	250	RPM	680	830	960	1,120
	300	RPM	780	920	1,060	1,200
	350	RPM	890	1,020	1,160	1,280
	400	RPM	990	1,110	1,240	1,340

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS09

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)				
			0.0	0.1	0.2	0.3	
CTEC	Speed Tap		0.0	0.1	0.2	0.3	
	1	RPM	680	Operation Not Recommended			
		Power (W)	20				
		CFM	250				
	2	RPM	760				870
		Power (W)	27				30
		CFM	290				270
	3	RPM	930	1,000	1,100	1,180	
		Power (W)	43	47	51	54	
		CFM	370	340	320	290	
	4	RPM	1,010	1,070	1,160	1,240	
		Power (W)	54	58	62	66	
CFM		410	380	360	330		
CV EC	CFM		0.0	0.1	0.2	0.3	
	250	RPM	680	830	960	1,120	
		Power (W)	22	30	38	47	
	300	RPM	780	920	1,060	1,200	
		Power (W)	29	38	48	58	
	350	RPM	890	1,020	1,160	1,280	
		Power (W)	40	50	62	73	
	400	RPM	990	1,110	1,240	1,340	
		Power (W)	52	65	79	92	

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS12

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)						
CTEC	Speed Tap		0.0	0.1	0.2	0.3			
	1	RPM	800	Operation Not Recommended					
		Power (W)	29						
		CFM	320						
	2	RPM	870				960	1,050	
		Power (W)	40				44	48	
		CFM	360				340	310	
	3	RPM	960				1,040	1,130	1,220
		Power (W)	59				63	67	71
		CFM	410				390	370	350
	4	RPM	1,030				1,110	1,190	1,280
		Power (W)	78				82	87	91
CFM		450	430				420	400	
CV EC	CFM		0.0	0.1	0.2	0.3			
	300	RPM	760	890	1,040	1,170			
		Power (W)	29	38	48	58			
	350	RPM	850	980	1,100	1,220			
		Power (W)	40	50	62	73			
	400	RPM	940	1,060	1,170	1,280			
		Power (W)	52	65	79	92			
	450	RPM	1,030	1,140	1,230	1,330			
		Power (W)	73	87	101	115			
	500	RPM	1,120	1,220					
		Power (W)	97	111					

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS15

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)				
CTEC	Speed Tap		0.0	0.1	0.2	0.3	
	1	RPM	590	Operation Not Recommended			
		Power (W)	41				
		CFM	430				
	2	RPM	660	710	760	810	
		Power (W)	49	59	59	59	
		CFM	500	460	410	370	
	3	RPM	760	800	840	890	
		Power (W)	77	77	77	86	
		CFM	600	570	520	480	
	4	RPM	780	830	870	910	
		Power (W)	92	92	103	103	
		CFM	620	600	560	520	
	5	RPM	870	900	940	990	
		Power (W)	120	120	130	130	
		CFM	710	690	660	630	
	CV EC	CFM		0.0	0.1	0.2	0.3
		500	RPM	660	740	820	900
Power (W)			50	64	78	93	
600		RPM	760	830	890	970	
		Power (W)	83	97	111	125	
650		RPM	810	870	930	1,000	
		Power (W)	104	118	133	147	
700		RPM	860	910	960	1,030	
		Power (W)	125	140	155	170	

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS18

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)				
CTEC	Speed Tap		0.0	0.1	0.2	0.3	
	1	RPM	650	Operation Not Recommended			
		Power (W)	57				
		CFM	460				
	2	RPM	730	760	810		
		Power (W)	70	80	80		
		CFM	530	500	470		
	3	RPM	790	820	870	920	
		Power (W)	97	97	107	107	
		CFM	580	550	520	490	
	4	RPM	880	920	950	1,000	
		Power (W)	137	137	147	147	
		CFM	650	630	600	580	
	5	RPM	950	990	1,030	1,070	
		Power (W)	177	177	187	187	
CFM		710	690	670	650		
CV EC	CFM		0.0	0.1	0.2	0.3	
	600	RPM	660	740	820	900	
		Power (W)	51	65	79	93	
	650	RPM	690	770	845	920	
		Power (W)	59	73	87	101	
	700	RPM	720	800	870	940	
		Power (W)	67	81	95	109	
	750	RPM	755	825	890	960	
		Power (W)	77	91	105	120	
	800	RPM	790	850	910	980	
				86	100	115	130

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS24

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)			
CTEC	Speed Tap		0.0	0.1	0.2	0.3
	1	RPM	640	690	730	
		Power (W)	62	68	76	
		CFM	710	660	600	
	2	RPM	690	730	780	850
		Power (W)	89	97	102	109
		CFM	820	770	720	670
	3	RPM	740	780	830	890
		Power (W)	120	129	134	143
		CFM	930	880	830	790
	4	RPM		830	880	920
		Power (W)		169	173	185
		CFM		990	950	910
	5	RPM		Operation Not Recommended		
		Power (W)				
CFM						
CV EC	CFM		0.0	0.1	0.2	0.3
	650	RPM	620	680	750	845
		Power (W)	83	101	119	138
	700	RPM	640	700	770	860
		Power (W)	96	115	134	153
	800	RPM	680	750	820	890
		Power (W)	122	143	164	184
	900	RPM	720	790	860	920
		Power (W)	155	176	197	218
	950	RPM	740	810	880	930
			193	214	234	255

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS30

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)			
			0.0	0.1	0.2	0.3
CTEC	Speed Tap		0.0	0.1	0.2	0.3
	1	RPM	770	770	800	
		Power (W)	105	113	118	
		CFM	880	830	780	
	2	RPM	860	840	880	940
		Power (W)	151	158	165	170
		CFM	1,000	960	920	900
	3	RPM	950	920	960	1,000
		Power (W)	210	217	225	229
		CFM	1,140	1,100	1,070	1,030
	4	RPM		1,000	1,040	1,060
		Power (W)		285	295	299
		CFM		1,230	1,200	1,160
	5	RPM		Operation Not Recommended		
		Power (W)				
CFM						
CV EC	CFM		0.0	0.1	0.2	0.3
	850	RPM	754	776	846	920
		Power (W)	147	173	199	224
	900	RPM	789	807	874	943
		Power (W)	171	198	224	250
	1,000	RPM	860	870	930	990
		Power (W)	219	247	275	303
	1,100	RPM	920	920	980	1,030
		Power (W)	310	336	361	387

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMS36

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)			
CTEC	Speed Tap		0.0	0.1	0.2	0.3
	1	RPM	880	910	950	
		Power (W)	131	132	141	
		CFM	990	950	910	
	2	RPM	970	1,010	1,050	1,090
		Power (W)	191	193	199	209
		CFM	1,130	1,100	1,080	1,040
	3	RPM	1,070	1,110	1,150	1,170
		Power (W)	267	269	276	288
		CFM	1,280	1,260	1,240	1,190
	4	RPM	1,190	1,210	1,250	1,270
		Power (W)	373	376	387	398
		CFM	1,450	1,420	1,410	1,370
	5	RPM	Operation Not Recommended			
		Power (W)				
CFM						
CV EC	CFM		0.0	0.1	0.2	0.3
	900	RPM	820	880	940	1,010
		Power (W)	183	208	234	260
	1,000	RPM	887	947	1,000	1,070
		Power (W)	242	270	297	325
	1,200	RPM	1,020	1,070	1,120	1,180
		Power (W)	362	393	425	456
	1,250	RPM	1,053	1,103	1,153	1,207
			411	440	470	499

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT06

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
CV EC		CFM								
	150	RPM	486	570	660	738	822	894	936	984
	200	RPM	648	760	880	984	1,096	1,192	1,248	1,312
	250	RPM	810	950	1,100	1,230	1,370	1,490	1,560	1,640
	300	RPM	900	1,050	1,180	1,300	1,410	1,520	1,590	1,660
	350	RPM	1,000	1,140	1,260	1,380	1,450	1,540	1,620	1,690
	400	RPM	1,100	1,230	1,340	1,450	1,490	1,570		

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT09

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)								
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	
	1	RPM	980	1,080	1,170	1,260	1,360	Operation Not Recommended			
		Power (W)	47	51	54	58	62				
		CFM	340	320	290	270	240				
	2	RPM	1,060	1,160	1,230	1,320	1,390				1,500
		Power (W)	58	62	66	70	75				79
		CFM	380	360	330	310	280				260
	3	RPM	Operation Not Recommended		1,230	1,310	1,390	1,440	1,530	1,590	1,650
		Power (W)	Operation Not Recommended		79	84	88	92	97	101	105
		CFM	Operation Not Recommended		400	380	360	340	320	290	270
	4	RPM	Operation Not Recommended				1,470	1,480	1,550	1,630	1,680
		Power (W)	Operation Not Recommended				108	113	117	122	126
CFM		Operation Not Recommended				410	390	370	360	340	
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	
	250	RPM	810	950	1,100	1,230	1,370	1,490	1,560	1,640	
		Power (W)	30	38	47	57	67	78	89	101	
	300	RPM	900	1,050	1,180	1,300	1,410	1,520	1,590	1,660	
		Power (W)	38	48	58	69	81	93	105	118	
	350	RPM	1,000	1,140	1,260	1,380	1,450	1,540	1,620	1,690	
		Power (W)	50	62	73	85	98	110	124	137	
	400	RPM	1,100	1,230	1,340	1,450	1,490	1,570	Operation Not Recommended		
		Power (W)	65	79	92	105	119	132			

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT12

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)													
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
	1	RPM	1,070	1,140	1,230	1,320	1,400	Operation Not Recommended								
		Power (W)	66	70	74	78	82									
		CFM	410	380	360	330	310									
	2	RPM	1,140	1,190	1,280	1,370	1,430				1,510	1,580				
		Power (W)	54	58	61	65	69				73	77				
		CFM	450	420	400	380	360				330	310				
	3	RPM	1,190	1,240	1,320	1,400	1,450	1,530	1,590	1,660						
		Power (W)	79	83	87	91	96	100	104	108						
		CFM	480	460	440	420	400	370	350	330						
	4	RPM	Operation Not Recommended				1,510	1,580	1,630	1,690						
		Power (W)	Operation Not Recommended				132	137	141	145						
CFM		Operation Not Recommended				500	480	460	440							
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8						
	300	RPM	890	1,040	1,170	1,300	1,400	1,500	1,570	1,660						
		Power (W)	38	48	58	69	81	93	105	118						
	350	RPM	980	1,100	1,220	1,340	1,430	1,520	1,590	1,670						
		Power (W)	50	62	73	85	98	110	124	137						
	400	RPM	1,060	1,170	1,280	1,380	1,450	1,540	Operation Not Recommended							
		Power (W)	65	79	92	105	119	132								
	450	RPM	1,140	1,230	1,330	1,430	Operation Not Recommended									
		Power (W)	87	101	115	128										
	500	RPM	1,220	Operation Not Recommended												
		Power (W)	111													

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT15

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)											
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8				
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8				
	1	RPM	720	770	810	870	Operation Not Recommended							
		Power (W)	66	70	74	79								
		CFM	560	520	480	430								
	2	RPM	770	810	850	910					960			
		Power (W)	79	83	87	92					98			
		CFM	610	570	540	500					450			
	3	RPM	820	860	890	930					990	1,040		
		Power (W)	95	101	104	110					114	121		
		CFM	660	630	600	540					500	460		
	4	RPM	850	900	910	970					1,010	1,070	1,120	
		Power (W)	107	111	117	123					128	134	141	
		CFM	690	670	630	600					560	520	470	
	5	RPM			960	1,010					1,050	1,100	1,150	1,210
		Power (W)			142	147					153	159	166	167
CFM		710			670	640					600	560	510	
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8				
	500	RPM	670	750	830	910	990	1,060	1,130	1,210				
		Power (W)	50	64	78	93	107	121	135	150				
	550	RPM	715	795	860	940	1,010	1,080	1,145	1,220				
		Power (W)	67	81	95	109	123	137	151	166				
	600	RPM	760	840	890	970	1,030	1,100	1,160	1,230				
		Power (W)	83	97	111	125	139	153	167	181				
	650	RPM	810	880	920	1,000	1,050	1,120	1,180	1,250				
		Power (W)	104	118	133	147	162	176	191	205				
	700	RPM	860	930	960	1,030	1,070	1,140	1,200	1,260				
		Power (W)	125	140	155	170	185	199	214	229				

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT18

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)							
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
	1	RPM	750	800	850	880	Operation Not Recommended			
		Power (W)	73	77	82	87				
		CFM	590	550	500	450				
	2	RPM	820	860	910	960	990	1,030	Operation Not Recommended	
		Power (W)	95	99	105	110	115	119		
		CFM	660	630	590	540	500	460		
	3	RPM	890	930	960	1,040	1,060	1,090	1,130	1,200
		Power (W)	123	127	132	138	144	149	154	158
		CFM	730	700	670	640	590	550	520	490
	4	RPM	Operation Not Recommended	970	1,000	1,080	1,110	1,140	1,170	1,220
		Power (W)		148	152	158	164	170	176	172
		CFM		750	720	690	660	610	570	520
	5	RPM	Operation Not Recommended					1,230	1,180	1,180
		Power (W)	Operation Not Recommended					217	182	154
CFM		Operation Not Recommended					730	580	470	
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
	600	RPM	760	840	920	1,010	1,070	1,130	1,200	1,270
		Power (W)	88	102	116	130	144	158	172	186
	650	RPM	810	885	950	1,050	1,110	1,170	1,240	1,305
		Power (W)	113	128	142	156	170	185	199	213
	700	RPM	860	930	980	1,090	1,150	1,210	1,280	1,340
		Power (W)	138	153	167	182	196	211	225	240
	750	RPM	910	970	1,015	1,130	1,185	1,245	1,320	1,370
		Power (W)	169	185	200	216	231	247	262	278
	800	RPM	960	1,010	1,050	1,170	1,220	1,280	1,360	1,400
		Power (W)	199	216	232	249	265	282	298	315

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT24

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)												
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8					
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8					
	1	RPM	680	720	770	820	870	930	■	■					
		Power (W)	110	117	123	131	138	146							
		CFM	840	800	760	720	670	630							
	2	RPM	730	770	810	860	910	960	1,020	1,080					
		Power (W)	145	153	160	167	175	183	192	199					
		CFM	940	900	860	830	790	750	710	670					
	3	RPM	■	■	■	■	■	■	■	■					
		Power (W)									212	219	227	236	246
		CFM									940	900	870	830	790
	4	RPM									1,080	1,120			
		Power (W)									285	294			
		CFM									940	900			
	5	RPM	Operation Not Recommended												
		Power (W)													
CFM															
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8					
	650	RPM	585	655	730	800	860	935	1,005	1,075					
		Power (W)	65	83	101	119	138	156	174	192					
	750	RPM	635	700	770	835	895	965	1,030	1,090					
		Power (W)	90	109	129	149	169	189	209	228					
	850	RPM	685	745	810	870	930	995	1,055	1,110					
		Power (W)	118	139	160	181	201	222	244	264					
	950	RPM	740	790	850	900	970	1,020	1,080	1,120					
		Power (W)	172	193	214	234	255	276	296	317					

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT30

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)																											
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8																				
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8																				
	1	RPM	810	840	870	910	950	1,000	1,050	1,090																				
		Power (W)	177	185	194	203	212	221	229	236																				
		CFM	1,040	1,000	960	920	880	850	810	770																				
	2	RPM	850	890	920	960	990	1,040	1,090	1,130																				
		Power (W)	220	229	237	247	257	266	275	283																				
		CFM	1,110	1,080	1,050	1,010	970	940	910	880																				
	3	RPM	Operation Not Recommended					1,070	1,110	1,150	1,180																			
		Power (W)						351	363	373	384																			
		CFM						1,140	1,100	1,070	1,040																			
	4	RPM						Operation Not Recommended						1,190	1,220															
		Power (W)												442	451															
		CFM												1,170	1,140															
	5	RPM																												
		Power (W)																												
		CFM																												
	CV EC	CFM																				0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	
		850																				RPM	684	746	806	866	938	1,000	1,062	1,120
Power (W)																						122	147	173	199	224	250	276	301	
950		RPM																				748	808	862	922	986	1,046	1,100	1,154	
		Power (W)																				167	194	221	249	276	303	330	357	
1,050		RPM																				813	870	920	980	1,033	1,090	1,140	1,187	
		Power (W)																				222	249	277	304	331	358	385	413	
1,100		RPM																				847	900	950	1,010	1,057	1,110	1,160	1,204	
		Power (W)																				253	280	307	333	359	386	412	439	

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

Blower Performance SMT36

Models:
SM
006-036

Blower Motor	Blower Motor Details		External Static Pressure (in. wg)							
			0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
CTEC	Speed Tap		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
	1	RPM	830	860	890	930	970	1,020		
		Power (W)	193	201	211	221	231	239		
		CFM	1,080	1,050	1,020	980	950	910		
	2	RPM	920	950	970	1,010	1,060	1,090	1,140	1,170
		Power (W)	265	273	282	294	305	316	326	335
		CFM	1,220	1,190	1,150	1,130	1,100	1,060	1,030	1,000
	3	RPM	1,020	1,040	1,070	1,110	1,140	1,180	1,220	1,250
		Power (W)	361	369	377	387	401	414	426	428
		CFM	1,370	1,340	1,310	1,290	1,260	1,230	1,200	1,160
	4	RPM	940	970	1,010	1,050	1,070	1,150		
		Power (W)	315	322	332	341	351	430		
		CFM	1,240	1,230	1,200	1,170	1,140	1,200		
	5	RPM	Operation Not Recommended							
		Power (W)								
CFM										
CV EC	CFM		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8
	900	RPM	710	760	820	880	950	1,020	1,070	1,130
		Power (W)	132	157	183	208	234	260	285	311
	1,050	RPM	810	860	910	970	1,030	1,090	1,150	1,200
		Power (W)	215	244	272	301	329	358	386	415
	1,200	RPM	910	950	1,000	1,050	1,110	1,160	1,220	1,260
		Power (W)	299	331	362	393	425	456	487	519
	1,350	RPM	1,000	1,050	1,090	1,140	1,190	1,240	1,290	1,330
		Power (W)	458	483	509	534	560	585	611	636

- Blower performance data is based on the lowest nameplate voltage setting.
- Blower performance is based on a wet coil with clean 1-inch filter.
- Blower performance is based on operating conditions of 80°F DB and 67°F WB.
- CFM Tolerance is ±7%.
- RPM/Watt tolerance is ±10%.
- Cells in grey - option not available.

SMS (CV) EC Blower Performance Data

Models:
SM
006-036

Model	Setting	Cooling Mode		Heating Mode		Dehumid Mode		Continuous Fan Only Mode
		Fan Motor Stage 1	Fan Motor Stage 2*	Fan Motor Stage 1	Fan Motor Stage 2*	Fan Motor Stage 1	Fan Motor Stage 2*	
SMS06	Default	250	350	250	350	250	300	250
	Min	250	250	250	250	250	250	250
	Max	400	400	400	400	400	400	400
SMS09	Default	250	350	250	350	250	300	250
	Min	250	250	250	250	250	250	250
	Max	400	400	400	400	400	400	400
SMS12	Default	300	400	300	400	300	350	300
	Min	300	300	300	300	300	300	300
	Max	500	500	500	500	500	500	500
SMS15	Default	500	600	500	600	500	500	500
	Min	500	500	500	500	500	500	500
	Max	700	700	700	700	700	700	700
SMS18	Default	600	700	600	700	600	600	500
	Min	600	600	600	600	500	500	500
	Max	800	800	800	800	800	800	800
SMS24	Default	650	850	650	850	650	650	600
	Min	650	650	650	650	600	600	600
	Max	950	950	950	950	950	950	950
SMS30	Default	850	1,000	900	1,000	850	850	700
	Min	850	850	900	900	800	800	700
	Max	1,100	1,100	1,100	1,100	900	1,100	1,100
SMS36	Default	900	1,200	900	1,250	900	900	900
	Min	900	900	900	900	900	900	900
	Max	1,250	1,250	1,350	1,350	1,250	1,250	1,250

Notes:

All data is calculated with a wet coil and a clean filter.
 All units AHRI/ISO/ASHRAE 13.256-1 rated on CFM shown on performance data page.
 If unit is dual voltage rated, then the airflow is rated at the lowest voltage, i.e. 208V for 208/230V units.
 Shipped on default settings. C=Cooling; H=Heating; D=Dehumidification
 Change from default setting with Service tool (ACDU03C) or AWC Communicating Thermostat.
 Airflow is controlled within 7%, up to the max ESP.
 SMS15-36 ramp default is 30 sec.
 * - Stage 2 (CV) EC motor speed is engaged with a thermostat Y2 call. The SMS Series is only available with single-stage compressors.

SMT Ducted (CV) EC Blower Performance Data

Models:
SM
006-036

Model	Setting	Cooling Mode		Heating Mode		Dehumid Mode		Continuous Fan Only Mode
		Fan Motor Stage 1	Fan Motor Stage 2*	Fan Motor Stage 1	Fan Motor Stage 2*	Fan Motor Stage 1	Fan Motor Stage 2*	
SMT06	Default	250	350	250	350	250	300	250
	Min	250	250	250	250	250	250	250
	Max	400	400	400	400	400	400	400
SMT09	Default	250	350	250	350	250	300	250
	Min	250	250	250	250	250	250	250
	Max	400	400	400	400	400	400	400
SMT12	Default	300	400	300	400	300	350	300
	Min	300	300	300	300	300	300	300
	Max	500	500	500	500	500	500	500
SMT15	Default	500	600	500	600	500	500	500
	Min	500	500	500	500	500	500	500
	Max	700	700	700	700	700	700	700
SMT18	Default	600	700	600	700	600	600	500
	Min	600	600	600	600	500	500	500
	Max	800	800	800	800	800	800	800
SMT24	Default	650	850	650	850	650	650	600
	Min	650	650	650	650	600	600	600
	Max	950	950	950	950	950	950	950
SMT30	Default	850	1,000	900	1,000	850	850	700
	Min	850	850	900	900	800	800	700
	Max	1,100	1,100	1,100	1,100	900	1,100	1,100
SMT36	Default	900	1,200	900	1,250	900	900	900
	Min	900	900	900	900	900	900	900
	Max	1,250	1,250	1,350	1,350	1,250	1,250	1,250

Notes:

All data is calculated with a wet coil and a clean filter.
 All units AHRI/ISO/ASHRAE 13.256-1 rated on CFM shown on performance data page.
 If unit is dual voltage rated, then the airflow is rated at the lowest voltage, i.e. 208V for 208/230V units.
 Shipped on default settings. C=Cooling; H=Heating; D=Dehumidification
 Change from default setting with Service tool (ACDU03C) or AWC Communicating Thermostat.
 Airflow is controlled within 7%, up to the max ESP.
 SMS15-36 ramp default is 30 sec.
 * - Stage 2 (CV) EC motor speed is engaged with a thermostat Y2 call. The SMT Series is only available with single-stage compressors.

