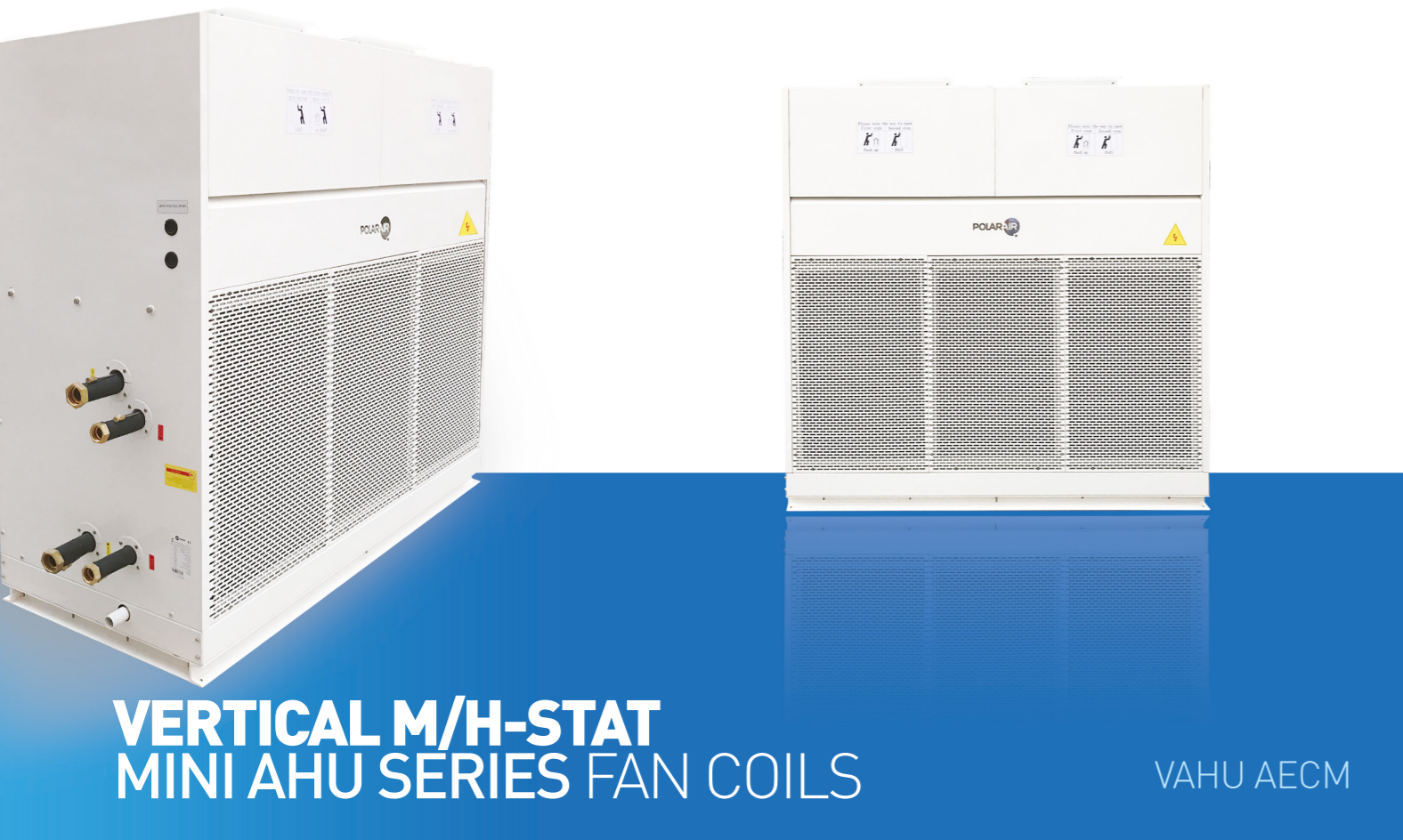


**ECO H-STAT SERIES
VERTICAL MINI AIR
HANDLING UNIT
DUCTED FAN COILS**

MODEL VAHU-AECM

NEW PRODUCT



VERTICAL M/H-STAT MINI AHU SERIES FAN COILS

VAHU AECM

Product Presentation

The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan coils have been designed for installation in suspended ceilings or any application where high CFM, ductable units are needed.