Tranquility Non-Ducted SMS Series

SM Series	06	09	12	15	18	24	30	36	
Compressor (1 Each)	Rotary					Scroll			
Factory Charge HFC-410A (oz) [kg]	28 [0.79]*	30 [0.85]*	30 [0.85]*	34 [0.96]*	42 [1.19]*	57 [1.62]*	56 [1.59]*	56 [1.59]	
Chassis Air Coil									
Coax Volume (Gallons) [Liters]	0.26 [.98]		0.36 [1.4]			0.60 [2.3]			
Hose Size (in)	1/2			3/4			1		
Weight									
Chassis - (lbs) [kg]	110 [50]*	110 [50]	117 [53]	123 [56]	125 [57]	186 [84]	190 [86]	192 [87]	
80" Cabinet - (lbs) [kg]	114 [52]			133 [60]			170 [77]		
88" Cabinet - (lbs) [kg]	128 [58]			148 [67]			185 [84]		

Tranquility Ducted SMT Series

SM Series	06	09	12	15	18	24	30	36	
Compressor (1 Each)	Rotary					Scroll			
Factory Charge HFC-410A (oz) [kg]	28 [0.79]*	30 [0.85]*	30 [0.85]*	34 [0.96]*	42 [1.19]*	57 [1.62]*	52 [1.59]*	56 [1.59]*	
Chassis Air Coil									
Return Air Filter Dimensions (h x w) - (in) [mm]	30 x 14 [762 x 356]			30 x 16 [762 x 406]			32 x 20 [813 x 508]		
Coax Volume (Gallons) [Liters]	0.26 [.98]		0.36 [1.4]			0.60 [2.3]			
Hose Size (in)	1/2			3/4			1		
Weight									
Chassis - (lbs) [kg]	110 [50]*	110 [50]	117 [53]	123 [56]	125 [57]	186 [84]	190 [86]	192 [87]	
65" Cabinet - (lbs) [kg]	95 [43]			108 [49]			142 [64]		

SMS Max Working Pressures

Options	Max Pressure PSIG [kPa]
Base Unit	400 [2,757]
Internal Secondary Pump (ISP)	200 [1,378]
Internal Motorized Water Valve (MWV)	300 [2,068]
Internal Modulating Valve	300 [2,068]
Variable Speed Pump	145 [999]

SMT Max Working Pressures

Options	Max Pressure PSIG [kPa]
Base Unit	400 [2,757]
Internal Secondary Pump (ISP)	200 [1,378]
Internal Motorized Water Valve (MWV)	300 [2,068]
Internal Modulating Valve	300 [2,068]
Internal Auto Flow Valve	400 [2,757]
Variable Speed Pump	145 [999]

SMS Electrical Data: (CV) EC Blower Motor

Models:
SM
006-036

(CV) EC Blower Motor (208/230V)

Model	Voltage Code G	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMS06	208/230-60-1	3.8	27	1.5	0.0	5.3	6.2	15
					0.6	5.9	6.9	15
SMS09		5.2	27	1.5	0.0	6.7	8.0	15
					0.6	7.3	8.6	15
SMS12		6.7	27	1.5	0.0	8.2	9.9	15
					0.6	8.8	10.5	15
SMS15		10.6	35	2.6	0.0	13.2	15.9	15
					0.6	13.8	16.5	15
SMS18		13.3	35	2.6	0.0	15.9	19.2	15
					0.6	16.5	19.9	15
SMS24		11.4	64.4	2.6	0.0	14.0	18.6	30
					0.6	14.6	19.2	30
SMS30		12.7	75.6	3.9	0.0	16.6	19.9	30
					0.6	17.2	20.5	30
SMS36	14.4	86	3.9	0.0	18.3	21.5	35	
				0.6	18.9	22.2	35	

(CV) EC Blower Motor (265V)

Model	Voltage Code E	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMS06	265-60-1	2.5	22	1.4	0.0	3.9	4.5	15
					0.6	4.5	5.2	15
SMS09		5.2	27	1.4	0.0	4.9	5.8	15
					0.6	5.5	6.4	15
SMS12		6.7	27	1.4	0.0	6.0	7.2	15
					0.6	6.6	7.8	15
SMS15		10.6	35	2.1	0.0	7.6	9.0	15
					0.6	8.2	9.6	15
SMS18		13.3	35	2.1	0.0	8.6	10.2	15
					0.6	9.2	10.9	15
SMS24		11.4	64.4	2.1	0.0	11.7	14.1	20
					0.6	12.3	14.7	20
SMS30		12.7	75.6	3.2	0.0	14.1	16.8	25
					0.6	14.7	17.5	25
SMS36	14.4	86	3.2	0.0	15.4	18.5	30	
				0.6	16.0	19.1	30	

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SMS Electrical Data: (CT) EC Blower Motor

Models:
SM
006-036

(CT) EC Blower Motor (208/230V)

Model	Voltage Code G	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMS06	208/230-60-1	3.8	27	2.3	0.0	6.1	7.0	15
					0.6	6.7	7.7	15
SMS09		5.2	27	2.3	0.0	7.5	8.8	15
					0.6	8.1	9.4	15
SMS12		6.7	27	2.3	0.0	9.0	10.7	15
					0.6	9.6	11.3	15
SMS15		10.6	35	2.5	0.0	13.1	15.8	15
					0.6	13.7	16.4	15
SMS18		13.3	35	2.5	0.0	15.8	19.1	15
					0.6	16.4	19.8	15
SMS24		11.4	64.4	4.3	0.0	15.7	20.3	30
					0.6	16.3	20.9	30
SMS30	12.7	75.6	4.3	0.0	17.0	20.3	30	
				0.6	17.6	20.9	30	
SMS36	14.4	86	6.1	0.0	20.5	23.7	35	
				0.6	21.1	24.4	35	

(CT) EC Blower Motor (265V)

Model	Voltage Code E	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMS06	265-60-1	2.5	22	2.3	0.0	4.8	5.4	15
					0.6	5.4	6.1	15
SMS09		5.2	27	2.3	0.0	7.5	8.8	15
					0.6	8.1	9.4	15
SMS12		6.7	27	2.3	0.0	9.0	10.7	15
					0.6	9.6	11.3	15
SMS15		10.6	35	2.5	0.0	13.1	15.8	15
					0.6	13.7	16.4	15
SMS18		13.3	35	2.5	0.0	15.8	19.1	15
					0.6	16.4	19.8	15
SMS24		11.4	64.4	4.3	0.0	13.9	16.3	25
					0.6	14.5	16.9	25
SMS30	12.7	75.6	4.3	0.0	15.2	17.9	25	
				0.6	15.8	18.6	25	
SMS36	14.4	86	6.1	0.0	18.3	21.4	30	
				0.6	18.9	22.0	30	

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SMT Electrical Data: (CV) EC Blower Motor

Models:
SM
006-036

(CV) EC Blower Motor (208/230V)

Model	Voltage Code G	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMT06	208/230-60-1	3.8	27	1.5	0.0	5.3	6.2	15
					0.6	5.9	6.9	15
SMT09		5.2	27	1.5	0.0	6.7	8.0	15
					0.6	7.3	8.6	15
SMT12		6.7	27	1.5	0.0	8.2	9.9	15
					0.6	8.8	10.5	15
SMT15		10.6	35	2.6	0.0	13.2	15.9	15
					0.6	13.8	16.5	15
SMT18		13.3	35	2.6	0.0	15.9	19.2	15
					0.6	16.5	19.9	15
SMT24		11.4	64.4	2.6	0.0	14.0	20.3	30
					0.6	14.6	20.9	30
SMT30	12.7	75.6	3.9	0.0	16.6	20.3	30	
				0.6	17.2	20.9	30	
SMT36	14.4	86	4.7	0.0	19.1	23.7	35	
				0.6	19.7	24.4	35	

(CV) EC Blower Motor (265V)

Model	Voltage Code E	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMT06	265-60-1	2.5	22	1.4	0.0	5.2	6.1	15
					0.6	5.8	6.8	15
SMT09		5.2	27	1.4	0.0	6.6	7.9	15
					0.6	7.2	8.5	15
SMT12		6.7	27	1.4	0.0	8.1	9.8	15
					0.6	8.7	10.4	15
SMT15		10.6	35	2.1	0.0	12.7	15.4	15
					0.6	13.3	16.0	15
SMT18		13.3	35	2.1	0.0	15.4	18.7	15
					0.6	16.0	19.4	15
SMT24		9.6	54	2.1	0.0	13.5	20.3	20
					0.6	14.1	20.9	20
SMT30	10.9	60	3.2	0.0	15.9	20.3	25	
				0.6	16.5	20.9	25	
SMT36	12.2	72	4.7	0.0	19.1	23.7	30	
				0.6	19.7	24.4	30	

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SMT Electrical Data: (CT) EC Blower Motor

Models:
SM
006-036

(CT) EC Blower Motor (208/230V)

Model	Voltage Code G	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMT06	208/230-60-1	3.8	27	2.3	0.0	5.3	6.2	15
					0.6	5.9	6.9	15
SMT09		5.2	27	2.3	0.0	6.0	6.9	15
					0.6	6.6	7.6	15
SMT12		6.7	27	2.3	0.0	6.9	8.1	15
					0.6	7.6	8.7	15
SMT15		10.6	35	2.5	0.0	8.1	9.5	15
					0.6	8.7	10.1	15
SMT18		13.3	35	2.5	0.0	9.1	10.8	15
					0.6	9.7	11.4	15
SMT24		11.4	64.4	4.3	0.0	17.1	20.3	30
					0.6	17.7	20.9	30
SMT30		12.7	75.6	4.3	0.0	17.1	20.3	30
					0.6	17.7	20.9	30
SMT36	14.4	86	6.1	0.0	20.2	23.7	35	
				0.6	20.8	24.4	35	

(CT) EC Blower Motor (265V)

Model	Voltage Code E	Compressor		Blower Motor	Pump Option	Total Unit FLA	Min Circuit Amps	Max Fuse Amps
		RLA	LRA	FLA	FLA			
SMT06	265-60-1	2.5	22	2.3	0.0	4.8	5.4	15
					0.6	5.4	6.1	15
SMT09		5.2	27	2.3	0.0	5.8	6.7	15
					0.6	6.4	7.3	15
SMT12		6.7	27	2.3	0.0	6.2	7.1	15
					0.6	6.8	7.8	15
SMT15		10.6	35	2.5	0.0	7.5	8.8	15
					0.6	8.1	9.4	15
SMT18		13.3	35	2.5	0.0	8.1	9.5	15
					0.6	8.7	10.1	15
SMT24		9.6	54	4.3	0.0	13.9	16.3	25
					0.6	14.5	16.9	25
SMT30		10.9	60	4.3	0.0	15.2	17.9	25
					0.6	15.8	18.6	25
SMT36	12.2	72	6.1	0.0	18.3	21.4	30	
				0.6	18.9	22.0	30	

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MAJOR COMPONENTS

1. SM Cabinet (Furred-in)

- A – Floating condensate drain pan
- B – Drain P trap
- C – Supply air plenum
- D – Optional surface mount thermostat 2 x 4 box horizontal
- E – Optional disconnect/breaker location
- F – Upper control box (high voltage terminal blocks optional MPC)
- G – Blower assembly/motor
- H – Risers (not shown)
- I – Shutoffs (not shown)
- J – Filter panel
- K – Filter

- C – Lower control box (transformer, CXM2/DXM2.5, contactor)
- D – Capacitor
- E – High and low voltage locking quick connectors
- F – Air coil
- G – Service Connection

3. Architectural Acoustic Return Air Panel (G)

- A – Frame
- B – Hinged inner panel

4. Hoses (Not Shown)

5. Supply Air Grille (Not Shown)

6. Thermostat (Not Shown)

2. SM Chassis

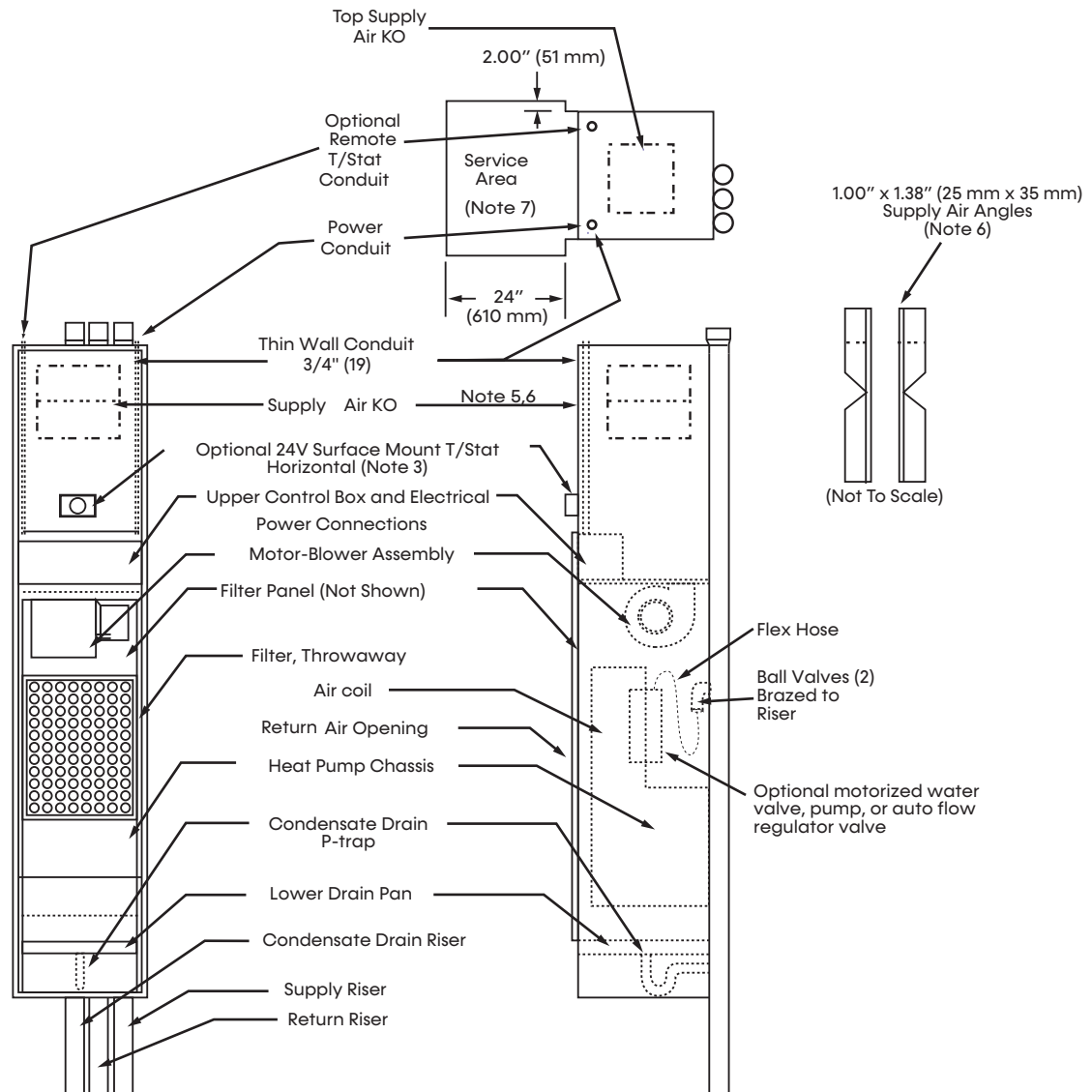
- A – Compressor with acoustic enclosure, water coil, reversing valve
- B – Data plate

NOTE: Matching labels for visual aid, chassis and cabinet same size and voltage



SMS: Standard Unit, Furred in Cabinet with Risers

Models:
SM
006-036

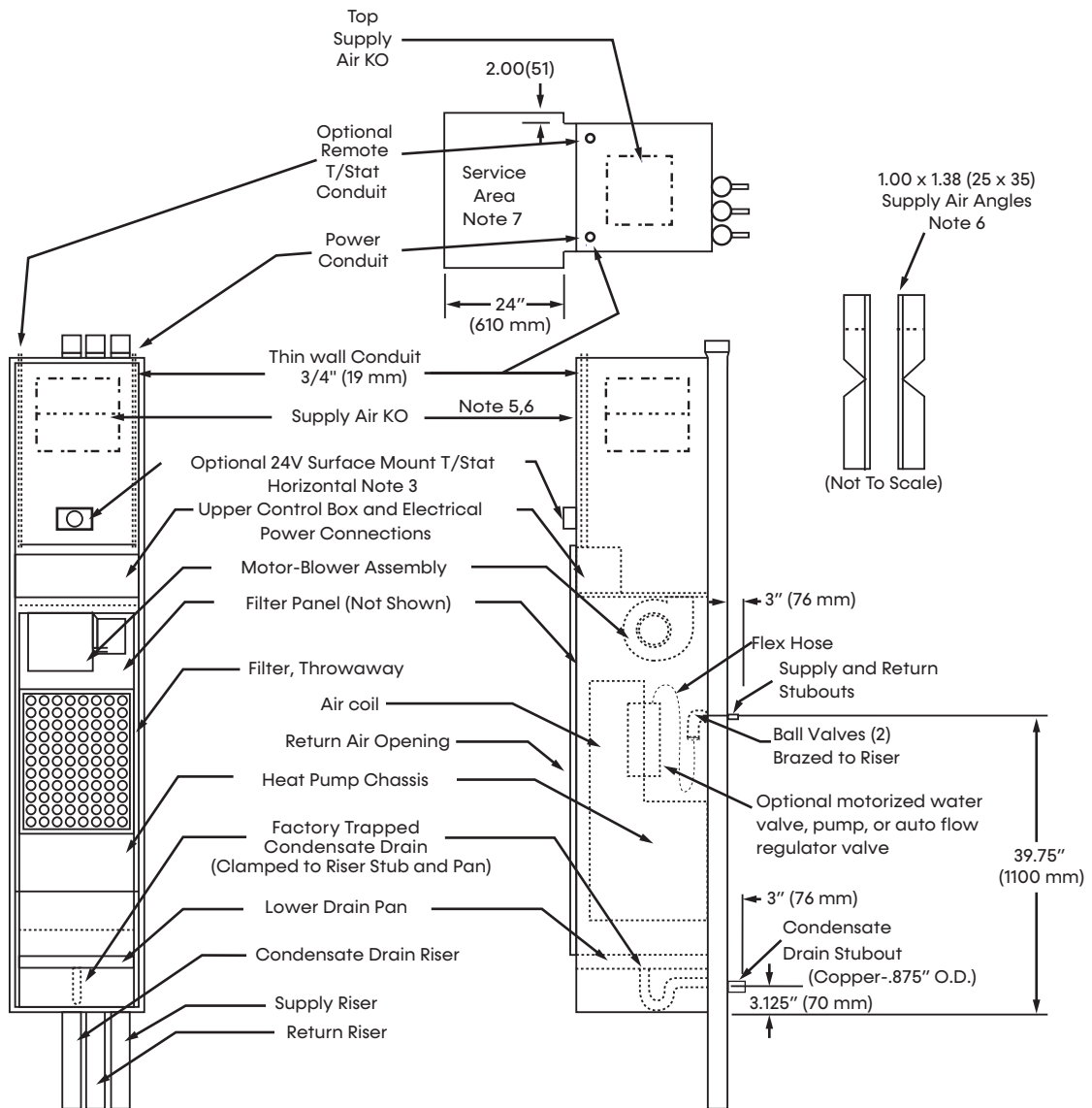


Notes:

1. All dimensions are in inches (mm).
2. The return air/control box side is defined as front of cabinet. Supply air KOs and riser KOs are on all panels. Supply air grilles can be on any side except riser side.
3. Units with 24V surface mount T/stat option have 2 x 4 box factory installed in horizontal position. Contractor must turn box before dry walling if customer is using vertical thermostat type.
4. Cabinet shown is Style 3, risers back right.
5. Supply air KOs can be configured in the field or factory.
6. If supply air is field-configured, the angles are shipped loose. Quality of angles depends on your selection of cabinet digits 11 and 12. Break off if needed. Position inside and attach with screws.
7. Service area from finished wall, and 4-inches (102-mm) wider than cabinet.

SMS: Leader Unit, Furred in Cabinet

Models:
SM
006-036

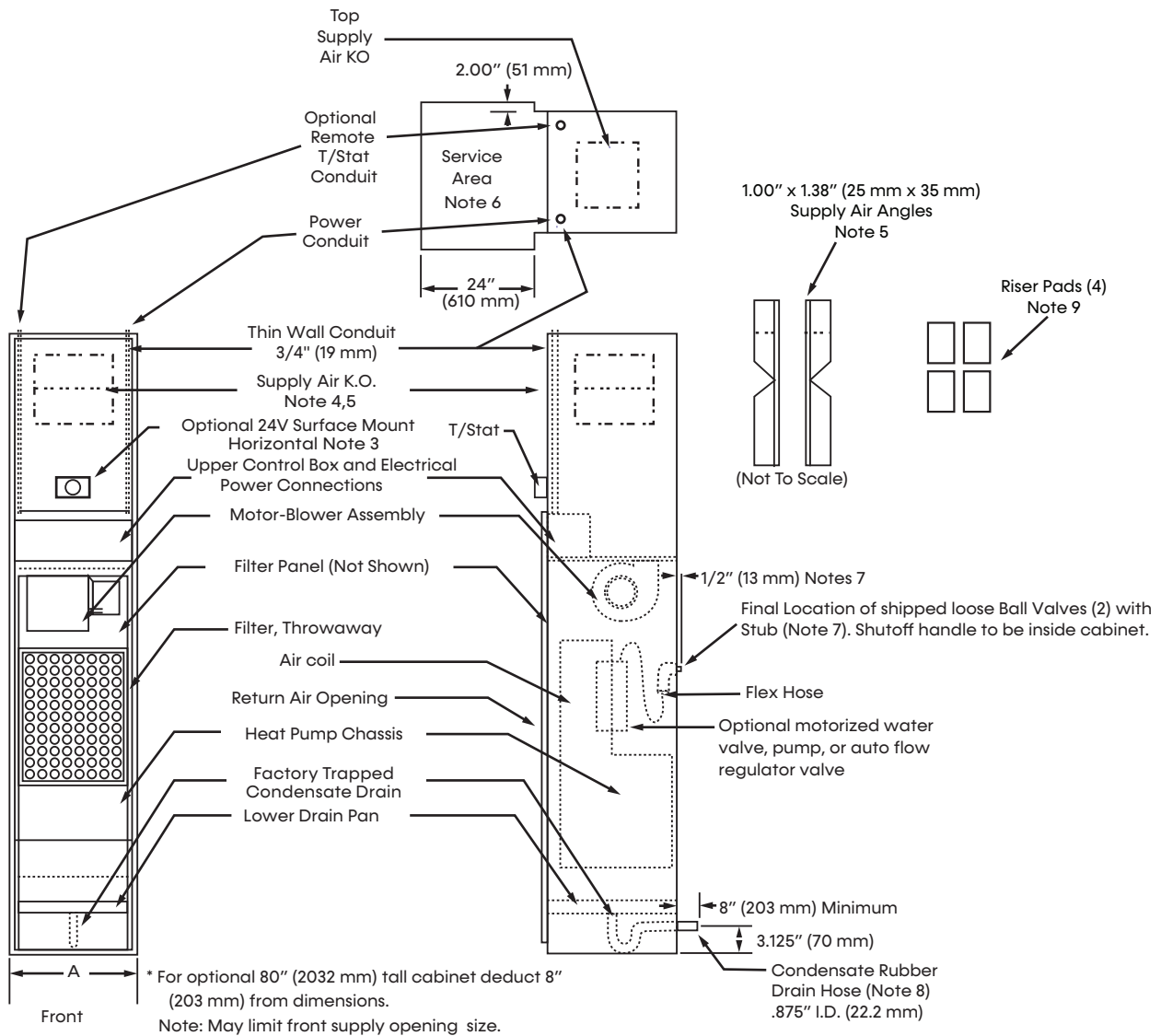


Notes:

1. All dimensions are in inches (mm).
2. The return air/control box side is defined as front of cabinet. Supply air KO's and riser KO's are on all panels. Supply air grilles can be on any side except riser side.
3. Units with 24V surface mount T/stat option have 2 x 4 box factory installed in horizontal position. Contractor must turn box before dry walling if customer is using vertical thermostat type.
4. Cabinet shown is Style 3, risers back right.
5. Supply air KO's can be configured in field or in factory.
6. If supply air is field configured the angles are shipped loose. Quality of angles depends on your selection of cabinet digits 11 and 12. Break off if needed. Position inside and attach with screws.
7. Service area from finished wall, and 4-inches (102-mm) wider than cabinet.
8. Installer must provide crossover water piping from riser to follower unit. Piping must have same pressure rating or higher as riser.