With internal insulation panel, this product range is distinguished by its compact design and low noise level.

Product Range

The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan Coils are available in the following capacities:

- **5 sizes of 2 pipe, 4 row models from 14.6kW to 55kW (49817 BTU/H to 187668 BTU/H) cooling capacity and 16.7kW to 63.6kW (56983 BTU/H to 217012 BTU/H) heating capacity.**
- **5 sizes of 4 pipe models from 14.6kW to 55kW (49817 BTU/H to 187668 BTU/H) cooling capacity and 21kW to 76.2kW (71655 BTU/H to 260005 BTU/H) heating capacity.**

Product Features

• **Energy Efficiency.** The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan coils incorporate a DC motor with step-less speed modulation using an integrated EC motor driver.

Energy saving or unit power input at set H/M/L speeds is reduced by 30 - 50% when compared to traditional on/off AC motors. Moreover, in Energy Saving Auto - Mode (ESM), as airflow is continuously varied (step-less progression) between 15% and 100% of the maximum high speed airflow, energy saving will be 50 - 70% while precisely meeting the required cooling and heating loads of the space.

This innovation eliminates the need for the motor to turn off and on periodically to maintain the desired temperature of the environment, leading to total energy savings of up to 50% on an installation/project basis. Modulation of airflow to meet heating and cooling requirements of the space will also result in reducing temperature fluctuations within the space, as well as reducing fan noise.

The motor is driven by a 0 - 10 VDC signal originating

from an inverter board integrated into the unit onboard controller, which utilizes PID logic in order to modulate motor RPMs in Energy Saving Auto - Mode (ESM).

• **Filter.** G4 filters for air filtration compliant with EN779 standard positioned at intake.

• **Framework.** The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan coils have been designed with a 1 inch (25mm) thickness sandwich panel with 2.5lbs/ft³ (40kg/m³) density polyurethane. The intake panel is equipped with a flange for connection to ducting.

• **Drain Pump and fan motor.** Double intake centrifugal fans with forward blades matched to EC motor. Insulated aluminum condensate drain pan is standard.

• **Flexibility for maintenance.** The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan coils are available with left or right side coil connections to maximize product flexibility and easiness of installation.

Standard Configuration

The ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan Coils offer as standard 1 inch (25mm) Nylon Mesh Filter, and option to choose left or right side coil connections.

Control Options *

Two control configuration options are offered for the ECO H-STAT Series Vertical Mini Air Handling Unit Ducted Fan Coils.

• **Total Control Board (S type)** - Field Programmable using easy to set dials and controlled via Infra-red handset and/or wired wall pad. It offers the following control options: continuous with modulation or On/Off fan, 2 or 4 Pipe configuration, with or without valves, with or without electrical heater, preheat configuration, complete diagnostics.

Our S type controller also allows control of up to 32 Secondary units via a single Main Unit with IR Handset or Wall Pad controller, and up to 2048 units via BMS (Building Management System) with Modbus platform.

• **Flexi Control Board (W type)** - 24 VAC controller compatible with wired wall mounted thermostat, and on-off or modulating fan control. Control of supply air louvers, integral condensate pump (pump is optional), zone valves (24V or modulating), and limited LED diagnostics is included.*

* Modulating fan control via 0-10 VDC signal provided by BMS (BMS by others).

**ECO H-STAT SERIES
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DUCTED FAN COILS**

MODEL VAHU-AECM

Product Accessories

CONTROL ACCESSORIES



INFRA-RED HANDSET CONTROLLER + WALL HOLDER

(AVAILABLE ONLY FOR TOTAL CONTROL BOARD)

With Global Control functionality for Main and Secondary Unit groups.



ABS EXTERNAL LED RECEIVER

IR receiver in ABS housing with 70 inches length prewiring, which can be connected with S Type controls only. LED lights show working mode or error code.



UNLIMITED WIRED WALL PAD CONTROLLER

(AVAILABLE ONLY FOR TOTAL CONTROL BOARD)

Features: 7 day ON/OFF timer program. Addressable Main and Secondary units allowing control of up to 32 Secondary units via a single Main Unit with set or check of each unit parameters individually. Error display with addressable error diagnostic (Main unit Wall Pad displays Secondary unit address and error type). One Touch Global Control (Global Control Main Unit Wall Pad controls all units in the group). Onboard Room Air Temperature Sensor.