SMS: Follower Unit, Furred in Cabinet, No Risers

Models:
SM
006-036

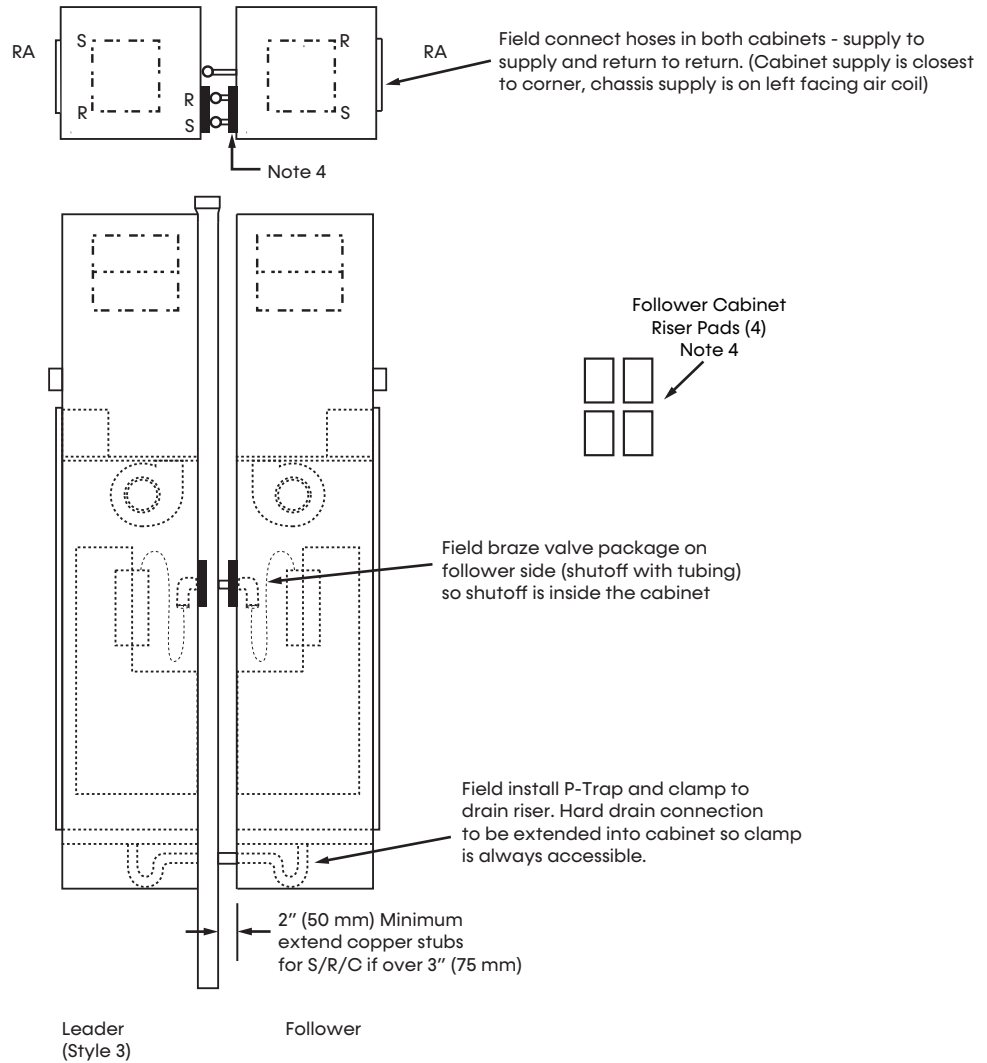


Notes:

- All dimensions are in inches (mm).
- The return air/control box side is defined as front of cabinet. Supply air KO's and riser KO's are on all panels. Supply air grilles can be on any side except riser side.
- Units with 24V surface mount T/stat option have 2 x 4 box factory installed in horizontal position. Contractor must turn box before dry walling if customer is using vertical thermostat type.
- Supply air K.O.'s can be configured in field or in factory.
- If supply air is field configured the angles are shipped loose. Quality of angles depends on your selection of cabinet digits 11 and 12. Break off if needed. Position inside and attach with screws.
- Service area from finished wall, and 4-inches (102-mm) wider than cabinet.
- Ball valve package is shipped loose in cabinet or shipped in bulk as special. Field must position in cabinet copper protruding 1/2 inch out of cabinet and connect to leader riser stub outs, extend copper if needed.
- Rubber drain hose ships connected to the lower (cabinet) drain pan and must be cut to length and connected to the drain riser in the field. Recommend running hard tubing inside and clamping

Leader/Follower Cabinet

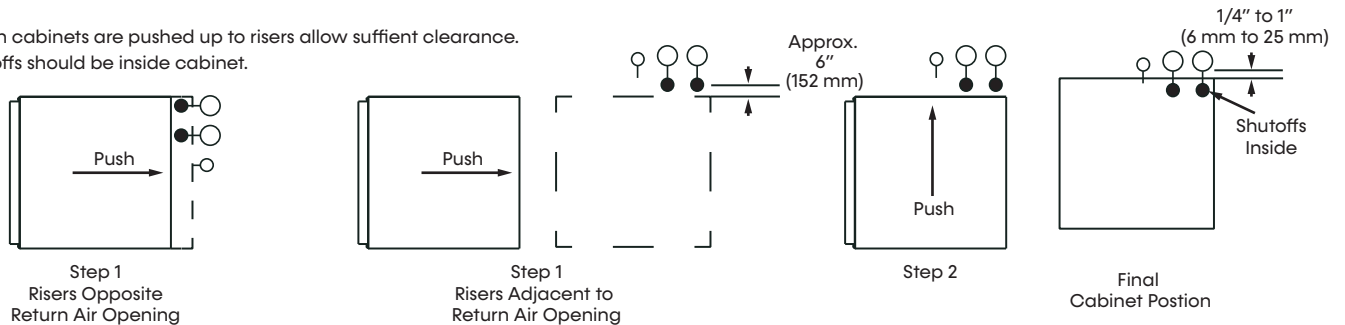
Models:
SM
006-036



Notes:

1. Contractor must meet all building and fire code requirements.
2. Size riser diameter for both units GPM.
3. Leader/Follower means both units share common riser.
4. Install pads on back of follower cabinet to cover slots used for S/R risers.

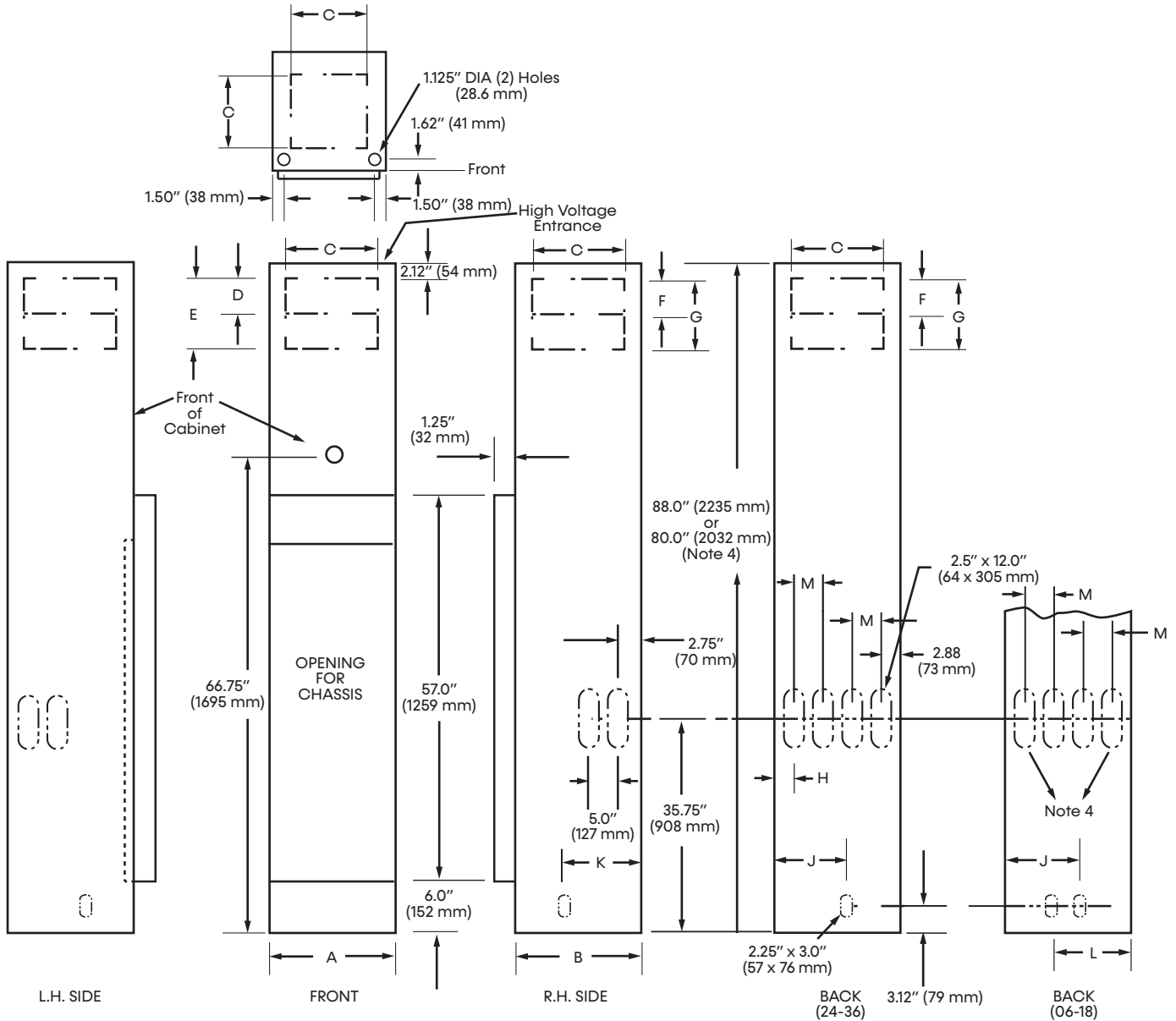
When cabinets are pushed up to risers allow sufficient clearance. Shutoffs should be inside cabinet.



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SMS Cabinet Dimensions

Models:
SM
006-036



Notes:

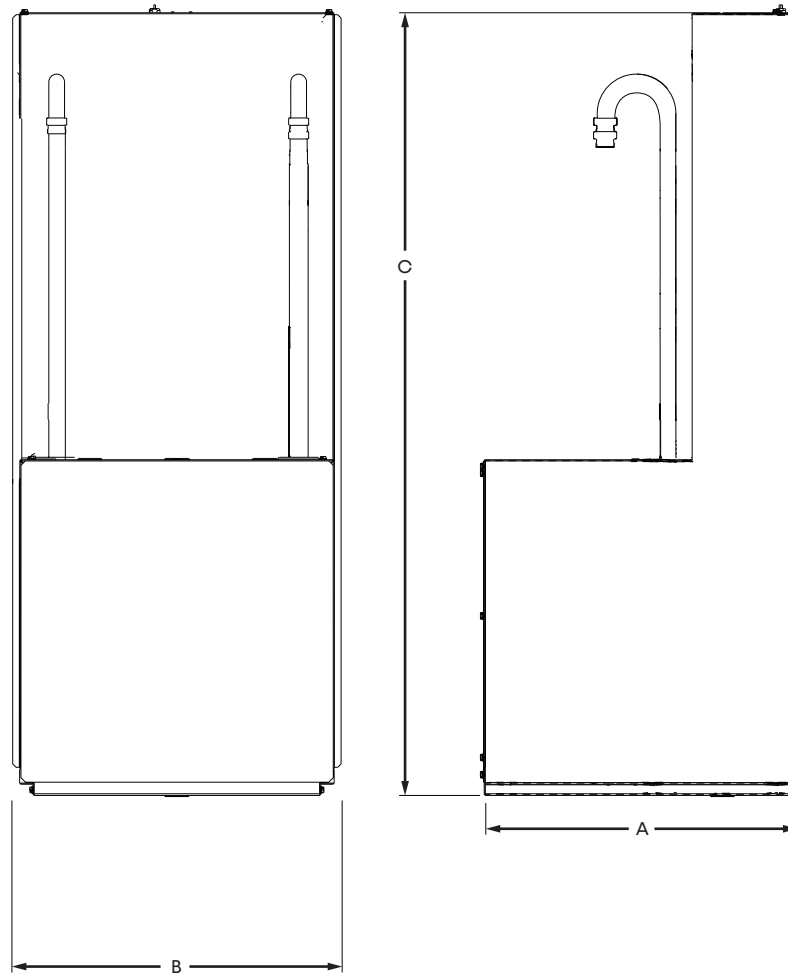
1. All dimensions are in inches (mm).
2. Cabinets have supply air and riser K.O.s, all panels. Remove only K.O.s necessary to configure cabinet. Seal any K.O.s removed by mistake.
3. Service area to be width of cabinet plus 4-inches (102 mm) and 24-inches (610 mm) from finished wall.
4. For 06-18 cabinet use drain diagonally across from supply and return risers.

Size	A	B	C	88" Cabinet		80" Cabinet		H	J	K	L	M
				D/F	E/G	D/F	G					
06-12	17.00	17.00	12.00	6.00	12.00	6.00	12.00	1.71	11.34	11.93	11.34	4.63
	[432]	[432]	[305]	[152]	[305]	[152]	[305]	[44]	[288]	[303]	[288]	[117]
15-18	19.25	19.00	14.00	6.00	14.00	6.00	12.00	2.83	12.08	11.93	12.08	4.63
	[489]	[483]	[356]	[152]	[356]	[152]	[305]	[72]	[307]	[303]	[307]	[117]
24-36	24.25	24.00	16.00	8.00	16.00	6.00	12.00	2.83	12.08	11.98	N/A	5.00
	[616]	[610]	[406]	[203]	[406]	[152]	[305]	[72]	[307]	[304]		[127]

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SMS/SMT Chassis Dimensions

Models:
SM
006-036

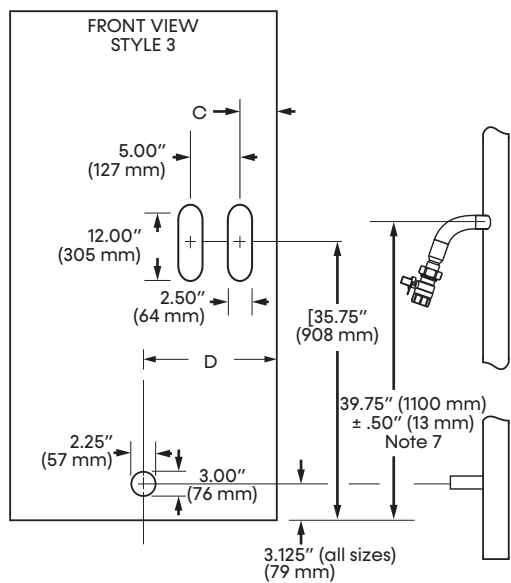
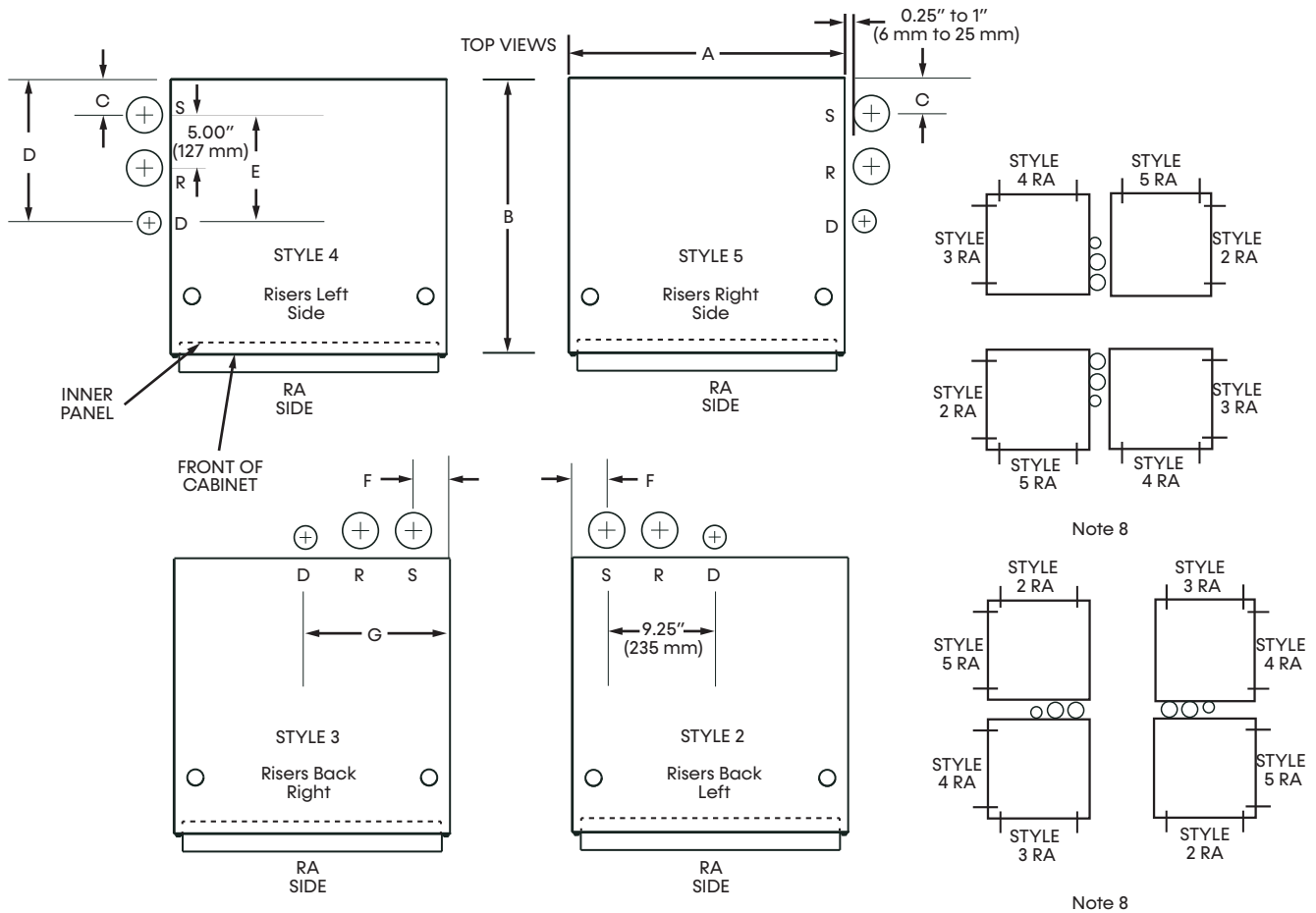


Size	A	B	C
06-12	15.63	15.38	43.48
15-18	17.00	17.63	43.48
24-36	22.00	22.63	45.48

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Ducted Cabinet Slot Dimensions and Riser Arrangements

Models:
SM
006-036



NOTICE

Not all styles will stack above or adjacent to each other. (See Note 8).

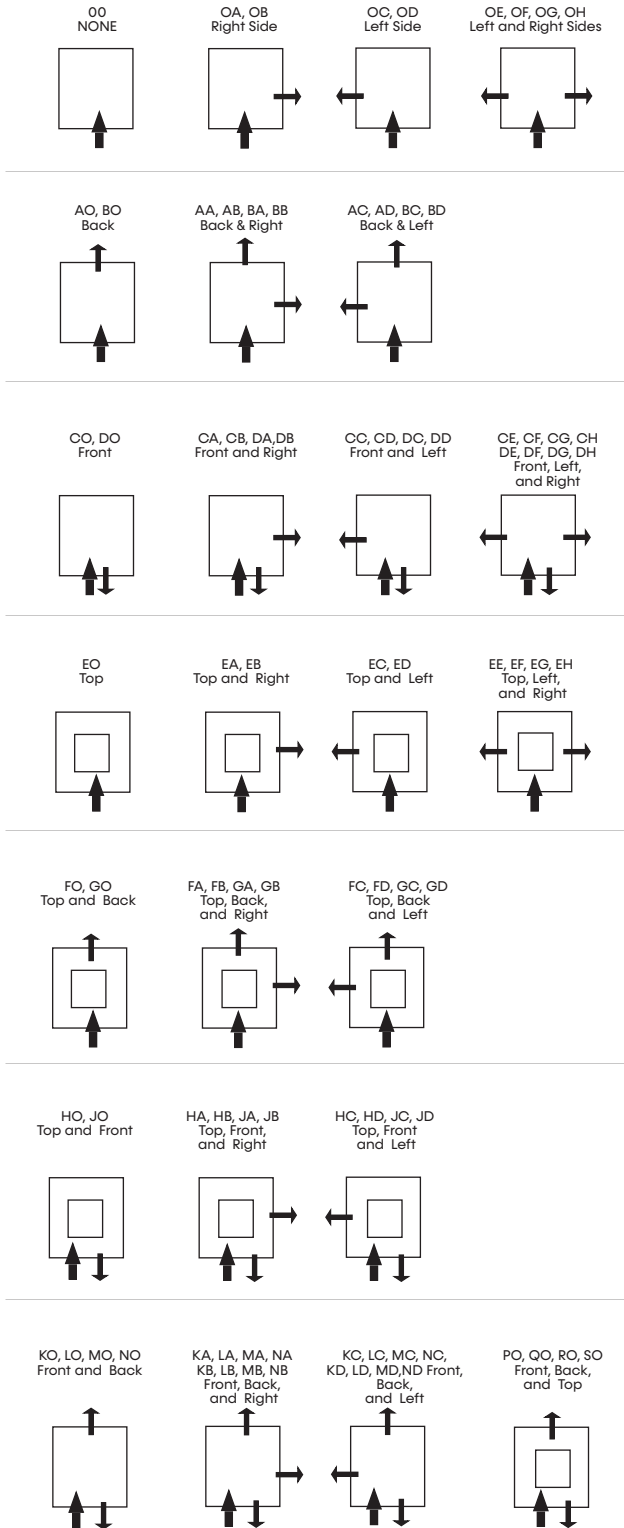
- Notes:
- Dimensions shown are in inches and either mm or cm unless noted otherwise.
 - Style refers to the riser location (digit 9 in Model Nomenclature).
 - Return air side is the front of the cabinet.
 - Supply riser is closest to corner.
 - Drain is not centered on all cabinet sizes.
 - Slots allow for riser stack expansion and contraction.
 - Supply and return riser stub outs are 39 3/4" (1100 mm) from bottom of cabinet and is not centered vertically in slot.
 - Drain Run-out is 3.12" (79 mm) from bottom of cabinet.
 - From floor-to-floor on one riser stack, you can only have; all same style, styles 2 and 5; or styles 3 and 4. For leader/follower units, you can only have styles 3 or 4 adjacent to 2 or 5.
 - Secure riser stack to building structure.
 - Riser should not touch cabinet and shutoff should be inside cabinet.

Size	A	B	C	D	E	F	G
06-12	17.00 [432]	17.00 [432]	2.75 [70]	11.93 [303]	9.18 [233]	1.71 [44]	11.34 [288]
15-18	19.25 [489]	19.00 [483]	2.75 [70]	11.93 [303]	9.18 [233]	2.83 [72]	12.08 [307]
24-36	24.25 [616]	24.00 [610]	2.73 [69]	11.98 [304]	9.25 [235]	2.83 [72]	12.08 [307]

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SMS Cabinet Configurations

Models:
SM
006-036



Back/Front/Top Discharge Options – Digit 11

Option	Discharge	Unit Size 06-12 Top	Unit Size 15-18 Top	Unit Size 24-36 Top	C-Series 80" SM	C-Series 88" SM		
0	None	N/A	N/A	N/A	Yes	Yes		
A	Back Small							
B	Back Large							
C	Front Small							
D	Front Large	12 x 12	14 x 14	16 x 16	No			
E	Top							
F	Back Small and Top							
G	Back Large and Top							
H	Front Small and Top	12 x 12	14 x 14	16 x 16	Yes			
J	Front Large and Top							
K	Back Small and Front Small				N/A	N/A	N/A	No
L	Back Large and Front Large							
M	Back Small and Front Large							
N	Back Large and Front Small							
P	Back Small and Front Small w/Top	12 x 12	14 x 14	16 x 16	Yes			
Q	Back Large and Front Large w/Top							
R	Back Small and Front Large w/Top							
S	Back Large and Front Small w/Top							

Side Discharge Options – Digit 12

Option	Discharge
0	None
A	Right Small
B	Right Large
C	Left Small
D	Left Large
E	Right Small & Left Small
F	Right Large & Left Large
G	Right Small & Left Large
H	Right Large & Left Small

Discharge K.O. By Unit Size 88"

T Size	Top	Back, Front & Side
06-12	12" x 12"	12" x 6" & 12" x 12"
15-18	14" x 14"	14" x 6" & 14" x 14"
24-36	16" x 16"	16" x 8" & 16" x 16"

Discharge K.O. By Unit Size 80"

T Size	Top	Front	Back & Side
06-12	12" x 12"	12" x 6"	12" x 6" & 12" x 12"
15-18	14" x 14"	14" x 6"	14" x 6" & 14" x 12"
24-36	16" x 16"	16" x 6"	16" x 6" & 16" x 12"

Notes:

- Front is return air side and control box location.
- Risers can be on any side without return or supply air openings.
- All sides and top have K.O.s.
- 80-inch cabinet cannot have front-large discharge.