DIP SWITCH CONFIGURATION SERVICE

Preset Dip switch configuration for addressing Main Unit to Secondary Units. Dip Switch configuration labelled with carton tag.



UNIVERSAL EC THERMOSTAT

(FOR FLEXI CONTROL BOARD)

Main functions: 2-pipe, 4-pipe, 2-pipe +floor heating mode, floor heating, cooling. AC/EC motor 3-speed control. Motorized valve control. 0-10 VDC Modulating valve. EC motor RPM control. Low temperature protection. Remote ON/OFF function. Cooling and heating contact. Modbus protocol. Power supply: 24 Vac or VDC. Working environment: 0-50°C, 5-95%RH (no condensate). Self-power consumption: <2W. Protection class: IP30.

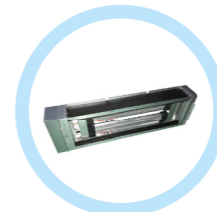


STCD SERIES THERMOSTATS

(FOR FLEXI CONTROL BOARD)

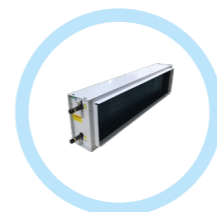
Please visit www.sonkor.com for further information on our STCD thermostat range.

MORE ACCESSORIES



ELECTRICAL HEATERS

Modular electrical heater is available. Please see Technical Manual for further information.



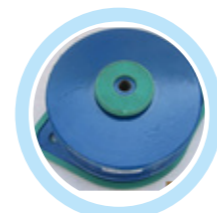
AUXILIARY HEATING COILS

Factory installed heating coil for 4 pipe applications.



VALVES AND VALVE KITS

2-way On/Off or 3-way bypass ball valves, 24VAC modulating actuators. Stainless Steel Hose and Copper Piping Connection Kits for 2-way and 3-way valve options.



RUBBER ANTIVIBRATION MOUNTS

ECO H-STAT SERIES
VERTICAL MINI AIR
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DUCTED FAN COILS

MODEL VAHU-AECM

Technical Specifications (AHRI Standards)

VAHU (4R) V-AECM - Hydronic Vertical Mini Air Handling Ducted Unit 4-row coil, 2-pipe with EC Motor.

UNIT CONFIGURATION		VAHU(4R)-[Size]-V-AECM		200	300	400	600	800	
		Configuration		2-pipe					
		Number of Fan Blowers		Single			Twin		
		Power Supply		[V/Ph/Hz]		220 / 1 / 60			
		Operation Control		S Type: Total control version. W Type: Flexible control version.					
PERFORMANCE DATA	Air	Total AirFlow	H 3	1177	1766	2354	3531	4709	
			M 2	1001	1501	2001	3002	4002	
			L 1	706	1059	1413	2119	2825	
		External Static Pressure	H 3	0.6					
			M 2	0.6					
	L 1		0.6						
	Cooling	Cooling Capacity	H 3	49817	68925	93493	138874	187668	
			M 2	43334	60054	81550	120790	163442	
			L 1	31699	44358	60054	89398	120790	
		Sensible Cooling Capacity	H 3	34804	49135	66196	98270	132050	
			M 2	29959	42652	57324	85304	114307	
			L 1	21804	31187	41969	62442	83597	
	Heating	Heating Capacity	H 3	56983	82574	110212	162759	217012	
			M 2	48794	71314	95199	140580	187668	
			L 1	35486	51865	69266	102364	136827	
		Max. Elec. Heater Capacity	kW	4	6	9	12	15	
	Sound	Sound Pressure Level (outlet)	dB(A)	62	66	72	71	75	
		Sound Power Level (outlet)*	dB(A)	71	75	81	80	84	
	Electrical	Maximum Power Input	W	375	500	500	1000	1000	
		Fan Motor Running Current	A	1.63	2.17	2.17	4.34	4.34	
Hydraulic	Water Flow Rate	3	11.0	15.2	20.7	30.8	41.6		
		2	9.6	13.3	18	26.8	36.2		
		1	7	9.8	13.3	19.8	26.7		
	Cooling Pressure Drop	3	6.6	1.9	3.7	8.3	16.5		
		2	5	1.5	2.9	6.6	12.9		
		1	2.9	0.9	1.7	3.9	7.6		
	Heating Water Flow Rate	GPM	Same as "Water Flow Rate"						
	Heating Pressure Drop	3	5.3	1.6	3.1	6.9	13.8		
		2	4.1	1.2	2.4	5.4	10.7		
		1	2.4	0.7	1.4	3.2	6.3		
Water Content	Gal	1.7	2.2	2.7	3.2	3.9			
CONSTRUCTION AND PACKING DATA	Water Connections	Type	NPT Threaded female						
		In	1 1/4"						
	Out	in							
	Condensate Drainage Connection	in	1"						
	Dimensions	L	33 7/16	41 3/16	49 3/16	61	74		
W		26 3/8							
H		59 7/16							