↓ = RETURN AIR (AIR ENTERING CABINET)

↑ = SUPPLY AIR (AIR LEAVING CABINET)

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MAJOR COMPONENTS

1. SM Cabinet (Furred-in)

- A - Floating condensate drain pan
- B - Drain P trap
- C - Optional disconnect/breaker location
- D - Upper control box (high voltage terminal blocks optional MPC)
- E - Blower assembly/motor
- F - Risers (not shown)
- G - Shutoffs (not shown)
- H - Filter panel
- I - Filter

- C - Lower control box (transformer, CXM2/DXM2.5, contactor)
- D - Capacitor
- E - High and low voltage locking quick connectors
- F - Air coil
- G - Service Connection

3. Architectural Acoustic Return Air Panel (G)

- A - Frame
- B - Hinged inner panel

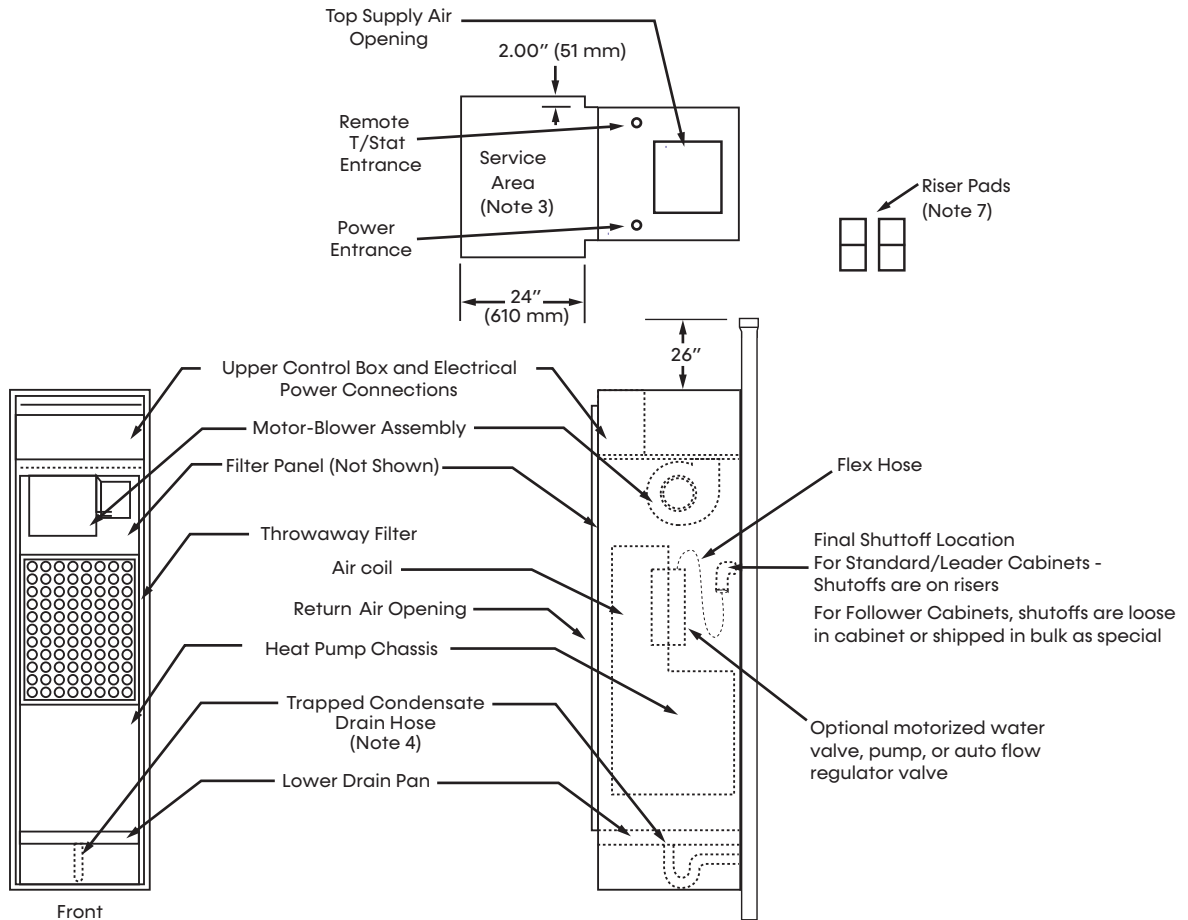
4. Hoses (Not Shown)

5. Supply Air Grille (Not Shown)

6. Thermostat (Not Shown)

NOTE: Matching labels for visual aid, chassis and cabinet same size and voltage





Notes:

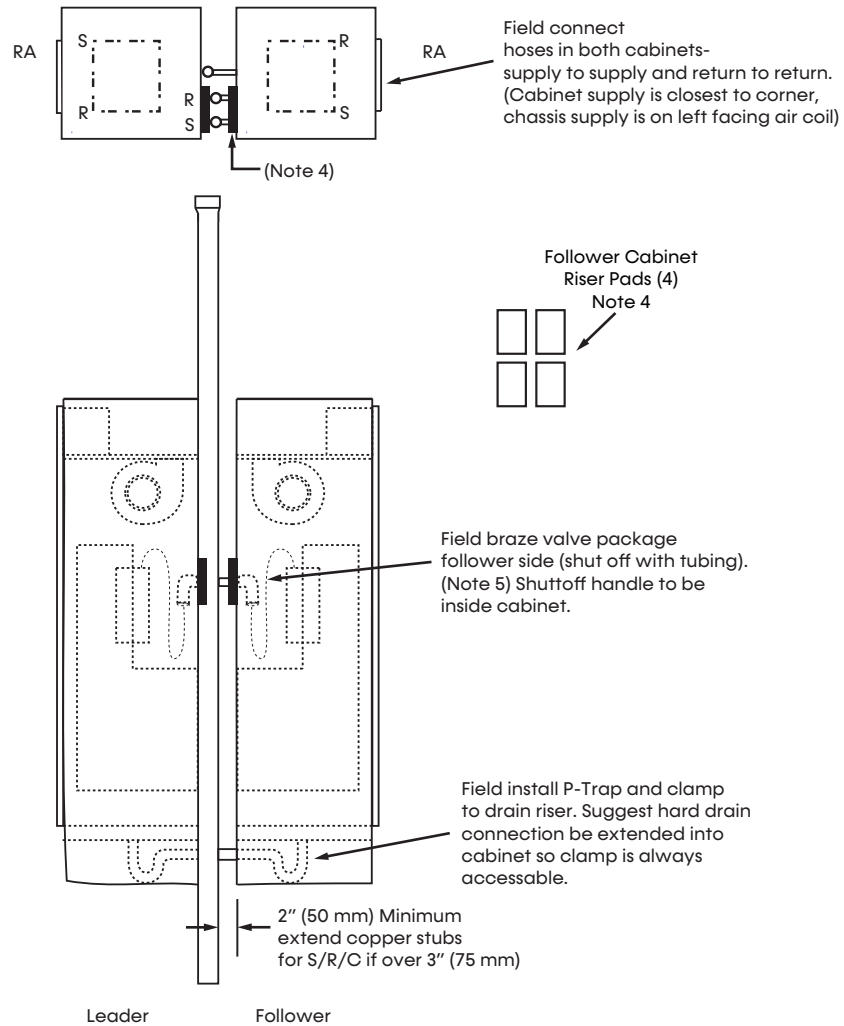
1. All dimensions are in inches (mm).
2. The return air/control box side is defined as front of cabinet. Riser KOs are on all panels.
3. Service area from finished wall and 4" wider than cabinet.
4. Contractor to supply ductwork, see blower table for maximum static.
5. Installer must apply riser pads to outside of cabinet to seal supply and return slots.

NOTICE

Design all ductwork in accordance with SMACNA guidelines.

SMT: Leader/Follower Cabinet

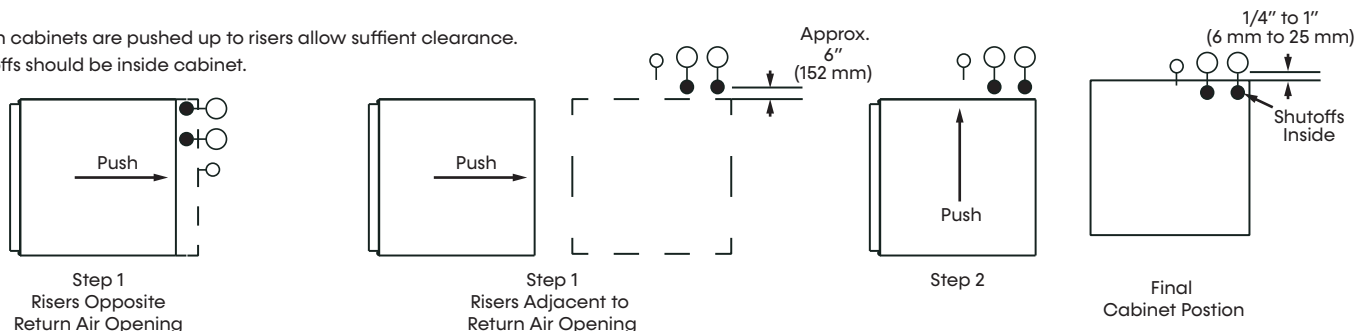
Models:
SM
006-036



Notes:

1. Contractor must meet all fire and building code requirements.
2. Size riser diameter for both units GPM.
3. Leader/Follower means both units share common riser.
4. Install pads on back of follower cabinet to cover slots used for S/R risers.
5. Installer must provide crossover water piping from riser to follower unit.
6. Piping must have same pressure rating or higher as riser.
7. All dimensions are in inches (mm).

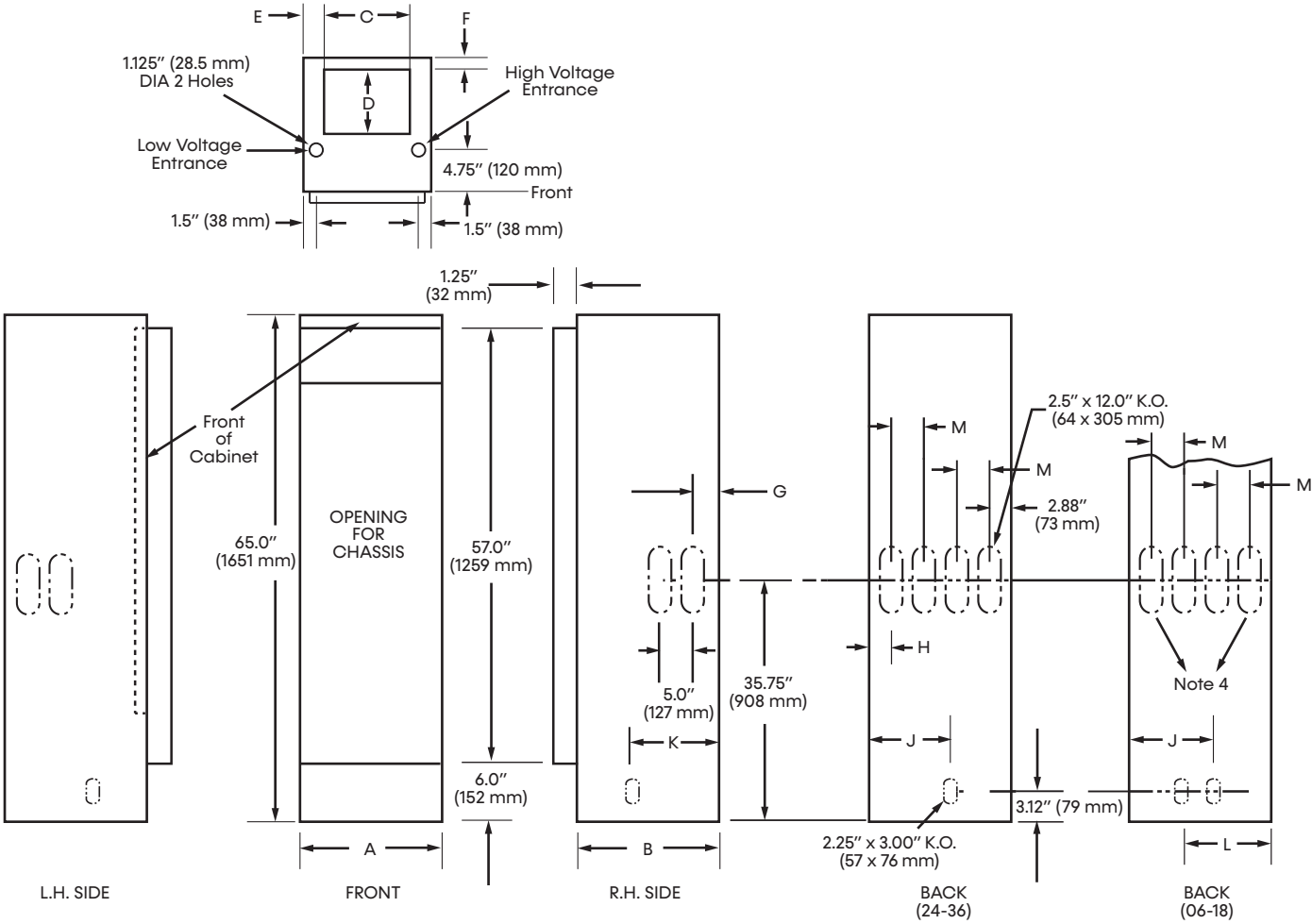
When cabinets are pushed up to risers allow sufficient clearance. Shutoffs should be inside cabinet.



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SMT Cabinet Dimensions

Models:
SM
006-036



Notes:

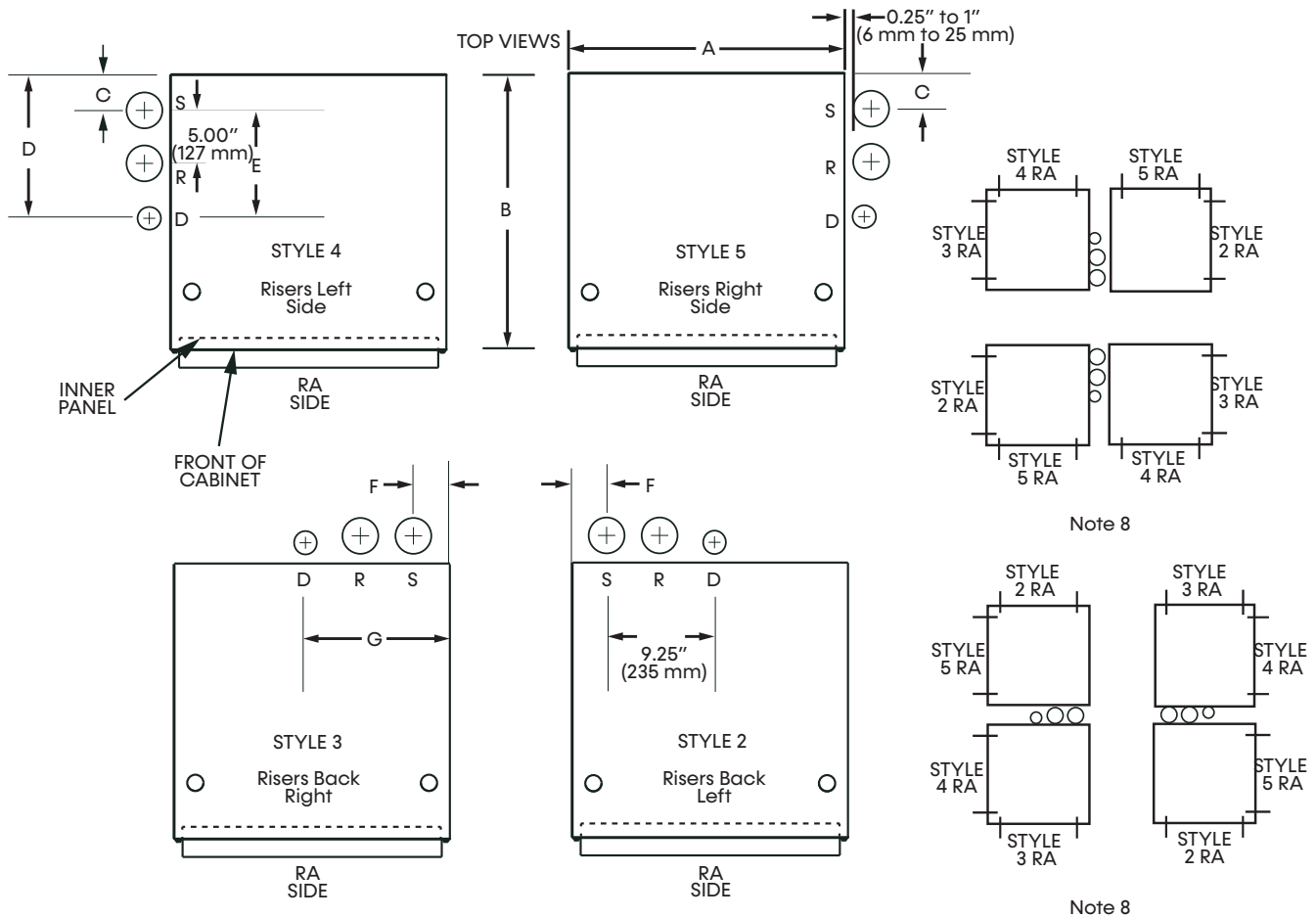
1. Dimensions shown are in inches and either mm or cm unless noted otherwise.
2. Style refers to the riser location (digit 9 in Model Nomenclature).
3. Return air side is the front of the cabinet.
4. Supply riser is closest to corner.
5. Drain is not centered on size 06-18 cabinets.
6. Slots allow for riser-stack expansion and contraction.
7. Supply and return riser stub outs are 39.75-inches (1100 mm) from bottom of cabinet and is not centered vertically in slot. Drain Run-out is 3.12-inches (79 mm) from bottom of cabinet.
8. From floor to floor on one riser stack you can only have; all same style, styles 2 and 5; or styles 3 and 4. For leader/follower units you can only have styles 3 or 4 adjacent to 2 or 5.
9. Secure riser stack to building structure.
10. Riser should not touch cabinet and shutoff should be inside cabinet.

Size	A	B	C	D	E	F	G	H	J	K	L	M
06-12	17.00 [432]	17.00 [432]	11.50 [292]	6.00 [152]	2.62 [67]	.665 [17]	2.75 [70]	1.71 [44]	11.34 [288]	11.93 [303]	11.34 [288]	4.63 [117]
15-18	19.25 [489]	19.00 [483]	11.50 [292]	6.00 [152]	3.87 [93]	.665 [17]	2.75 [70]	2.83 [72]	12.08 [307]	11.93 [303]	12.08 [307]	4.63 [117]
24-36	24.25 [616]	24.00 [610]	12.00 [305]	12.00 [305]	6.12 [156]	1.04 [26]	2.73 [69]	2.83 [72]	12.08 [307]	11.98 [304]	N/A	5.00 [127]

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Ducted Cabinet Dimensions and Riser Arrangements

Models:
SM
006-036



NOTICE
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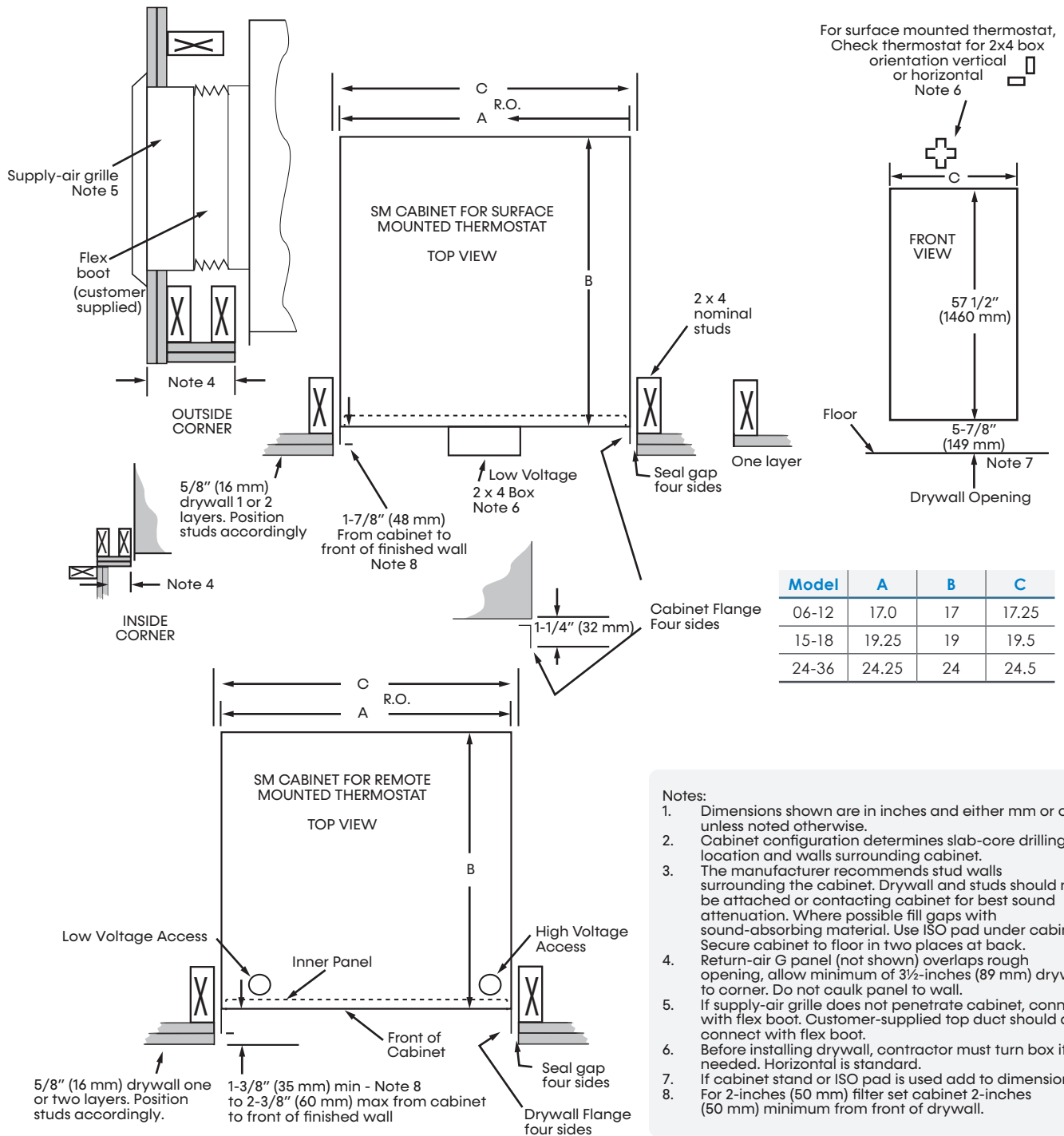
- Notes:**
- Dimensions shown are in inches and either mm or cm unless noted otherwise.
 - Style refers to the riser location (digit 9 in Model Nomenclature).
 - Return air side is the front of the cabinet.
 - Supply riser is closest to corner.
 - Drain is not centered on size 06-18 cabinets.
 - Slots allow for riser stack expansion and contraction.
 - Supply and return riser stub outs are 39³/₄-inches (1100 mm) from bottom of cabinet and is not centered vertically in slot. Drain Run-out is 3.12-inches (79 mm) from bottom of cabinet.
 - From floor to floor on one riser stack you can only have; all same style, styles 2 and 5; or styles 3 and 4. For leader/follower units you can only have styles 3 or 4 adjacent to 2 or 5.
 - Secure riser stack to building structure.
 - Riser should not touch cabinet and shutoff should be inside cabinet.

Size	A	B	C	D	E	F	G
06-12	17.00 [432]	17.00 [432]	2.75 [70]	11.93 [303]	9.18 [233]	1.71 [44]	11.34 [288]
15-18	19.25 [489]	19.00 [483]	2.75 [70]	11.93 [303]	9.18 [233]	2.83 [72]	12.08 [307]
24-36	24.25 [616]	24.00 [610]	2.73 [69]	11.98 [304]	9.25 [235]	2.83 [72]	12.08 [307]

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Typical Cabinet with G Panel Installation

Models:
SM
006-036

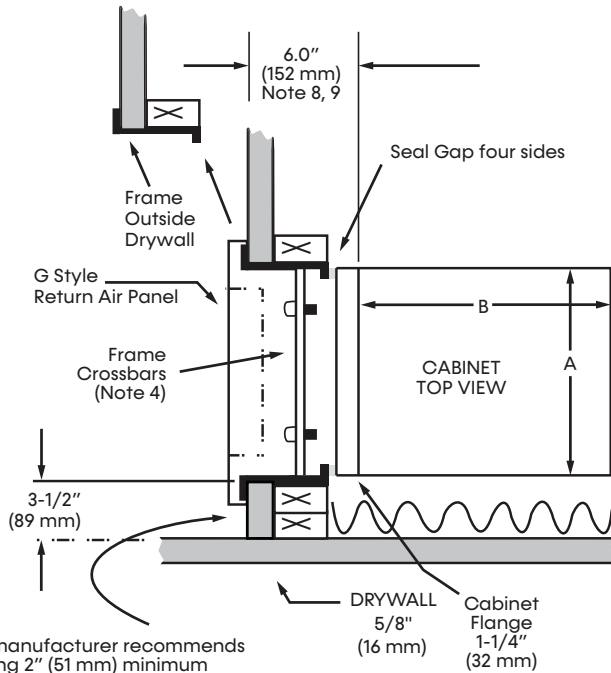


NOTICE

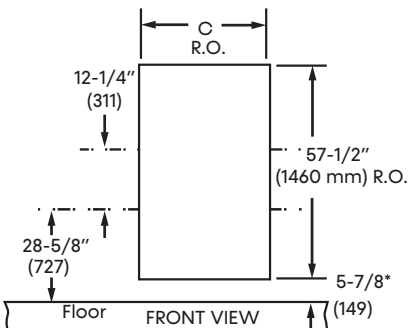
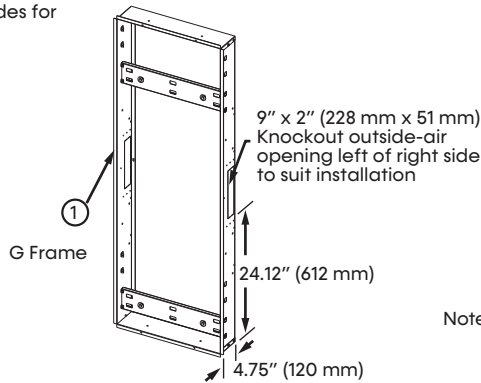
Seal between studs and cabinet flanges with weather tight foam material to prevent wall cavity air from infiltrating unit or room.

Typical Cabinet with G Installation – Recessed

Models:
SM
006-036



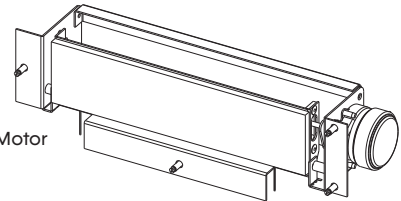
The manufacturer recommends leaving 2" (51 mm) minimum clearance on both sides for removing panel



* Dimension if cabinet is on floor. Add if cabinet is on stand/pad.

NOTICE

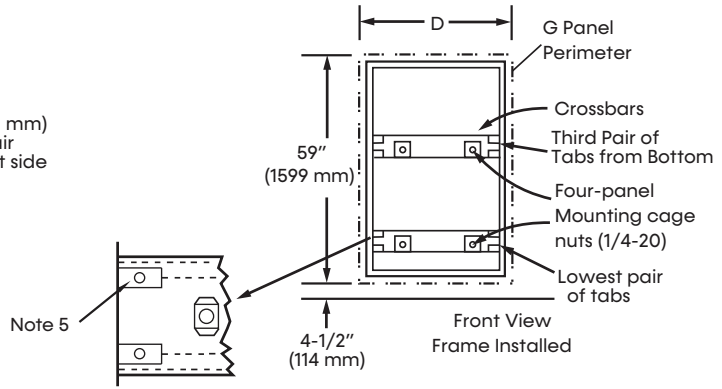
- Recessed cabinet requires a frame kit.
- Outside air applications require a Motorized Damper or pre-treated air that is above 45°F (7°C) and below 95°F (35°C) dry bulb/75°F (24°C) wet bulb.
- Attach the frame to the wall studs, not the cabinet. Use weather seal material between the frame and cabinet to avoid bypass air being pulled in from the wall cavity.
- Do not distort frame. Shim the sides of the frame if required.



Optional Damper Motor

(Order separately)
Refer to the IOM packaged with the motorized damper assembly for installation instructions and note 7 (below) for its usage.

Kit Part	Qty	Description
1	1	Frame
2	2	Cross Bar



Kit	Size	Frame Kit in (mm)			Panel
		A	B	C	
48A0100N50	06-12	17.00 (432)	17.00 (432)	16.63 (400)	18.5 (470)
48A0100N51	15-18	19.25 (489)	19 (483)	19.63 (458)	21.5 (548)
48A0100N52	24-38	24.25 (816)	24 (610)	24.35 (620)	25.5 (648)

Notes:

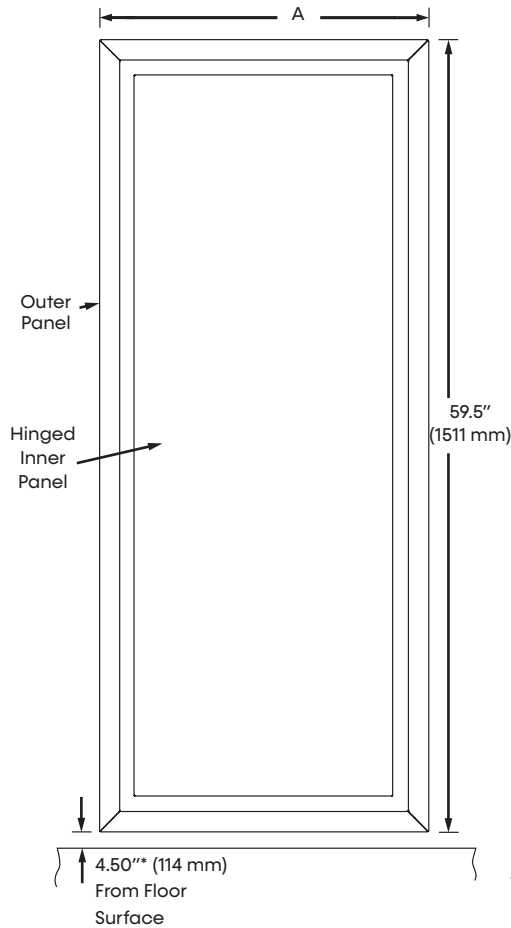
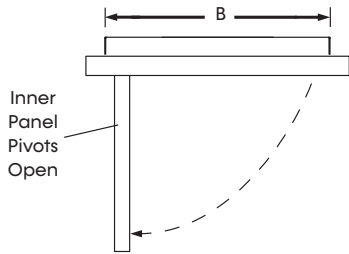
1. The cabinet configuration determines the slab core-drilling location and the wall surrounding the cabinet.
2. Stud walls surrounding the cabinet are recommended. For better sound attenuation, the drywall studs should not be attached to or contacting the cabinet.
3. The G style return air panel overlaps its rough opening. Allow a minimum of 3/2-inches (89 mm) of drywall to a corner. Do not caulk the return air panel to the wall.
4. The G panel attaches to the cross bars of the frame kit. The cabinet must be recessed behind the wall.
5. For air filter access, pivot the hinged inner panel and open the snapped filter access panel.
6. For chassis access:
 - a. Remove the entire G-Panel
 - b. Remove the (2x) cross bars of the frame kit
 - c. Remove the cabinet's filter panel
 - d. Slide out the chassis
7. When untreated outside air will be utilized, the 48A0100N04 motorized damper must be used. The mixed air temperature must be no lower than 45°F (7°C), must be no higher than 95°F (35°C) DB/75°F (35°C) WB, and must not exceed 20% of the cabinet's total CFM output.
8. For a 2-inch filter, set the cabinet 6/4-inches (158 mm) from the front of the dry wall.
9. If the four drywall flanges are removed, the cabinet can be set 1-inch (25 mm) closer to the finished drywall.
10. All dimensions are inches (mm) with all nominal 2 x 4 studs being 1.5-inches (38 mm) x 3.5-inches (89 mm).

Hinged G Style Return Air Panel – AVHSG Series

Models:
SM
006-036

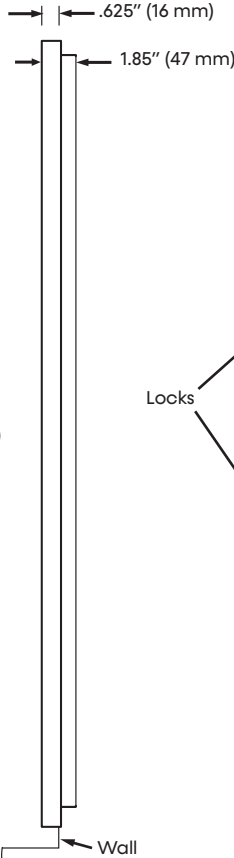
NOTICE

G Panel must be removed for chassis access

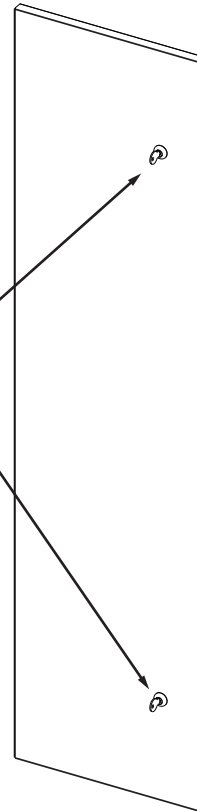


* - Dimension increases if cabinet is on stand or pad

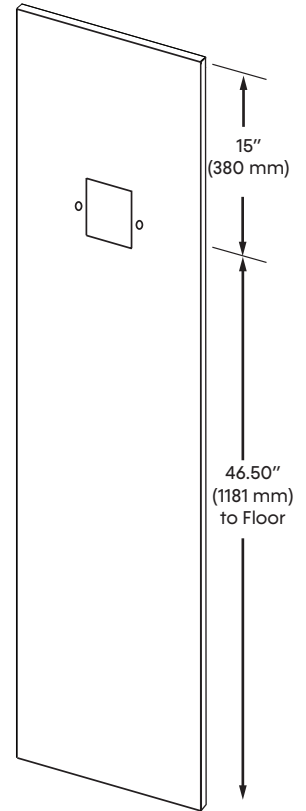
Front View
G Panel



Locks



Optional
Inner Panel
with Keyed Locks



Optional
Inner Panel with holes
to mount ADA
thermostat

THERMOSTAT MOUNTING

TYPE 1	TYPE 2
ATP21W02	AVB32V02C
ATA11U03	ATA32V01
AWC99U01	
ATA11U01	
ABV32V03C	

Unit	AVHSG Digit 6	A	B
06-12	1	19.3 [490]	16.4 [417]
15-18	2	21.6 [549]	18.7 [475]
24 - 36	3	26.5 [673]	23.7 [602]

Notes:

1. Dimensions are in inches (mm).
2. Panel painted polar ice or bright white.
3. Inner panel pivots open 90°, for filter replacement without removing panel.
4. Shipped as left-hand pivot, but can be field converted to right hand. Cannot convert panel with grille or ADA options.
5. Optional locks and/or ADA mounted thermostats available.
6. Optional frame for recessed cabinet applications and damper assembly available. See Recessed Cabinet.
7. Please review the ADA knockout Type 1 and 2 thermostat table to ensure compatibility between the panel and thermostat selected.

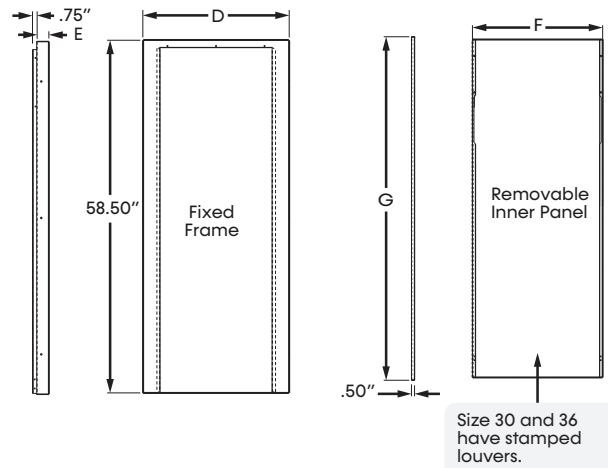
L Style (Flush Mounting) Return Air Panel – AVHRL Series

Models:
SM
006-036

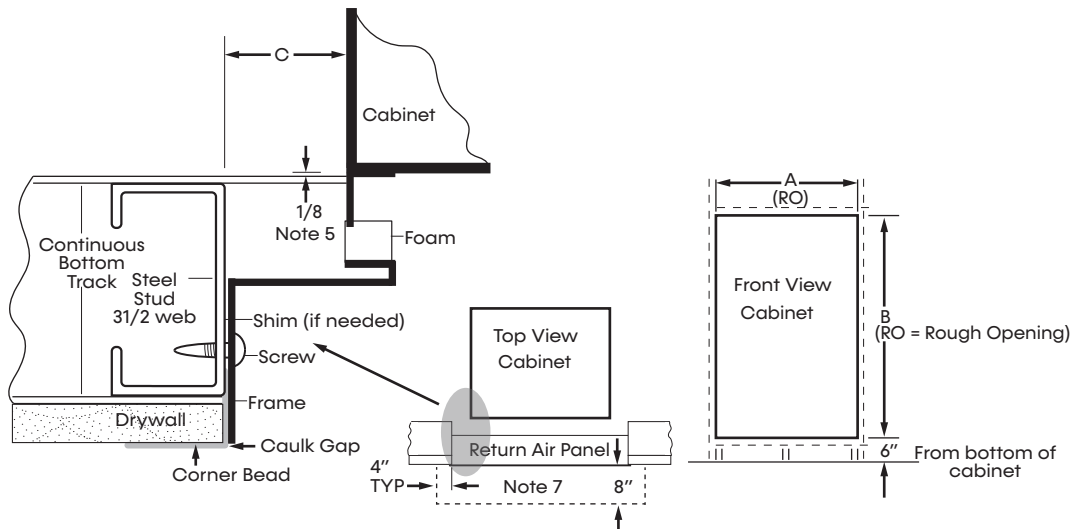
Unit	AVHRL Digit 6	D	E	F	G
06-12	1	22.1	2.0	19.5	55.8
15-18	2	24.1	2.0	21.5	55.8
24	3	29.6	2.0	26.5	55.9
30-36	4	29.6	2.0	26.5	55.9

NOTICE

Frame is attached to studs. Panel is removable for chassis access.



FRAME INSTALLATION



Notes:

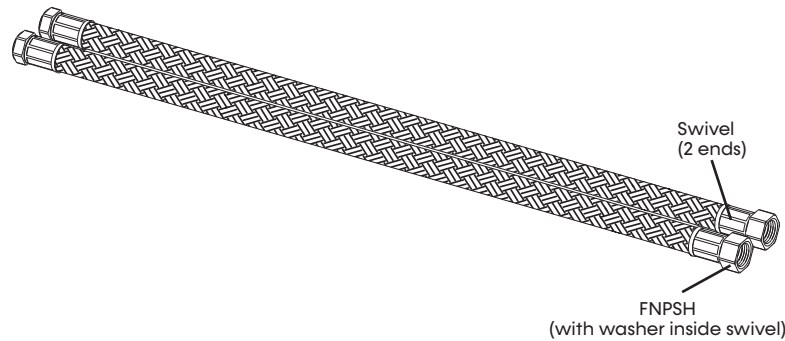
1. Dimensions shown are in inches and either mm or cm unless noted otherwise.
2. Frame and panel painted Bright White or Polar Ice.
3. Panel is removable for filter replacement or chassis removal.
4. Frame ships with cabinet and must be installed while framing.
5. Set bottom track 1/8-inch in front of cabinet.
6. Drywall mud is added to the corner bead to produce a smooth finished surface.
7. Unobstructed area for required air flow.

Unit	A	B	C
06-12	22.3	58.6	2.5
15-18	24.3	58.6	2.5
24-36	29.7	58.6	2.7

AHU SERIES HOSE KIT SPECIFICATIONS:

- AHU hose kits used for connection with ClimateMaster standard ball valves.
- Designed for vertical high rise water-source heat pump applications.
- Kevlar® reinforced EPDM core with ANSI 302/304 stainless-steel outer braid.
- Fire rated materials per ASTM E 84-00 (NFPA 255, ANSI/UL 723 and UBC 8-1).
- Swivel connection provides union between chassis and riser shutoff.
- Brass fittings, stainless steel ferrules.
- Temperature range of 15°F (9°C) to 180°F (82°C). (Operation below 32°F (0°C) requires antifreeze)
- Max. working pressure of 400 psi (2756 kPa).
- Minimum burst pressure of four times working pressure.

AHU Hose Kit



Physical Data

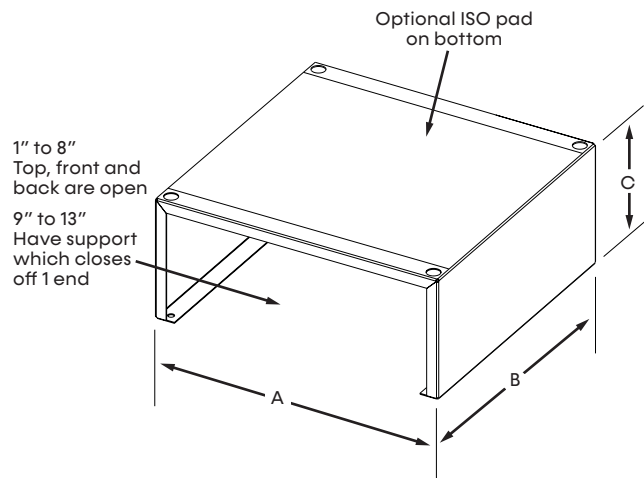
Unit	Inside Diameter inches	Length feet [cm]	Working Pressure psi [kPa]	Min. Burst Pressure psi [kPa]	Min. Bend Radius inches [mm]
06-12	0.50	3 [91]	400 [2,756]	1,600 [11,024]	3.56 [91]
15-18	0.75	3 [91]	400 [2,756]	1,600 [11,024]	3.56 [91]
24-36	1.00	3 [91]	400 [2,756]	1,600 [11,024]	4.3 [109]

ACST CABINET STANDS

Specifications:

- 1-inch to 13-inches (25-mm to 330-mm) tall, 1-inch (25 mm) increments
- 16 Gauge galvanized steel
- Attached to cabinet with four screws
- Ships in bulk for field installation.
- Optional ISO pad 0.1-inch (2.5 mm) thick

Unit	A inch [mm]	B inch [mm]	C inch [mm]
06-12	16.8 [427]	16.2 [411]	1 to 13 (25 to 330)
15-18	18.9 [480]	18.3 [465]	
24-36	23.9 [607]	23.3 [592]	



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Supply Air Openings and Grilles

Models:
SM
006-036

Supply Air K.O.'s in Cabinets

Cabinet Size	Cabinet Height inch	Front inch	Sides/Back inch	Top inch
06-12	88	12 x 6 and 12 x 12		12 x 12
	80	12 x 6	12 x 6 and 12 x 12	
15-18	88	14 x 6 and 14 x 14		14 x 14
	80	14 x 6	14 x 6 and 14 x 12	
24-36	88	16 x 8 and 16 x 16		16 x 16
	80	16 x 6	16 x 6 and 16 x 12	

Supply Air Grille Openings/sq. in.

Cabinet Size	Number of Openings	Minimum sq. in. Openings*	Recommended sq. in. Openings
06-12	1 or 2	144 (1 - 12 x 12) (2 - 12 x 6)	288 (2 - 12 x 12)
15-18	1, 2, or 3	168 (1 - 14 x 12) (2 - 14 x 6)	392 (2 - 14 x 14)
24-36	2 or 3	384 (2 - 16 x 12)	512 (2 - 16 x 16)

* Less than minimum sq. in. opening will have higher sound levels than published

Nominal Grille Size	Double Deflection Free Area (sq. ft.)		
	Deflection 0°	Deflection 22 1/2°	Deflection 45°
12 x 6	0.30	0.28	0.22
12 x 12	0.65	0.59	0.48
14 x 6	0.40	0.38	0.33
14 x 12	0.80	0.71	0.55
14 x 14	0.95	0.86	0.70
16 x 8	0.61	0.55	0.44
16 x 12	0.93	0.85	0.68
16 x 16	1.25	1.12	0.90

Notes:

- When selecting supply air openings/grilles consider CFM, velocity (throw), added static pressure and sound.
- Other sizes available as special.
- If custom grille sizes are used, the area should be greater or equal to above.
- If using more than recommended number of opening, total CFM may be reduced or be unstable (EC motor).
- If only top is used, the manufacturer suggests using the SMT. SMT cabinets are shorter which provides the duct more space to be designed for static regain.

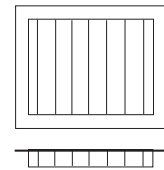
- Grilles are shipped loose for field installation after drywall has been finished.
- Grilles are offered in three different styles; brushed aluminum, painted Polar Ice, or painted Bright White to match the return air door standard colors.
- Overall dimensions - add 1¼ inch (32 mm) to nominal dimensions.

NOTICE

Top air discharge units will require turning vanes and/or a volume damper for proper air flow and balancing, to minimize turbulence. These components must be field furnished and installed in accordance with SMACNA guidelines.

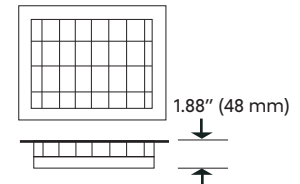
A816GA Series Grilles

Single Deflection - Adjustable vertical blades for controlling horizontal path of discharge air (Left/Right).



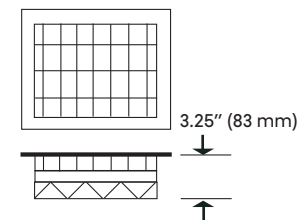
A816GB Series Grilles

Double Deflection - Adjustable vertical and horizontal blades for controlling horizontal and vertical path of discharge air. (Left/Right and Up/Down) Recommended for all standard applications.



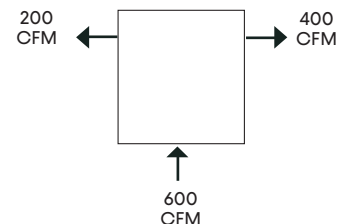
A816GC Series Grilles

Double Deflection with Opposed Blade Damper - Addition of opposed blade damper to grille allows control of air volume (CFM) and path of discharge air. Recommended for applications requiring unequal air flow or side discharge grille(s) with additional top discharge air opening.



Unequal Air Flow - Air discharges requiring different air volumes (CFM). Use double deflection with opposed blade damper grilles.

Top Discharge - Units are designed to operate against relatively low air resistance (external static). Use of liberal duct sizing is recommended to maximize total unit air flow (CFM). Top duct outlet offers more resistance to air flow than side outlets on the same cabinet. For top discharge only use SM Series.



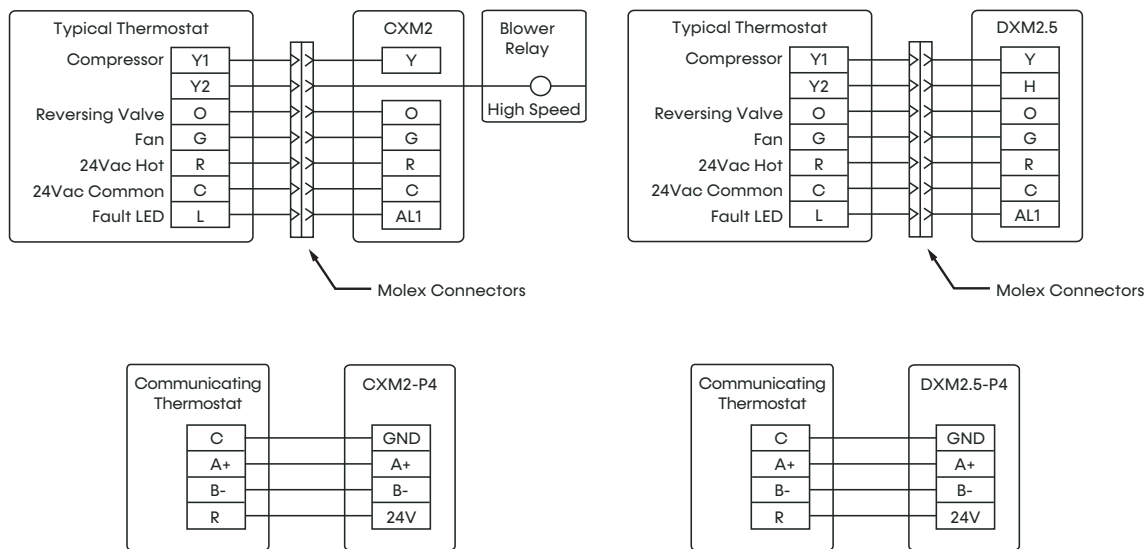
Whether you're on a tight budget or have interest in the latest technology we have many types of thermostats to meet your project needs. Check out the details of our full thermostat product offering on the Thermostats & Accessories page of the ClimateMaster website.

Standard thermostats ship standalone and require field labor to make wiring connections on thermostats. ClimateMaster's A91558 Series adds a 6-inch whip factory-assembled to the thermostat on one end with a 9-pin electrical quick connector on the other end.

This is designed for remote thermostat location applications. You can order cabinets with 15-foot, 25-foot, or 35-foot remote thermostat whips. These whips come with the matching 9-pin electrical connector so thermostats can be quickly and easily installed in the field.

Customer-supplied thermostats should be approved by ClimateMaster's Engineering Department prior to using.

Below are a few examples of how thermostats are wired. Please see SM and thermostat IOMs for full details.