* Product dimensions are within ± 1/16 inches.

*1 Sound Power in compliance with EN9614-2

Cooling mode (2-pipe/ 4-pipe):

Return air temperature: 80F DB/ 67F WB.
Inlet/ outlet water temperature: 45F/ 55F.

Heating mode (2-pipe):

Return air temperature: 70F.
Inlet water temperature: 140F.
Water flow-rate: same as 2-pipe cooling.

Technical Specifications (AHRI Standards)

VAHU (6R) V-AECM - Hydronic Vertical Mini Air Handling Ducted Unit 6-row coil, 2-pipe with EC Motor.

UNIT CONFIGURATION		VAHU(6R)-[Size]-V-AECM		200	300	400	600	800	
		Configuration		2-pipe					
		Number of Fan Blowers		Single			Twin		
		Power Supply		[V/Ph/Hz]		220 / 1 / 60			
		Operation Control		S Type: Total control version. W Type: Flexible control version.					
PERFORMANCE DATA	Air	Total AirFlow	H 3	1177	1766	2354	3531	4709	
			M 2	1001	1501	2001	3002	4002	
			L 1	706	1059	1413	2119	2825	
		External Static Pressure	H 3	0.5					
			M 2	0.5					
	L 1		0.5						
	Cooling	Cooling Capacity	H 3	53912	80527	107482	148769	200293	
			M 2	46746	69949	93151	128979	173678	
			L 1	33917	50841	67902	94858	127614	
		Sensible Cooling Capacity	H 3	36510	54935	73020	103729	138874	
			M 2	31869	47770	63466	90081	120790	
			L 1	22998	34463	46064	65513	87692	
	Heating	Heating Capacity	H 3	64831	96564	128297	185621	247380	
			M 2	51523	77114	102364	148769	198245	
			L 1	36851	55277	73361	107482	143310	
		Max. Elec. Heater Capacity	kW	4	6	9	12	15	
	Sound	Sound Pressure Level (outlet)	dB(A)	70	75	77	78	80	
		Sound Power Level (outlet)*	dB(A)	79	84	86	87	89	
	Electrical	Maximum Power Input	W	375	500	500	1000	1000	
		Maximum Current	A	1.63	2.17	2.17	4.34	4.34	
Hydraulic	Water Flow Rate	3	11.9	17.8	23.8	32.9	44.4		
		2	6.9	15.5	20.7	28.6	38.5		
		1	7.5	11.3	15	21	28.2		
	Cooling Pressure Drop	3	3.7	8.6	15.9	4.6	8.9		
		2	2.4	5.6	10.3	3	5.8		
		1	1.4	3.2	5.9	1.8	3.4		
	Heating Water Flow Rate	GPM	Same as "Water Flow Rate"						
	Heating Pressure Drop	3	2.5	5.9	11	3.2	6.2		
		2	2	4.6	8.6	2.5	4.8		
		1	1.1	2.6	4.9	1.4	2.8		
Water Content	Gal	2.4	3	3.6	4.2	5			
CONSTRUCTION AND PACKING DATA	Water Connections	Type	NPT Threaded female						
		In	1 1/4"						
	Out	in							
	Condensate Drainage Connection	in	1"						
	Dimensions	L	33 7/16	41 3/16	49 3/16	61	74		
W		26 3/8							
H		59 7/16							

* Product dimensions are within ± 1/16 inches.