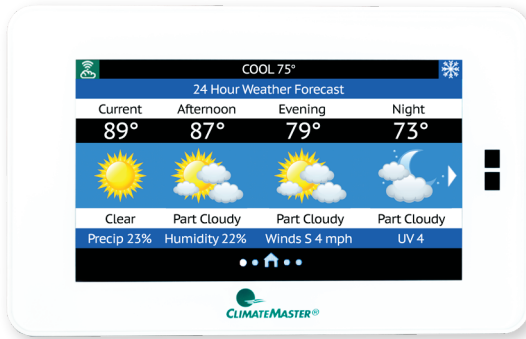


Thermostat Assembly with Molex Connector 6" Pigtail	Thermostat Only+	Remote	Surface	ADA	CXM2	DXM2.5	Manual Changeover	Automatic Changeover	Programmable	Digital	Fault Indicator	Setback Override	Fan Speeds	Wi-Fi	Wireless Remote Temp. Sensor
A9155801	ATA11U01	X	X	X	X	X	X	X	-	X	X	-	1	-	-
A9155802	ATA11U03	X	X	X	X	X	X	-	-	X	-	-	2*	-	-
A9155804	ATA22U01	X	X	X	X	X	X	X	-	X	X	-	2**	-	-
A9155809	ATP21W02	-	-	X	X	X	X	X	X	X	X	-	1	-	-
A9155810	ATP21W02	-	X	-	X	X	X	X	X	X	X	-	1	-	-
A9155811	ATP21W02	X	-	-	X	X	X	X	X	X	X	-	1	-	-
A9155805	ATP32U03C	X	X	X	X	X	X	X	X	X	X	X	2**	-	-
A9155807	AWC99U01	X	X	X	X	X	X	X	X	X	X	X	2**	X	X
A9155813	ATA32V01	X	X	X	X	X	X	X	-	X	-	X	2**	-	-
A9155814	AVB32V02C	X	X	X	X	X	X	X	X	X	X	X	2**	X	X
A9155815	AVB32V03C	X	X	X	X	X	X	X	X	X	X	X	2**	X	X

*Fan speed change automatic through thermostat Y2 signal.

** - Manual speed change

Note: A9155809 for ADA, A9155811 for Remote Mount.



AWC Communicating Thermostat (AWC99U01)

(5.1" w x 3.2" h x 0.9" d)

- Communicating (AWC) Thermostat
- Wi-Fi Enabled
- Remote troubleshooting and diagnosis
- Color Touchscreen
- 7-day Programmable
- Humidity control

CM 500 (AVB32V03C)

5.25" w x 4" h x 1.1" d

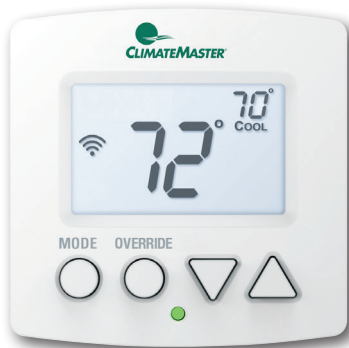
- 7-day Programmable
- Wi-Fi Enabled
- Color Touchscreen
- Humidity control
- For use with water-source heat pumps
- Mobile and web apps available for remote monitoring
- California Title 24 compliant



CM 300 (AVB32V02C)

3.2" w x 3.2" h x 0.9" d

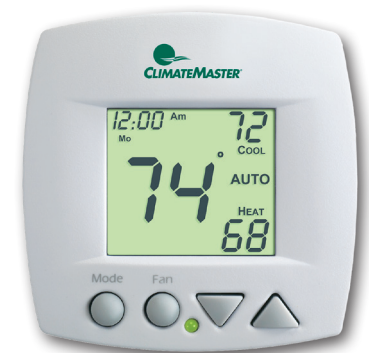
- 7-day Programmable
- Wi-Fi Enabled
- Humidity control
- For use with water-source heat pumps
- Mobile and web apps available for remote monitoring
- California Title 24 compliant



CM 100 (ATA32V01)

3.1" w x 3.1" h x 1.0" d

- Auto Changeover - Automatically switches between cooling or heating
- LED indicator light glows green or red to indicate cooling or heating
- Can control temperature to within 1° of set point
- 3-stage heating and 2-stage cooling for use with heat pump
- All programming and set points stored in nonvolatile memory
- Key pad Locking - set points can only be adjusted by authorized individuals when this feature is on
- Large number display, extremely easy to operate and program



OPTIONAL CABINET DISCONNECT SWITCH (NON-FUSED)

Located on control box access door. Can be accessed through slot in G Panel Frame. Classified as motor disconnect. See Cabinet decoder.

OPTIONAL CABINET CIRCUIT BREAKER

Located on control box access door. Can be accessed through slot in G Panel Frame. All 208/230V and 265V 15 and 20 amp classified as HACR breaker. 265V 25 amp and higher classified as supplemental breaker. See Model Nomenclature for more information.

Cabinet Construction for surface-mounted thermostat cabinet has pre-wired 2" x 4" x 1 7/8" deep electric box mounted for horizontal thermostat. Contractor must turn prior to dry walling if field-supplied vertical thermostat is used. Wire harness ends with 9-Pin Molex quick connector for easy connection to A91558 Series thermostats or can be removed. See Model Nomenclature for more information.

OPTIONAL THERMOSTAT WIRE HARNESS (WHIP)

Low voltage wire harness 15, 25, or 35-foot ending with 9-Pin Molex quick connector. Exits cabinet on top, left front corner. Thermostat cable is rated CL-2. See Cabinet decoder. Can be encased in BX conduit as special, contact factory.

OPTIONAL PREMIUM SEAL

Located on cabinet filter panel, seal is upgraded to extruded rubber gasket for durability and long life.

OPTIONAL 2-INCH FILTER

2-inch filter improves air filtration and reduces maintenance.

ACCESSORY FILTERS

1-inch (25-mm) thick, MERV 8, and MERV 11

2-inch (50-mm) thick, MERV 8, MERV 11, MERV 13

NOTE: Accessory filters are not available for every application. Reference the blower tables for ESP.

SMS Accessory Filter ESP

Model	SMS with EC Blower Motor			Coil Area sq ft	Face Velocity FPS	Accessory Filter Initial ESP				
	Size	Max CFM	Max ESP			Merv 8		Merv 11		Merv 13
						1"	2"	1"	2"	2"
C1	9	500	0.3	2.5	200	0.09	0.07	0.10	0.09	0.16
C2	12	500	0.3	2.5	200	0.09	0.07	0.10	0.09	0.16
C3	15	700	0.3	2.5	280	0.17	0.14	0.22	0.15	0.25
C4	18	800	0.3	2.5	320	0.20	0.16	0.29	0.19	0.28
C5	24	950	0.3	3.4	280	0.17	0.14	0.22	0.15	0.25
C6	30	1,100	0.3	3.4	325	0.21	0.15	0.32	0.19	0.29
C7	36	1,350	0.3	3.4	400	0.26	0.21	0.44	0.24	0.34

OPTIONAL CABINET DISCONNECT SWITCH

Located on control box access door. Can be accessed through slot in G Panel Frame. Classified as motor disconnect. See Model Nomenclature for more information

OPTIONAL CABINET CIRCUIT BREAKER

Located on control box access door. Can be accessed through slot in G Panel Frame. All 208/230V and 265V 15 and 20 amp classified as HACR breaker. 265V 25 amp and higher classified as supplemental breaker. See Model Nomenclature for more information

OPTIONAL THERMOSTAT WIRE HARNESS (WHIP)

Low voltage wire harness 15, 25, or 35 foot ending with 9-Pin Molex quick connector. Exits cabinet on top, left front corner. Thermostat cable is rated CL-2. See Model Nomenclature for more information Can be encased in BX conduit as special, contact factory.

OPTIONAL PREMIUM SEAL

Located on cabinet filter panel, seal is upgraded to extruded rubber gasket for durability and long life.

OPTIONAL 2-INCH FILTER AND HOLDER

2-inch filter improves air filtration and reduces maintenance.

ACCESSORY FILTERS

1-inch (25-mm) thick, MERV 8, and MERV 11

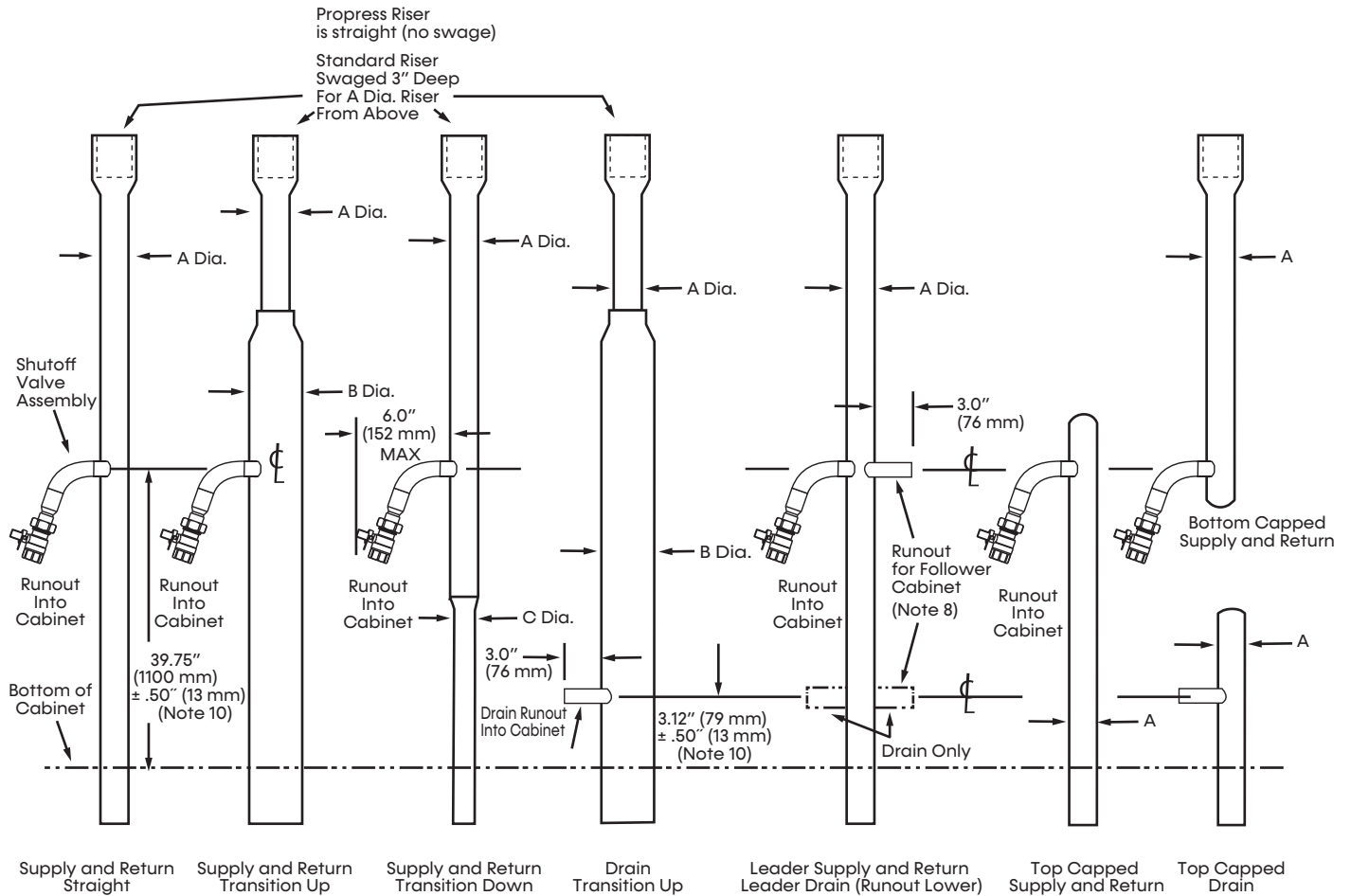
2-inch (50-mm) thick, MERV 8, MERV 11, and MERV 13

NOTE: Accessory filters are not available for every application. Reference blower tables for ESP.

SMT Accessory Filter ESP

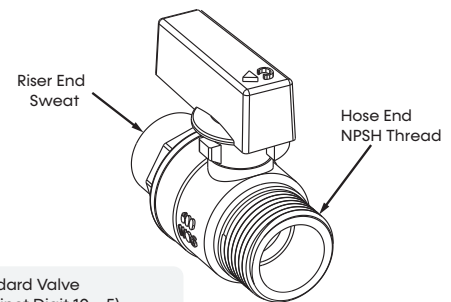
Model	Size	SMT with EC Blower Motor		Coil Area	Face Velocity	Accessory Filter Initial ESP				
		Max CFM	Max ESP			Merv 8		Merv 11		Merv 13
				sq ft	FPS	1"	2"	1"	2"	2"
D1	9	450	0.4	2.5	180	0.08	0.06	0.09	0.08	0.15
D2	12	450	0.4	2.5	180	0.08	0.06	0.09	0.08	0.15
D3	15	700	0.5	2.5	280	0.17	0.14	0.22	0.15	0.25
D4	18	800	0.5	2.5	320	0.20	0.16	0.29	0.19	0.28
D5	24	950	0.6	3.4	280	0.17	0.14	0.22	0.15	0.25
D6	30	1,150	0.6	3.4	340	0.22	0.16	0.33	0.20	0.30
D7	36	1,350	0.6	3.4	400	0.26	0.21	0.44	0.24	0.34

Figure 1: Riser Identification



Notes:

1. You must know water flow direction to determine if cabinet requires transition up or down.
2. Transitions can only change by one diameter (1-inch to 1¼-inches, 1¼-inches to 1½-inches, etc.)
3. Riser transition couplings and run outs are factory brazed.
4. All risers are factory pressure tested.
5. Standard riser diameters are nominal 1-inch, 1¼-inches, 1½-inches, 2-inches, 2½-inches, and 3-inches. Please consult the factory on pricing for nominal 4-inch water tubing.
6. Copper Type M and L available (4-inch L only).
7. Drain riser insulated standard. Insulation is optional for supply and return
8. Leader riser - For follower cabinet riser ball valve assemblies, 12-inches of straight copper are provided for field connection to the leader riser. Assembly to be cut to length and field brazed. In applications where more than 12-inches of straight copper is needed, copper and fittings to be field-provided.
9. Standard ball valves have NPSH threads for connection to AHU hoses ½-inch for sizes 06-12, ¾-inch for 15-18, and 1-inch for sizes 24-36.
10. If cabinet stand or thick ISO pad is used, at installation add height/thickness to shutoff valve and drain run out height. Verify riser shutoff height with plans before brazing.



Standard Valve
(Cabinet Digit 10 = 5)
Used with AHU-Style Hoses

	Riser Diameter (in)						
A	1.00	1.25	1.50	2.00	2.50	3.00	4.00
B	1.25	1.50	2.00	2.50	3.00	-	-
C	-	1.00	1.25	1.50	2.00	2.50	-

NOTE: ClimateMaster units with the motorized-valve option have high-pressure water switches. Do not design the riser stack where switch will not reset (trip - 300 PSI; Reset - 250 PSI).

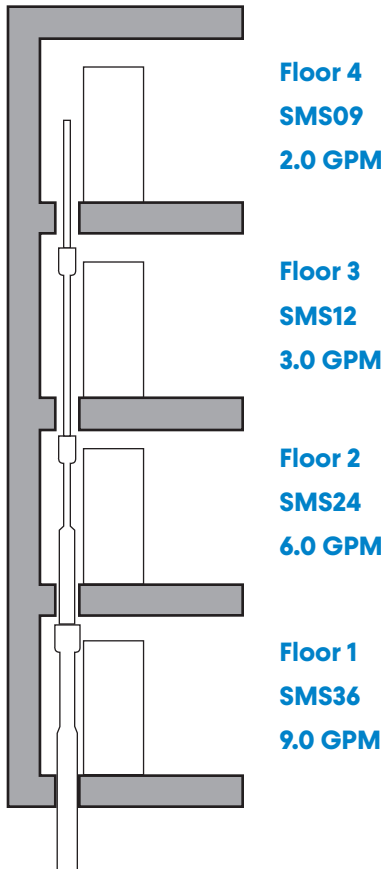
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Riser GPM Definitions and Sizing

Models:
SM
006-036

Riser GPM requirements and individual Unit GPM requirements are necessary to select the proper Riser Piping diameters. Refer to this page to determine GPM requirement, then refer to Riser Diameter Sizing Table to determine Riser Piping diameters.

Example is for bottom supply (upward flow) - bottom return (downward flow) system feed loop, both supply and return will be same GPM. GPM's are dependent upon unit load and system loop water temperatures. Please refer to Performance Charts for individual Unit GPM requirements.



Unit GPM (UGPM) = Required gallons per minute from Performance Charts, or GPM used to calculate unit capacity.

NOTE: For factory installed AFR check Flow Rate available (See Table)

Total Riser GPM (TRGPM) = The total GPM's required for all units on each riser.

Total GPM Per Floor (TGF) = Total GPM minus the sum of Unit GPM from all floors above or below, depending on direction of flow.

Example: Four floors, Consisting of units sizes SMS36, SMS24, SMS12 and SMS09, as shown in diagram. UGPM's are 9.0, 6.0, 3.0 and 2.0 respectively.

TRGPM = 9.0 + 6.0 + 3.0 + 2.0 = 20 GPM.

Upward Flow:

- Floor 1: TGF = 20 Add all floor GPM's (TRGPM).
- Floor 2: TGF = 11 Total GPM minus floor 1 GPM.
- Floor 3: TGF = 5 Total GPM minus floors 1 and 2 GPM's.
- Floor 4: TGF = 2 Total GPM minus floors 1, 2, and 3 GPM's.

Downward Flow:

- Floor 4: TGF = 20 Add all floor GPM's (TRGPM).
- Floor 3: TGF = 18 Total GPM minus floor 4 GPM.
- Floor 2: TGF = 15 Total GPM minus floors 1 and 2 GPM's.
- Floor 1: TGF = 9 Total GPM minus floors 1, 2, and 3 GPM's.

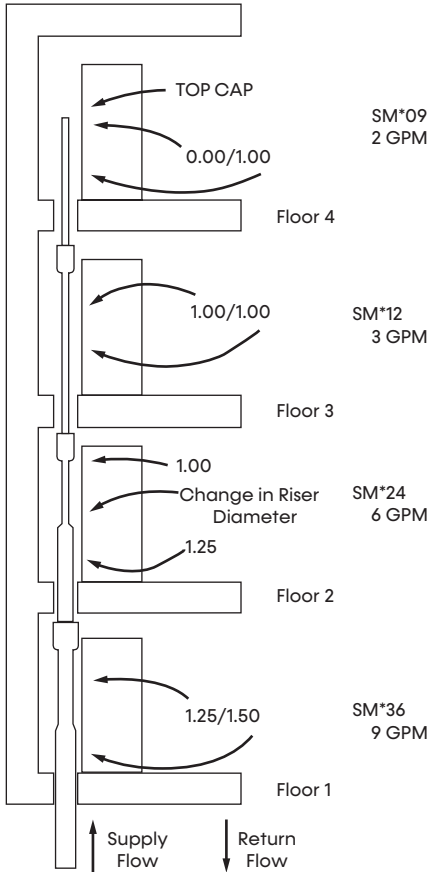
Option	Auto-flow Regulator GPM							
	Unit Size							
	06	09	12	15	18	24	30	36
0	None							
B	1.0							
C	1.5							
D	2.0							
E	2.5							
F	3.0							
G	3.5							
H	4.0							
J	5.0							
K	6.0							
L	7.0							
M	8.0							
N	9.0							
P	10.5							

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Refer to Riser GPM Definitions and Sizing for the prefix to this example.

Each SM Vertical Stack unit has three riser pipes: supply, return, and drain. The following example will be for Supply and Return riser pipe (from the top floor to the bottom floor), supply flow up and return flow down.

NOTE: If flows are both same direction, you will have to create two Table 3s, Supply and Return



From Table 1 (below) determine the proper riser diameter needed to satisfy the required GPM's at each unit. Refer to Table 2 (below) for a summary.

Top Cap - Top half of riser is eliminated and sealed.

Bottom Cap - Bottom half of riser is eliminated and sealed.

The following nomenclature is used to designate the diameters at the top (always first) and bottom of each unit.

0.00/1.00 - Indicates top cap/1-inch bottom.

1.00/1.00 - Indicates 1-inch top/bottom.

1.00/1.25 - Indicates 1-inch top/1¼-inch bottom.

1.25/1.50 - Indicates 1¼-inch top/1½-inch bottom.

(from this we develop Table 3)

NOTE: transition risers limited to one nominal diameter size, larger or smaller, within each floor (cabinet).

Table 1

Maximum GPM	10	16	23	48	80	135	190
Nominal Riser Diameter	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"

- Max GPM for 1 inch to 1½ inches sized for 4 FPS velocity
- Max GPM for 2 inches to 4 inches sized for 5.5 FPS velocity

NOTE: max GPM per NABB recommendation. Never exceed 6.5 FPS, excessive noise and abrasion will occur.

Table 2

Floor	TGF	Diameter From Table 1
4	2	1" [25.4 mm]
3	5	1" [25.4 mm]
2	11	1.25" [31.8 mm]
1	20	1.50" [38.1 mm]

Table 3

Nomenclature per Unit	Description
0.00/1.00	Top Cap, w/1" Bot Feed
1.00/1.00	1" Full Length Riser
1.00/1.25	1" Top, 1.25" to 1st Floor
1.25/1.50	1.25" Top, 1.50" Bottom

Table 4 (From IMC-2012 Table)

Drain Diameter	Max Tonnage
1" [25 mm]	40
1¼" [32 mm]	90
1½" [38 mm]	125
2" [51 mm]	250

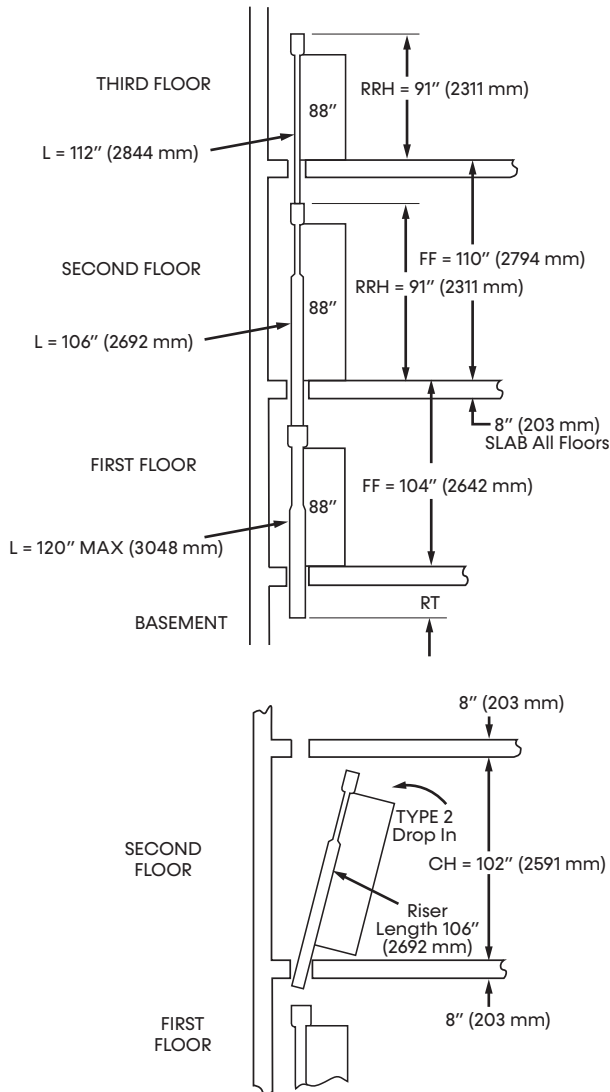
Enter values from Table 3 on the Riser Piping Schedule in the ClimateMaster Solution Center. Top diameter must match bottom diameter of floor above.

To calculate drain riser diameter, add up unit tonnage and use Table 4. Example has 6¾ tons, so 1-inch diameter is adequate.

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Swage Riser Length Definitions and Sizing

Models:
SM
006-036



Total Riser Length (L) for same height cabinets on every floor = FF of floor below + 2 inches (51 mm)

NOTE: If cabinet heights are mixed then L must be calculated. (88 inch, 80 inch, or 65 inch)

Floor To Floor Height (FF): Distance from top of unit slab to top of above slab.

Room Riser Height (RRH): Cabinet height + 3 inches (76 mm).

Riser Tail Piece (RT): Length of riser extending down from the cabinet. Riser tail piece must extend a minimum of 5 inches (127 mm) below slab.

Slab thickness (ST): Slab thickness plus and additional material added to slab prior to setting cabinets.

Riser insertion into swage = 2 inches (51 mm)

Example 1 - Calculating Riser Length

SECOND FLOOR RISER LENGTH

- Slab = 8 inches (203 mm)
- Cabinet Height = 88 inches (2235 mm)
- Use FF from first floor
- $L = FF + 2 \text{ inches (50 mm)} = 106 \text{ inches (2692 mm)}$
- RRH = 91 inches (2311 mm)
- RT = 15 inches (381 mm)

THIRD FLOOR RISER LENGTH

- Use FF from second floor
- $L = 112 \text{ inches (2844 mm)}$
- RRH = 91 inches (2311 mm)
- RT = 21 inches (533 mm)

Example 2 - Checking Length for drop in to confirm acceptable

- $L = 106 \text{ (2591) TYPE 2 drop in}$
- Slab Slot = See slab slot chart for width and length.

Clear Height (CH) and Riser Length (L) are used to determine slab slot dimensions so riser will pass through slot without hitting ceiling.

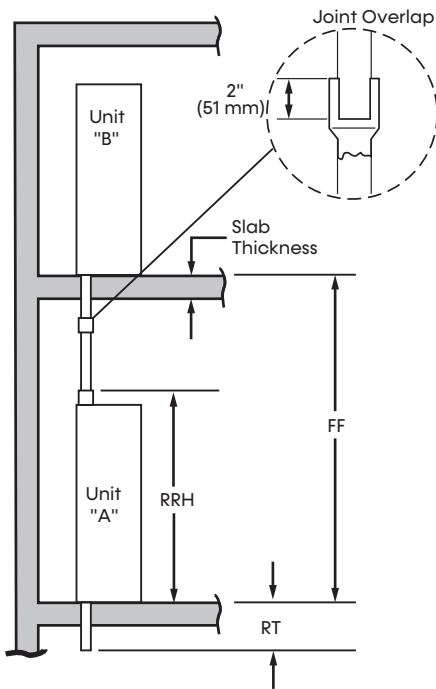
- $CH = FF - ST$

Notes:

1. Always use bottom of cabinet for calculations. If optional stand is used, everything raises dimension of stand.
2. If riser maximum 120-inches (3048-mm) is exceeded or RT is less than slab + 5 inches (127 mm) must use extension, see riser extension sizing.
3. Complete all core drilling before setting cabinets, openings must be aligned and plumb.
4. Set from lowest floor up.
5. If risers are shipped separate they are bulk shipped. Can palletize risers by floor as special.
6. Secure riser stack to building structure and use expansion fittings as required.
7. For calculating and entering on Solution Center, use full length even if top or bottom is capped.
8. Dimensions are inches (mm).

Swage Riser Extension Definitions and Sizing

Models:
SM
006-036



Riser Extension Length: Start with the floor to floor Dim. (FF) From this subtract the room riser height and tail piece length. Then add 4 inches (102 mm) for the two joint overlaps.

Riser Extension Length = FF - (RRH + RT) + 4 inches (102 mm). Minimum extension is 10-inches (254-mm). Reduce riser length if needed.

Riser Tail Piece (RT): Length of riser extending down from the cabinet. Riser tail piece must extend a minimum of 5 inches (127 mm) below slab.

Room Riser Height (RRH): Cabinet height + 3 inches (76 mm).

Floor To Floor Height (FF): Distance from top of unit slab to top of above slab. Slab thickness (ST); Slab thickness plus and additional material added to slab prior to setting cabinets.

Special care must be taken in sizing riser lengths and tail piece lengths when:

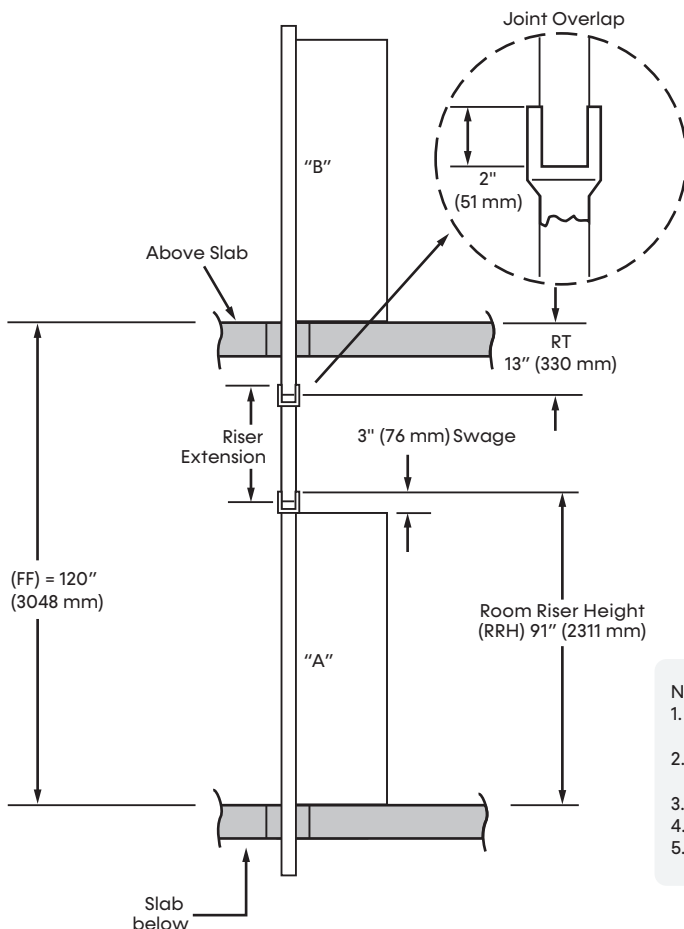
- a. Riser extensions are used.
- b. Floor to floor heights vary.
- c. Slab thickness varies from floor to floor.

Example: Cabinet = 88 inches

- Floor to floor (FF) = 120 inches (3048 mm)
- Room Riser Height (RRH) = 91 inches (2311 mm)
- RT = 13 inches (330 mm)

Riser Extension: $120'' - (13'' + 91'') + 4'' = 20''$

$$3048 - (330 + 2311) + 102 = 508 \text{ mm}$$



Notes:

1. Example shown - riser extensions would be ordered with "A" and assembled between "A" and "B".
2. Riser "A" Top and Riser "B" bottom must be the same diameter. Extensions cannot transition.
3. Extensions are shipped loose, bulk shipped to minimize shipping cost.
4. Dimensions are inches (mm).
5. Any extension below "A" can be ordered as a factory special.

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ROTATING CABINET WITH RISERS INTO POSITION

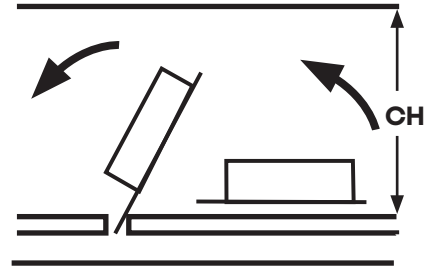
To use the charts, you will need the clear height of the room the unit is in, riser length, diameter, and type of installation. (See below)

NOTICE

Before locating riser slab slot in floor, review plans and all information in this submittal regarding cabinet, risers, slab slot, rotation into slot, clear height and the relationship of all.

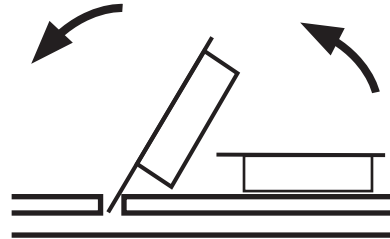
TYPE 1: SINGLE UNITS

With a minimum clear height of 93 inches (2362 mm). Start with the riser side down, then lift and insert risers into slot, rotate upward, slowly pass risers through slot, and set the cabinet on floor.



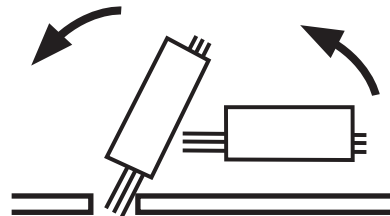
TYPE 2: SINGLE UNITS

With a minimum clear height of 95 inches (2413 mm). Start with the side opposite of the risers down, then lift and insert risers into slot, rotate upward, slowly pass risers through slot, and set the cabinet on floor.



TYPE 3: SINGLE UNITS

With a minimum clear height of 94 inches (2388 mm). Start with the risers on either side, then lift and insert risers into slot, rotate upward, slowly pass risers through slot, and set the cabinet on floor.

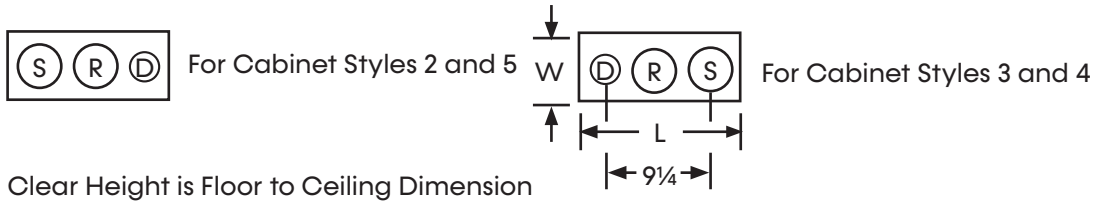


NOTE: To determine the slab slot size required for the risers and to determine if clear height is acceptable for unit installation, use Example 2 on Riser Length page and Slab Slot charts on the next page.

Slab Slot Chart – 3 Pipe

Models:
SM
006-036

Riser Stack Patterns



Slab Slot for Cabinets with Risers

Model	Clear Height		Riser length		Type of Installing Cabinet Through Slot					
	inch	mm	inch	mm	Type 1		Type 2		Type 3	
					inch	mm	inch	mm	inch	mm
06-18	105	2,667	115	2,921	8 x 13 1/2	203 x 343	6 1/2 x 13 1/2	165 x 343	6 1/2 x 16	165 x 406
	100	2,540	110	2,794						
	98	2,498	108	2,743						
	96	2,438	106	2,692						
	95	2,413	105	2,667						
	94	2,387	104	2,641						
24-36	105	2,667	115	2,921	9 x 13 1/2	229 x 343	7 1/2 x 13 1/2	190 x 343	6 1/2 x 16 1/2	165 x 419
	100	2,540	110	2,794						
	96	2,498	108	2,743						
	95	2,413	105	2,667						
	94	2,387	104	2,641						
	93	2,362	103	2,616						

Notes:

- Chart dimensions for 3-inch (76.2-mm) supply and return risers with insulation and 2-inch drain riser, 88-inch (2,235-mm) cabinet, and 8-inch (203-mm) slab
- Clear height is dimension from floor to ceiling. Riser length is clear height plus slab thickness plus 2 inches (50 mm).
- For 2-inch (50.8-mm) risers setting by any Type 1, 2, or 3 reduce width by 1 inch (25 mm) also Type 3 reduce length by 1 inch (25 mm)
- For 1-inch (25.4-mm) risers setting by any Type 1, 2, or 3 reduce width by 2 inches (50 mm) also Type 3 reduce length by 2 inches (50 mm)
- Opening centerline must be aligned from floor to floor
- Contractor is responsible to meet all codes and regulations.

Slab Hole if Risers Ship Loose and Installed Before the Cabinet

Model	Clear Height		Riser Length		Riser Diameter					
	in	mm	in	mm	3	76.2	2	50.8	1	25.4
					in	mm	in	mm	in	mm
All	105	2,667	115	2,921	6 1/2	165	5 1/2	140	4 1/2	114
	100	2,540	110	2,794						
	96	2,438	106	2,692						
	95	2,413	105	2,667						
	94	2,387	104	2,641						
93	2,362	103	2,616							

Notes:

- Dimensions for 8-inch (203-mm) slab
- Clear height is dimension from floor to ceiling. Riser length is clear height plus slab thickness plus 2 inches (50 mm).
- Opening centerline must be aligned from floor to floor
- For risers over 100 inches (2,540 mm) using extensions with clear height equal to riser length or more, the hole size can be riser diameter plus 1-inch (25 mm).
- If riser diameter is not shown use next larger size.
- Contractor is responsible to meet all codes and regulations.

UNITS ARE SHIPPED FOB FACTORY

Chassis can be shipped in two ways:

1. Standing upright, chassis are packaged in a shipping carton and are shipped four chassis per pallet (See Shipping Figure 1).
2. Standing upright, chassis are shipped in the cabinet. The chassis cabinet combo are shipped four units per pallet. This shipping methodology reduces the number of freight pieces by 50%. This reduces freight costs, labor to remove shipping material, and dunnage removal expenses (See Shipping Figure 1).

Cabinets can be shipped in two ways:

1. Standing upright, cabinets are packaged in shrink wrap and are shipped four cabinets per pallet (See Shipping Figure 1).
2. Laid horizontally with risers attached. Due to risers extending both below and above the cabinet anytime risers are attached to the cabinets horizontal shipping with the use of a flat bed truck is required. The number of cabinets per pallet can vary based on size and quantity mix (See the Horizontal Shipping Table). Pallets are shrink wrapped and a tarp is applied over the products for added protection during transit.

Risers can be shipped in two ways:

1. Shipped horizontally attached to the cabinet. See cabinet shipping option 2 above for details.
2. Shipped horizontally in a crate. Risers are crated by themselves and can be shipped independently from cabinets allowing for early installation. Risers shipping in a crate separately requires the use of a flat bed truck. The number of risers per pallet can vary based on diameter and quantity mix (See the Riser Shipping Table). Pallets are reinforced with a custom wood frame and packaging (See Shipping Figure 4).

Chassis, cabinets, and risers are palletized to maximize shipping density. The logic used for grouping is unit size by sales order.

Special shipping accommodations can be provided. Please see the Pre-Engineered factory design specials section for more details. Some examples include, palletizing by floor, palletizing by riser, end fork pallets, and reduced number of units per pallet.

Vertical Shipping: Standard Chassis

Description		Vertical Shipping								
		Size	Multi-pack			Qty Per Pallet	Multi-pack Weight (lbs)	Multi-pack Weight (kg)	Pallet Stacking	Approx. Qty Per 53' Box Trailer
			Length	Width	Height					
Chassis		06-12	41	41	50	4	430	195	Two High	240
		15-18	43	43	50	4	542	246	Two High	240
		24-36	53	53	52	4	786	357	Two High	192
Cabinets	No Supply Flanges	80" 06-12	41	41	87	4	478	217	One High	112
		80" 15-18	43	43	87	4	558	253	One High	112
		80" 24-36	53	53	87	4	722	328	One High	72
	Supply Flanges Installed	80" 06-12	41	41	87	4	478	217	One High	112
		80" 15-18	45	45	87	4	558	253	One High	112
		80" 24-36	56	53	87	4	722	328	One High	72
	No Supply Flanges	88" 06-12	41	41	95	4	534	242	One High	112
		88" 15-18	43	43	95	4	618	281	One High	112
		88" 24-36	53	53	95	4	782	355	One High	72
	Supply Flanges Installed	88" 06-12	41	41	95	4	534	242	One High	112
		88" 15-18	45	45	95	4	618	281	One High	112
		88" 24-36	56	53	95	4	782	355	One High	72
Chassis Shipped In Cabinets	No Supply Flanges	80" 06-12	41	41	87	4	886	402	One High	112
		80" 15-18	43	43	87	4	1,078	489	One High	112
		80" 24-36	53	53	87	4	1,482	672	One High	72
	Supply Flanges Installed	80" 06-12	41	41	87	4	886	402	One High	112
		80" 15-18	45	45	87	4	1,078	489	One High	112
		80" 24-36	56	53	87	4	1,482	672	One High	72
	No Supply Flanges	88" 06-12	41	41	95	4	942	427	One High	112
		88" 15-18	43	43	95	4	1,138	516	One High	112
		88" 24-36	53	53	95	4	1,542	700	One High	72
	Supply Flanges Installed	88" 06-12	41	41	95	4	942	427	One High	112
		88" 15-18	45	45	95	4	1,138	516	One High	112
		88" 24-36	56	53	95	4	1,542	700	One High	72

Shipping Height 85-inch for 80-inch cabinet and 93-inch for 88-inch cabinet
Small and Large cabinets can be mixed on some loads

Horizontal Shipping

Horizontal Shipping										
Description	Size	Multi-pack			Qty per Pallet	Multi-pack Approx. Weight (lbs)	Multi-pack Approx. Weight (kg)	Pallet Stacking*	Up to 110" Long Risers Approx. Qty Per 48' Flat Bed Trailer	111" to 120" Long Risers Approx. Qty Per 48' Flat Bed Trailer
		Length	Width	Height						
Cabinets	80" 06-12	127	53	87	8	1,600	726	Two High	60	48
	80" 15-18	127	53	93	8	1,600	726	Two High	60	48
	80" 24-36	127	63	76	6	1,600	726	Two High	45	36
	88" 06-12	127	53	87	8	1,600	726	Two High	60	48
	88" 15-18	127	53	93	8	1,600	726	Two High	60	48
	88" 24-36	127	63	76	6	1,600	726	Two High	45	36

* Warehousing purposes only, pallets are shipped one high

Horizontal Shipping – E Cabinet Series

Horizontal Shipping								
Description	Size	Multi-pack			Qty per pallet	Multi-pack Approx. Weight (lbs)	Multi-pack Approx. Weight (kg)	Pallet Stacking*
		Length	Width	Height				
Cabinets	65" 06-12	127	58	87	6	1,046	475	Two High
	65" 15-18	127	58	93	6	1,118	507	Two High
	65" 24-36	127	68	76	4	906	411	Two High
	80" 06-12	127	58	87	6	1,199	544	Two High
	80" 15-18	127	58	93	6	1,277	580	Two High
	80" 24-36	127	68	76	4	1,016	461	Two High
	88" 06-12	127	58	87	6	1,247	566	Two High
	88" 15-18	127	58	93	6	1,331	604	Two High
	88" 24-36	127	68	76	4	1,056	479	Two High

* Warehousing purposes only, pallets are shipped one high

Horizontal Shipping – D Cabinet Series

Horizontal Shipping								
Description	Size	Multi-pack			Qty per pallet	Multi-pack Approx. Weight (lbs)	Multi-pack Approx. Weight (kg)	Pallet Stacking*
		Length	Width	Height				
Cabinets	65" 06-12	127	53	87	8	1,150	522	2 High
	65" 15-18	127	53	93	8	1,230	558	2 High
	65" 24-36	127	63	76	6	1,262	573	2 High

* Warehousing purposes only, pallets are shipped one high

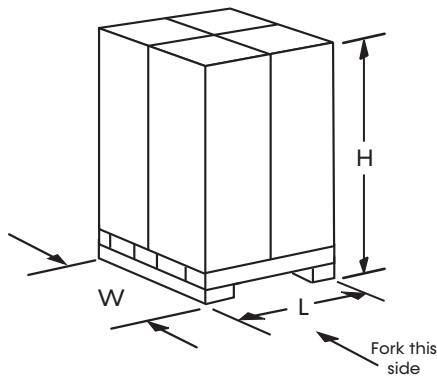
Riser Shipping

Nominal Size (inch)	Pallet			# of Non-Insulated Layers per Pallet	# of Non-Insulated Risers per Pallet	# of Insulated Layers per Pallet	# of Insulated Risers per Pallet	Pallet Stacking	Qty Pallets Per 48' Flat Bed Trailer
	Length (inch)	Width (inch)	MAX Height (inch)*						
1	120	50	48	25	300	19	228	Two High	8
1.25	120	50	48	22	220	17	170	Two High	8
1.5	120	50	48	19	190	15	150	Two High	8
2	120	50	48	15	150	12	120	Two High	8
2.5	120	50	48	12	108	11	99	Two High	8
3	120	50	48	11	88	9	72	Two High	8
4	120	50	48	8	64	7	56	Two High	8

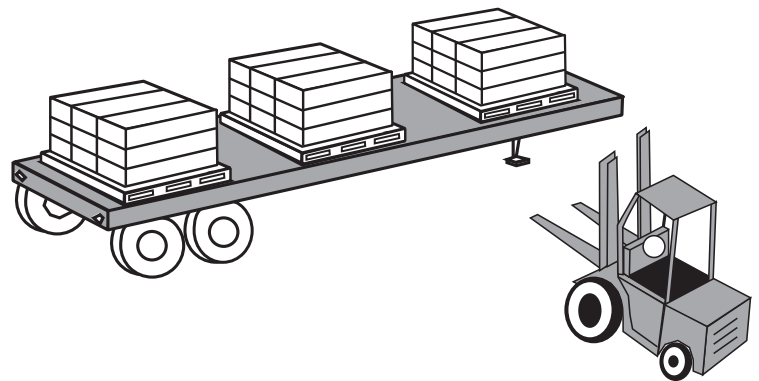
Calculations based on all palletized risers having the same nominal diameter size. Actual number of risers per pallet and number will vary based on riser diameter and insulation attachment mix.

* Includes the top pallet piece, bottom pallet piece, 0.25" cardboard dividers between each layer, and 0.375-inch thick tubing insulation (if applicable).

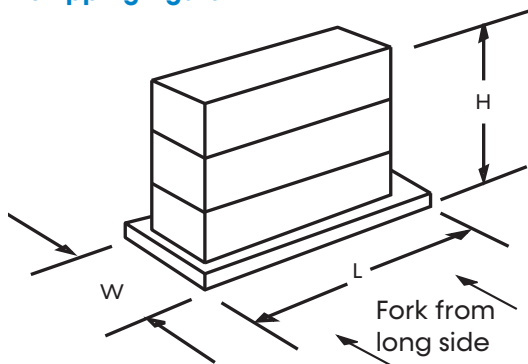
Shipping Figure 1



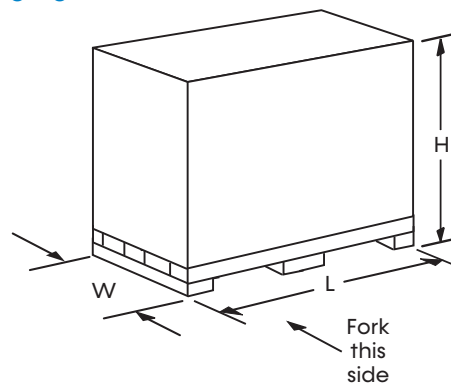
Shipping Figure 3



Shipping Figure 2



Shipping Figure 4



GENERAL

Furnish and install ClimateMaster Tranquility SM Vertical Stack water-source heat pumps as indicated on the plans with capacities and characteristics as listed in the schedule and the specifications that follow.

Units shall be supplied completely factory built capable of operating over an entering water temperature range from 20° to 120°F (-6.7° to 43.3°C) as standard. Equivalent units from other manufacturers may be proposed provided approval to bid is given 10 days prior to bid closing. All equipment listed in this section must be rated and certified in accordance with Air-Conditioning, Heating and Refrigeration Institute / International Standards Organization (AHRI / ISO 13256-1). All equipment must be tested, investigated, and determined to comply with the requirements of the standards for Heating and Cooling Equipment UL 60335-2-40 4th Edition, UL 60335-1 6th Edition for the United States and Can/CSA C22.2 No. 60335-2-40:22, CAN/CSA C22.2 No 60335-1:16 for Canada, by Intertek Testing Laboratories (ETL). The units shall have AHRI / ISO and ETL-US-C labels.

All units shall pass a factory acceptance test. The quality control system shall automatically perform the factory acceptance test via computer. A detailed report card from the factory acceptance test shall be shipped with each unit. **NOTE: If a unit fails the factory acceptance test, it shall not be allowed to ship. Unit serial number shall be recorded by factory acceptance test and furnished on report card for ease of unit warranty status.**

CABINET CONSTRUCTION:

The cabinet panels shall be fabricated from heavy gauge galvanized steel. The rigid one-piece cabinet assembly shall be constructed so that it is self-supporting, and can be installed prior to the chassis arrival, and to be able to avoid damage during construction. The cabinet shall have a full panel over the chassis opening for structural rigidity of the cabinet; **no "open" top or "open" bottom designs allowed.**

The cabinet base shall contain a secondary drain pan fully insulated with a pressure differential drain trap connected to the condensate riser pipe, and guide rails for the slide in refrigeration chassis. Drain pans to be rubber grommet mounted to provide isolation of chassis from the cabinet. The drain pan(s) shall be easily accessible for cleaning. All interior surfaces shall be lined with ½-inch (12.7 mm) thick, 1-½ lb/ft³ (24 kg/m³) acoustic-type fiberglass insulation. All insulation shall be **foil-faced** and have exposed edges butted up to flanges to prevent the introduction of glass fibers into the air stream. Standard insulation must meet NFPA Fire Hazard Classification requirements 25/50 per ASTM E84, UL 723, CAN/ULC S102-M88 and 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.**

Standard units have a 1-inch (25-mm) filter holder with 1-inch (25-mm) thick fiberglass throwaway filter.

Option: 2-inch (50-mm) filter holder with 2-inch (50-mm) thick fiberglass throwaway filter.

Option: Pre-Engineered Special: Integrated fresh-air intake. Removes the need for field attachment of fresh air assembly. Does not increase the cabinet footprint. Available with cabinet side connection only.

Cabinet arrangements shall allow placement of riser piping on any one of the three sides of the cabinet not used for the chassis access and air supply. All cabinets shall have supply air knockouts on all sides and top. Return air K.O. to be removed from panel behind the filter. Field shall configure cabinets by removing factory knockouts and install duct flanges per model configuration shown on plans. For air noise attenuation purposes, the discharge air from fan shall discharge into insulated plenum that also contains x-shape painted air baffle. Units not having supply air noise baffles are not acceptable. Cabinet design shall allow a full height base board (4.50 inches/114 mm) beneath the return air "G" panel. The cabinet shall contain an easily removable motor/blower assembly.

Option: Factory to configure supply air openings, remove K.O., cut insulation, and install duct angles. With dust protection, includes capping supply air openings and leaving K.O. in panel behind filter (installer to remove both).