*1 Sound Power in compliance with EN9614-2

Cooling mode (2-pipe/ 4-pipe):

Return air temperature: 80F DB/ 67F WB.
Inlet/ outlet water temperature: 45F/ 55F.

Heating mode (2-pipe):

Return air temperature: 70F.
Inlet water temperature: 140F.
Water flow-rate: same as 2-pipe cooling.

ECO H-STAT SERIES
VERTICAL MINI AIR
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DUCTED FAN COILS

MODEL VAHU-AECM

Technical Specifications (AHRI Standards)

VAHU (4R+2) P-AECM - Hydronic Vertical Mini Air Handling Ducted Unit 4+2-row coil, 4-pipe with EC Motor.

UNIT CONFIGURATION		VAHU(4R+2)-[Size]-P-AECM		200	300	400	600	800	
		Configuration		4-pipe					
		Number of Fan Blowers		Single			Twin		
		Power Supply [V/Ph/Hz]		220 / 1 / 60					
Operation Control		S Type: Total control version. W Type: Flexible control version.							
PERFORMANCE DATA	Air	Total AirFlow	H 3	CFM	1177	1766	2354	3531	4709
			M 2	1001	1501	2001	3002	4002	
			L 1	706	1059	1413	2119	2825	
		External Static Pressure	H 3	in.wg	0.5				
			M 2	0.5					
			L 1	0.5					
	Cooling	Cooling Capacity	H 3	BTU/Hr	49817	68925	93493	138874	187668
			M 2	43334	60054	81550	120790	163442	
			L 1	31699	44358	60054	89398	120790	
		Sensible Cooling Capacity	H 3	34804	49135	66196	98270	132050	
			M 2	29959	42652	57324	85304	114307	
			L 1	21804	31187	41969	62442	83597	
	Heating	Heating Capacity	H 3	BTU/Hr	71655	106118	140580	195175	260005
			M 2	62783	92810	123178	171631	228613	
			L 1	47088	69949	92810	129661	172654	
	Sound	Sound Pressure Level (outlet)		dB(A)	70	75	77	78	80
		Sound Power Level (outlet)*			79	84	86	87	89
	Electrical	Maximum Power Input		W	375	500	500	1000	1000
		Fan Motor Running Current		A	1.63	2.17	2.17	4.34	4.34
	Hydraulic	Cooling Water Flow Rate	3	GPM	11.0	15.2	20.7	30.8	41.6
			2	9.6	13.3	18	26.8	36.2	
			1	7	9.8	13.3	19.8	26.7	
		Cooling Pressure Drop	3	FL.Hd	6.6	1.9	3.7	8.3	16.5
			2	5	1.5	2.9	6.6	12.9	
1			2.9	0.9	1.7	3.9	7.6		
Hot Water Flow Rate		3	GPM	7.9	11.8	15.6	21.7	28.8	
		2	7	10.3	13.7	19	25.3		
		1	5.2	7.7	10.3	14.4	19.1		
Hot Pressure Drop		3	FL.Hd	1.4	3.2	6	1.8	3.4	
		2	1.1	2.5	4.8	1.4	2.7		
		1	0.7	1.5	2.9	0.8	1.6		
Cooling Water Content		Gal	1.7	2.2	2.7	3.2	3.9		
Hot Water Content		Gal	0.8	1.1	1.3	1.6	2		
CONSTRUCTION AND PACKING DATA	Cooling Water Connections	Type		NPT Threaded female					
		In	in	1 1/4"					
	Heating Water Connections	In	in	1"					
		Out	in	1"					
	Condensate Drainage Connection		in	1"					
	Dimensions	L	in	33 7/16	41 7/16	49 7/16	61	74	
W		in	26 7/8						
H		in	59 7/16						

* Product dimensions are within ± 1/16 inches.

*1 Sound Power in compliance with EN9614-2

Cooling mode (2-pipe/ 4-pipe):

Return air temperature: 80F DB/ 67F WB.
 Inlet/ outlet water temperature: 45F/ 55F.