Electrical conduit shall be installed from electrical unit control compartment to top of cabinet for low voltage control wiring as well as separate conduit for main power wiring. Units without these two factory-installed electric conduits will not be accepted.

Option: Leader and follower cabinets.

Option: Required installation vibration isolation pad to be applied at the factory to the bottom of the cabinet if not field provided.

Option: Cabinet height 80 inches or 88 inches (203 or 223 cm)

Option: Pre-Engineered Special: Extended cabinet heights

Option: Construction for unit mounted Thermostat (thermostat ordered separate) - includes junction box mounted outside discharge plenum and has a Molex-type connector inside for quick connection to A91558 Series thermostat. The A91558 series use thermostat models ATA11U01, ATA11U03, ATA22U01, ATP21W02, ATP21W02, ATP21W02, ATP32U03C, AWC99U01, ATA32V01, AVB32V02C, AVB32V03C respectively with mating Molex-type connector.

Option: Pre-Engineered Special: Custom thermostat whips for connection to 3rd party provided thermostats.

Option: Low voltage 15-, 25-, or 35-foot (572-, 762-, or 1,067-cm) wire harness (whip) with Molex-type connector for connection to remote mounted thermostat. For use with A91558 thermostat series (see above).

Option: Pre-Engineered Special: Extended thermostat whips for remote thermostat location in excesses of 35 feet from the cabinet.

Option: Cabinet to have wire harness for connection to A91558 series thermostat mounted to ADA "G" return air panel.

Option: Premium automotive grade rubber seal between cabinet inner panel and chassis.

Full-length supply, return, and insulated condensate water risers shall be type M copper. Riser length up to 120 inches (305 cm) is standard. Supply and return risers have integral internal piping including ball valves (for shut off purposes at unit). Risers and piping shall be factory pressure tested to check for leaks. Field installed hose kits are required to connect the chassis piping to the cabinet ball valve. The condensate riser shall be insulated with 3/8-inch (9.5-mm) Armaflex type insulation. The top of each riser shall be deeply swaged (3 inches/76.2 mm) to accept connection to the riser above/below, allowing for a floor-to-floor dimensional variance of ± 1 inch (25.4 mm). **Units not having swaged riser-piping connections shall not be acceptable. Couplings and trim pieces shall not be allowed.**

Option: Bulk ship risers so complete riser stack can be installed, pressure tested, and filled before the cabinets are installed.

Option: Pre-Engineered Special: Risers/Cabinets/Chassis shipped by floor. This helps with job site delivery coordination.

Option: Type L riser piping.

Option: Supply and return risers insulated with 3/8-inch (9.5 mm) ARMAFLEX (closed cell) type insulation. 1 inch through 3-inch diameter standard, 4-inch diameter available.

Option: Non-swaged riser piping for crimp (non-brazed) style connections.

Option: Pre-Engineered Special: Risers for single pipe applications. Supply and return water lines are combined into one riser configuration.

Option: Pre-Engineered Special: Riser connection location moved lower. Standard riser connections are made above the cabinets. This requires the use of a ladder or scaffolding to get access to the connection. Riser connection locations are moved lower so that connections can be made at the ground level. Risers must be shipped separately.

Option: Pre-Engineered Special: Riser manual air vents. Allow for air to be purged from the riser stack during commissioning.

Option: Pre-Engineered Special: Extended risers. Removes the need for riser extension pieces which results in less field connections.

Option: Pre-Engineered Special: Remove drain riser. This is needed when condensate drain risers are field provided.

Option: Pre-Engineered Special: Riser bypass valve. Allows water flow from supply to return riser during pressurization prior to the chassis being installed.

FAN AND MOTOR ASSEMBLY

The cabinet shall contain a removable motor/blower assembly. Units shall have a direct drive centrifugal fan. The base fan motor option shall be a 4-speed or 5-speed, permanently lubricated, Constant Torque EC motor type with thermal-overload protection. The fan motor for small size units (06-12) shall be isolated from the fan housing by a torsionally flexible motor mounting system with rubber type grommets to inhibit vibration induced high noise levels associated with "hard wire belly band" motor mounting. The fan motor on medium and large units (15-36) shall be isolated with flexible rubber type isolation grommets only. Airflow/External static pressure rating of the unit shall be based on a wet coil and clean filter. **Ratings based on a dry coil and/or no air filter shall not be acceptable.**

Option: Constant Volume (CV) EC variable speed ball bearing type motor. The CV EC fan motor shall provide soft starting, maintain constant CFM over its static operating range and provide airflow adjustment in 25 CFM increments via its control board. The fan motor shall be isolated from housing by rubber grommets. The motor shall be permanently lubricated and have thermal overload protection. A special dehumidification mode shall be provided to allow lower airflows in cooling for better dehumidification. The dehumidification mode may be constant or automatic (humidistat controlled).

CHASSIS

The chassis, which incorporates the air coil, water coil, drain pan with solid-state electronic condensate-overflow protection, compressor, and electrical components shall be easily installed for quick jobsite installation and future servicing purposes. The slide-in chassis shall have insulated panels surrounding the compressor. Compressors are not in the air stream. The chassis base shall be fabricated from heavy gauge galvanized steel formed to match the slide-in rails of the cabinet. Units shall have a factory-installed 1-inch (25.4-mm) thick filter bracket and throwaway type glass-fiber filter. Furnish one spare set of filters.

Option: Chassis can ship upright in any cabinet that risers are not attached.

Option: UltraQuiet package shall consist of the standard double isolation of the compressor plus sound attenuating compressor blanket applied to the compressor. All sheet metal surrounding the compressor shall have high density sound attenuating material with STC rating of 26 per ASTM E-90 and then covered with fiberglass insulation.

Option: Factory wired for communicating thermostat, requires AWC99U01 thermostat.

Option: Rib relay replaces contactor for models 06 through 18. Eliminates contactor "click" sound when first energized.

Option: vFlow: The unit will be supplied with internally factory mounted modulating water valve with delta T control. The factory built-in valve shall modulate water flow through unit based on a field adjustable water temperature difference between the entering and leaving water. The valve shall automatically adjust for operating mode, source water temperature and variations in external head pressure. The valve will also act as a shut-off valve to prevent water flow through the unit when the unit is not activated and will have a minimum position capability.

Option: Factory installed 3-way water valve. Valves are used on units at the end of a riser water loop to ensure continuous flow between supply and return riser stacks when those units are not in operation. This prevents excessive water flow and pressure drop through the coax when it is not in operation.

Option: Pre-Engineered Special: Internally factory mounted water loop strainer. Strainers filter water to ensure debris does not enter the unit coaxial heat exchanger. Debris in water loops can degrade thermal transfer (efficiency) and potentially limit water flow. Please consult SM IOM for proper care and maintenance of strainers when selecting this option.

Option: Pre-Engineered Special: Supply and Return P/T ports. Allows the for the water pressure drop to be checked across the heat exchanger which can be correlated to a fluid flow rate. Technicians can use this feature to determine if there is proper water flow through the unit.

Option: The unit will be supplied with internally factory mounted two-way motorized water valve (MWV) for variable speed loop pumping requirements. Valve to be fail closed type. The water circuit will have factory installed high-pressure switch located between MWV and heat exchanger.

Option: The unit will be supplied with internally factory mounted automatic water flow regulators.

Option: The unit will be supplied with internally factory mounted secondary pump rated for 200 PSIG applications.

Water connections between chassis and the cabinet shall be accomplished via a hose kit consisting of Kevlar-reinforced EPDM core hose surrounded by a stainless-steel braid. Hose kit shall have brass fittings with stainless-steel ferrules. AHU hose ends shall be Internal NPSH (National Pipe Straight Hose) swivel ends with EPDM washers which connect to mating threaded end connection on chassis and riser ball valve. The hose kit shall be rated for 400 psi (2,756 kPa) design working pressure.

REFRIGERANT CIRCUIT

All units shall contain an R-454B sealed refrigerant circuit including a high-efficiency scroll or rotary compressor designed for heat-pump operation, a thermostatic expansion valve for refrigerant metering, an enhanced corrugated aluminium lanced fin and rifled copper tube refrigerant to air heat exchanger, reversing valve, 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. Access fittings shall be factory installed on high- and low-pressure refrigerant lines to facilitate field service. Activation of any safety device shall prevent compressor operation via a microprocessor 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.**

Hermetic compressors shall be internally sprung and externally isolated. The compressor shall have a dual level vibration isolation system. The compressor will be mounted on specially engineered sound-tested EPDM vibration isolation grommets to a large heavy gauge compressor base pan, which is then isolated from the cabinet by resting on condensate drain pan which is isolated by grommets for maximized vibration attenuation. All units (except units with rotary compressors) shall include a discharge muffler to further enhance sound attenuation. Compressor shall have thermal overload protection.

Refrigerant to air heat exchangers shall utilize enhanced corrugated lanced aluminium fins and rifled copper tube construction rated to withstand 625 PSIG (4309 kPa) refrigerant working pressure. Copper hairpins are tin electroplated for added protection from formicary corrosion. **Units that do not have tin-plated hairpins shall not be acceptable.**

Refrigerant to water heat exchangers shall be of copper inner water tube and steel refrigerant outer tube design, rated to withstand 625 PSIG (4,309 kPa) working refrigerant pressure and 500 PSIG (3,445 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 1,000 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 120°F (-6.7° to 48.9°C). The 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.

Units charged with 62 ounces or greater of R-454B shall be supplied with a Refrigerant Detection System (RDS) with sensors to be strategically placed within the cabinet. In the event of a refrigerant leak, the RDS disables compressor operation, and the unit blower runs to disperse any concentration of leaked refrigerant in compliance with UL 60335-2-40 safety standards for flammable refrigerants. **Units charged with 62 ounces or greater of R-454B that do not have an RDS shall not be acceptable.**

Option: The unit will be supplied with non-plated air to refrigerant heat exchanger.

CABINET 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 1,000-hour salt spray test per ASTM B117. The drain pan will be isolated from cabinet with four EPDM vibration isolation grommets. 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. The drain pan shall be fully insulated. The drain pan shall have at a minimum a doubled sloped surface to allow positive drainage to the outlet opening, which shall be at the lowest level of the entire pan surface. The drain outlet shall be connected from pan outlet to condensate riser (if supplied) with factory installed trap inside of cabinet. The cabinet drain pan as standard will be supplied with solid-state electronic condensate-overflow protection. **Drain pans that are not isolated from cabinet shall not be acceptable. Mechanical float switches will NOT be accepted.**

Option: Stainless-steel drain pan

ELECTRICAL

A control compartment shall be located within the chassis and shall contain a 50VA transformer, 24V activated, 2-pole compressor contactor, relay 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 24V and provide heating or cooling as required by the remote thermostat/sensor. A control compartment shall be located within the cabinet and shall contain a terminal block for high-voltage connections. All electrical connections between the chassis and cabinet shall be made via locking quick-connects.

Option: Disconnect Switch, Non-Fused, classified as motor disconnect.

Option: Circuit Breaker, all 208/230V and 265V, 15 and 20 amp - HACR rated, 265V 25 amp and higher - supplemental rated.

ENHANCED SOLID STATE CONTROL SYSTEM (CXM2)

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 three times sequentially without thermostat meeting temperature, then lockout requiring manual reset will occur.
- j. Ability to defeat time delays for servicing.
- k. The low-pressure switch shall not be monitored for the first 120 seconds after a compressor start command to prevent nuisance safety trips.
- l. 24V output to cycle a motorized water valve or other device with compressor contactor.
- m. Unit Performance Sentinel (UPS). The UPS warns when the heat pump is running inefficiently.
- n. Water coil low-temperature sensing (selectable for water or anti-freeze).
- o. Air coil low-temperature sensing.

- p. 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).
- q. Emergency shutdown contacts.
- r. Entering- and leaving-water temperature sensing.
- s. Leaving-air temperature sensing.
- t. Compressor-discharge temperature sensing.

NOTE: Units not providing the eight 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.

When CXM2 is connected to AWC99U01 thermostat or handheld service tool, the installer/service technician can; check DIP Switch S2 settings; run operation modes manually; check all physical inputs from thermostat and refrigerant pressure switches status, (Y1, Y2, W, O, G, H, ESD, NSB, OR, HP switch, and LOC switch); current or at time of fault the following temperatures - water coil (LT1), air coil (LT2), compressor discharge, leaving air, leaving water, entering water and control voltage; record last five faults, list possible reasons, and clear faults. When the AWC99U01 communicating thermostat is used this same functionality can be viewed and adjusted remotely in the web portal or mobile app. **Systems not providing remote access, diagnosis, and adjustment functionality will not be accepted.**

ENHANCED SOLID STATE CONTROL SYSTEM (DXM2.5)

This control system is a communicating controller.

Control shall have the above-mentioned features of the CXM2 control system along with the following expanded features:

- a. Removable thermostat connector.
- b. Night setback control.
- c. Random start on return from night setback.

DIGITAL NIGHT SETBACK WITH PUMP RESTART (DXM2.5 W/ ATP32U03C/04C, AWC99U01)

- d. Override temperature control with 2-hour timer for room occupant to override setback temperature at the thermostat.
- e. Dry contact night setback output for digital night setback thermostats.
- f. Ability to work with heat pump or heat/cool (Y, W) type thermostats.
- g. Ability to work with heat pump thermostats using O or B reversing valve control.
- h. Boilerless system heat control at low loop water temperature.
- i. Ability to allow up to three units to be controlled by one thermostat.
- j. Relay to operate an external damper.
- k. Relay to start system pump.
- l. 75VA control transformer. The control transformer shall have load-side short circuit and overload protection via a built-in circuit breaker.

NOTE: Units not providing the eight 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 protection for both drain pans will not be accepted.

When DXM2.5 is connected to AWC99U01 communicating thermostat or handheld service tool, the installer/service technician can; check and set CFM; check DIP Switch S1, S2, and S3 settings; run operation modes manually; check all physical inputs from thermostat and refrigerant pressure switches status, (Y1, Y2, W, O, G, H, ESD, NSB, OR, HP switch, and LOC switch); current or at time of fault the following temperatures - water coil (LT1), air coil (LT2), compressor discharge, leaving air, leaving water, entering water and control voltage; record last five faults, list possible reasons, and clear faults. When the AWC99U01 communicating thermostat is used, this same functionality can be viewed and adjusted remotely with the portal or mobile app. **Systems not providing remote access, diagnosis, and adjustment functionality will not be accepted.**

The unit will be provided with a Digital Night Setback feature using an accessory relay on the DXM2.5 controller with an ATP32U03C/04C or AWC99U01 thermostat and an external, field-provided time clock. The external time clock will initiate and terminate the night setback period. The thermostat will have a night setback override feature with a programmable override time period.

An additional accessory relay on the unit DXM2.5 controller will energize the building loop pump control for the duration of the override period.

NOTE: This feature requires additional low voltage wiring. Consult Application Drawings for details.

REMOTE SERVICE SENTINEL (CXM2/DXM2.5)

The solid-state control system shall communicate with applicable thermostats 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, indicating a lockout. A detailed message shall be provided at the communicating thermostat or service tool 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: MPC (Multiple Protocol Control) Interface System

Units shall have all the features listed above (either CXM2 or DXM2.5) 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.

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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. High-/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 seven)

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

RETURN PANELS

The "G" return AR panel assembly shall be architecturally designed, acoustic type, with one-piece frame and hinged door for easy and quick access to filter. Assembly is attached to the cabinet with four bolts which can be easily removed for chassis access. The hinged return panel shall be made of heavy gauge die formed galvanized steel with a powder-coat finish in Polar Ice or special color. Return air panels that protrude from wall more than 5/8 inch (15.9 mm) are not acceptable.

Option: Return air panel painted Bright White color

Option: Pre-Engineered Special: Custom painting of return air panels per field specified color.

Option: "G" panel with mounting for ADA thermostat allows thermostat to be mounted low to comply with ADA height requirement.

Option: Pre-Engineered Special: Custom return air panel knock outs for ADA mounted 3rd party provided thermostats.

Option: Pre-Engineered Special: ADA return air panels with knock out moved lower. Needed when cabinets are placed on unit stands to comply with ADA maximum thermostat height.

Option: "G" panel with keyed locks - prevents users from tampering with units.

Option: Style "G" return air panel with frame for recessing cabinet behind finished wall.

Option: Motorized fresh air damper for "G" panel with frame - allows outside air to enter on right or left side.

Option: Flush Mounted "L" panel. Offered in Bright White and Polar Ice color option. Allows for chassis to be removed without removing the frame.

SUPPLY GRILLE(S)

Supply grille(s) shall be aesthetically pleasing brushed aluminium or powder-coated finish in Polar Ice color.

Option: Supply grille painted Bright White.

Option: Supply grille with double deflection style louvers.

Option: Supply grille with double deflection style louvers with opposed damper.

WARRANTY

ClimateMaster shall warranty equipment for a period of 12 months from startup or 18 months from shipping (whichever occurs first).

THERMOSTATS

- 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 CXM2/DXM2.5 control board for a total of 5 years.**

FIELD-INSTALLED OPTIONS

Hose Kits (required for field water connections):

Water connections between chassis and the cabinet shall be accomplished via a hose kit consisting of Kevlar-reinforced EPDM core hose surrounded by a stainless-steel braid. Hose kit shall have brass fittings with stainless-steel ferrules. The hose kit shall be rated for 400 psi (2,756 kPa) design working pressure. The AHU hose kits are required for each cabinet.

Cabinet Stands - ACST Series:

Cabinet stands are used when applications have baseboards with heights taller than 4 inches. Heavy 16-gauge galvanized steel construction, bolts to bottom of cabinet. Heights 1-inch (25 mm) to 13-inch (330 mm) by 1-inch (25 mm) increments. Ships in bulk for field attachment.

Option: Pre-Engineered Special: Cabinet stands factory assembled and attached to the cabinet.

Filters:

Pleated media disposable 1-inch (25-mm) thick MERV 8 or MERV 11, 2-inches (50 mm) thick MERV 8, MERV 11 or MERV 13.

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

NOTE: To achieve the full benefit of controls, use 2-speed thermostats (switch for manual or Y2 for automatic change).

a. Thermostat (Communicating) (AWC99U01)

An electronic communicating web-enabled touchscreen thermostat shall be provided. The thermostat shall offer three stages of heating and two stages of cooling with precise temperature control and have a four-wire connection to the unit. The thermostat shall be capable of manual or automatic change-over operation and shall operate in standard or programmable mode. An integrated humidity control feature shall be included to control a humidifier and/or a dehumidifier. The thermostat shall include a utility demand reduction feature to be initiated by an independent time program or an external input. The thermostat shall provide access to via the web portal or mobile application to include temperature adjustment, schedule adjustment including occupied/unoccupied, entering-water temperature, leaving-water temperature, water-coil temperature, air-coil temperature, leaving-air temperature, and compressor-discharge temperature. A graphical system layout to be provided with real-time operating mode information of the temperature sensors for easy diagnostics. The thermostat shall display system faults with probable cause and troubleshooting guidance. The system shall provide in clear language the last five faults, time of faults, operating temps at time of fault, and possible reasons for the fault. The thermostat shall provide access for immediate manual control of all outputs via the web portal/mobile application for rapid troubleshooting.

b. Single-Stage Digital Auto or Manual Changeover (ATA11U01)

The thermostat shall be a single-stage, digital, auto, or manual changeover with HEAT-OFF-COOL-AUTO system switch and fan ON-AUTO switch. The thermostat shall have an LCD display with temperature and setpoint(s) in °F or °C. The thermostat shall provide permanent memory of setpoint(s) without batteries. A fault LED shall be provided to display specific fault condition. The thermostat shall provide temperature display offset for custom applications.

c. Single Stage Digital Auto or Manual Changeover and Manual Two Fan Speed Selections (ATA11U03)

The thermostat shall be a single-stage, digital, auto or manual changeover with HEAT-OFF-COOL-AUTO system settings, high and low fan settings and fan ON-AUTO settings. The thermostat shall have an LCD display with temperature, setpoint(s), mode, and status indication. The temperature indication shall be selectable for °F or °C. The thermostat shall provide permanent memory of setpoint(s) without batteries. The thermostat shall provide heating setpoint range limit, cooling setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. The thermostat shall allow the use of an accessory remote-temperature sensor (17B0008N05). The thermostat navigation shall be accomplished via four buttons.

d. Multi-stage Digital Automatic Changeover (ATA22U01)

The thermostat shall be multi-stage (2H/2C), manual or automatic changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. The thermostat shall have an LCD display with temperature, setpoint(s), mode, and status indication. The temperature indication shall be selectable for °F or °C. The thermostat shall provide permanent memory of setpoint(s) without batteries. A fault LED shall be provided to indicate specific fault condition(s). The thermostat shall provide temperature display offset for custom applications. The thermostat shall allow unit to provide better dehumidification with optional DXM2.5 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. The thermostat can be configured to heat and cool even if in off mode (replaces night low limit switch (NLLS) in cabinet).

e. Multi-stage Manual Changeover Programmable 5/2 Day (ATP21W02)

The thermostat shall be 5-day/2-day programmable (with up to four setpoints per day), multi-stage (2H/1C), manual or automatic changeover with HEAT-OFF-COOL-EM HEAT system settings and fan ON-AUTO settings. The thermostat shall have an LCD display with temperature, setpoint(s), mode, and status indication. The temperature indication shall be selectable for °F or °C.

f. Multi-stage Automatic or Manual Changeover Programmable 7-Day (ATP32U03C)

The thermostat shall be 7-day programmable (with up to four setpoints per day), multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. The thermostat shall have a blue backlit dot matrix LCD display with temperature, setpoints, mode, and status indication. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12- or 24-hour clock. Fault identification shall be provided 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 setpoints without batteries. The thermostat shall provide heating-setpoint range limit, cooling-setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. The thermostat shall provide progressive recovery to anticipate the time required to bring space temperature to the next programmed event. The thermostat shall provide an installer setup for configuring options and for setup of servicing contractor name and contact information. The 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.

g. CM100 – Multi-stage Automatic or Manual Changeover digital thermostat (ATA32V01)

Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings. The thermostat shall have a green backlit LED display with temperature, setpoints, mode, and status indication via a green (cooling) or red (heating) LED. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12- or 24-hour clock. The thermostat shall provide permanent memory of setpoints without batteries. The thermostat shall provide heating-setpoint range limit, cooling-setpoint range limit, temperature display offset, keypad lockout, dead-band range setting, and inter-stage differential settings. The thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. The thermostat shall provide an installer setup for configuring. Thermostat navigation shall be accomplished via four buttons (Mode/fan/down/up) with menu-driven selections for ease of use and programming.

h. CM300 – Multi-stage, Automatic or Manual Changeover, 7-day Programmable with Wi-Fi and Humidity Control (AVB32V02C/R)

The commercial version shall be 7-day programmable with four occupied/unoccupied periods per day with up to 4-hour override. Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings, Wi-Fi, pre-occupancy purge fan option, nighttime control of display backlight, bi-color LED indicates a heating or cooling demand, keypad lock, title 24 compliant, openADR2.0b certified with Skyport web portal. Compatible with condensate-overflow warning systems – lockout compressor with message on.

i. CM500 – Color-Touchscreen Display, Multi-stage, Automatic or Manual Changeover, 7-day Programmable with Wi-Fi and Humidity Control (AVB32V03C/R)

The thermostat shall have color-resistive touchscreen display with space temperature, relative humidity, setpoints, mode, status indication and local weather (if connected to Wi-Fi). The residential version shall be 7-day programmable with up to four setpoints per day. The commercial version shall be 7-day programmable with four occupied/unoccupied periods per day with up to 4-hour override. Multi-stage (3H/2C), automatic or manual changeover with HEAT-OFF-COOL-AUTO-EM HEAT system settings and fan ON-AUTO settings, Wi-Fi, pre-occupancy purge fan option, customizable screen saver and background displays, indicator-on display indicates a heating or cooling demand, set-point lock, title 24 compliant, openADR2.0b certified with Skyport web portal. Compatible with condensate-overflow warning systems – lockout compressor with message on the display. Capable of being monitored by third-party software. Compatible with AST014 Wi-Fi remote sensor. Configurator mobile app or web portal for easy setup. Separate dehumidification and humidification setpoints shall be configurable for discreet outputs to a dehumidification option and/or an external humidifier. The temperature indication shall be selectable for °F or °C. Time display shall be selectable for 12- or 24-hour clock. The thermostat shall provide permanent memory of setpoints without batteries.

The thermostat shall provide heating setpoint-range limit, cooling setpoint-range limit, temperature display offset, dead-band range setting, and inter-stage differential settings. The thermostat shall provide progressive recovery to anticipate time required to bring space temperature to the next programmed event. The thermostat shall provide access to a web portal and mobile app for installer setup for configuring options. The thermostat shall have menu-driven selections for ease-of-use and programming.

DDC SENSORS

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

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

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Revision History

Models:
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Date	Section	Description
03/06/2024	All	Created



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