Heating mode (4-pipe):

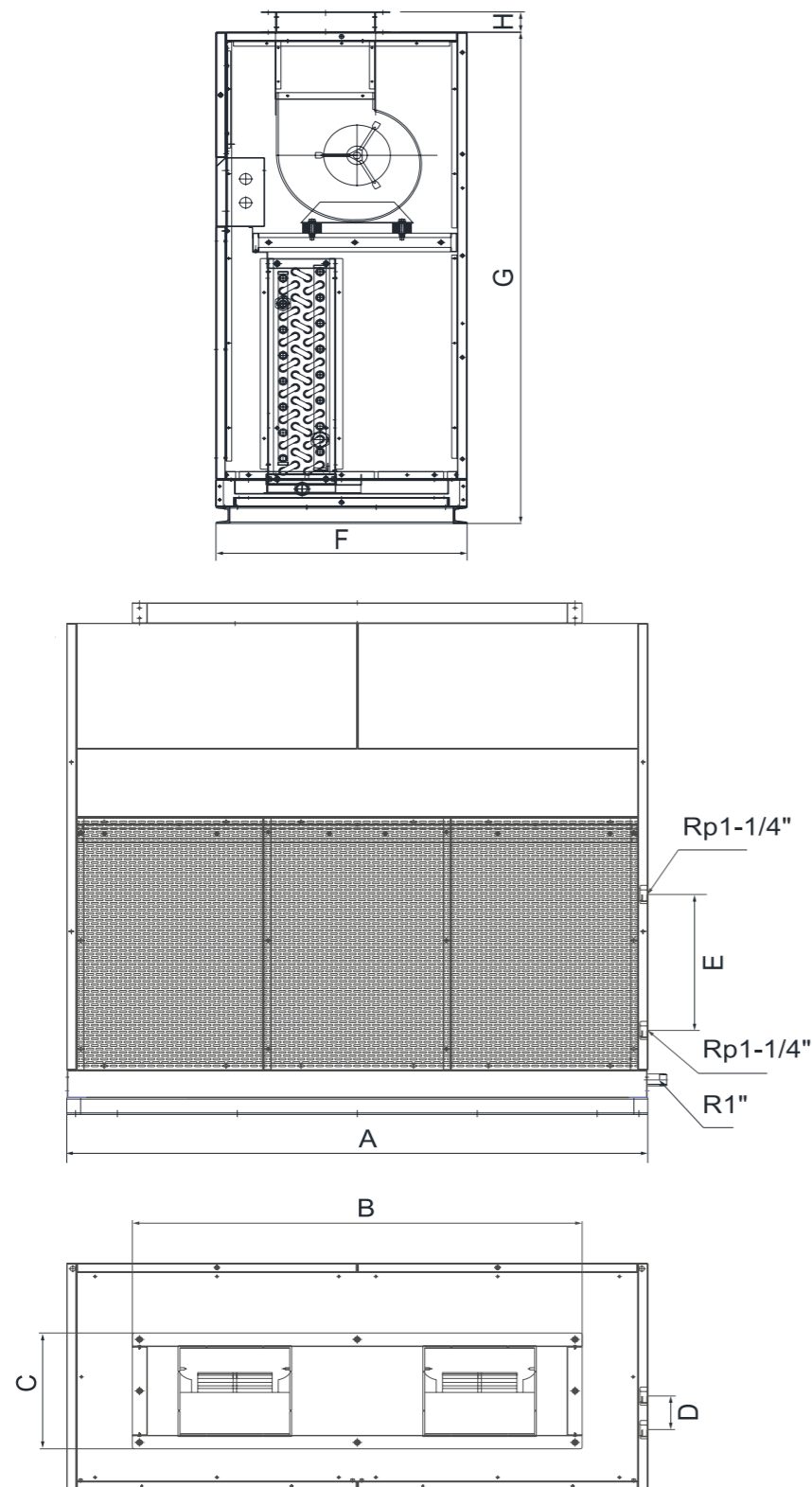
Return air temperature: 70F.
 Inlet water temperature: 180F.
 Outlet water temperature: 140F.



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MODEL VAHU-AECM

Dimensional Drawings VAHU AECM (4R), 2 Pipe Models



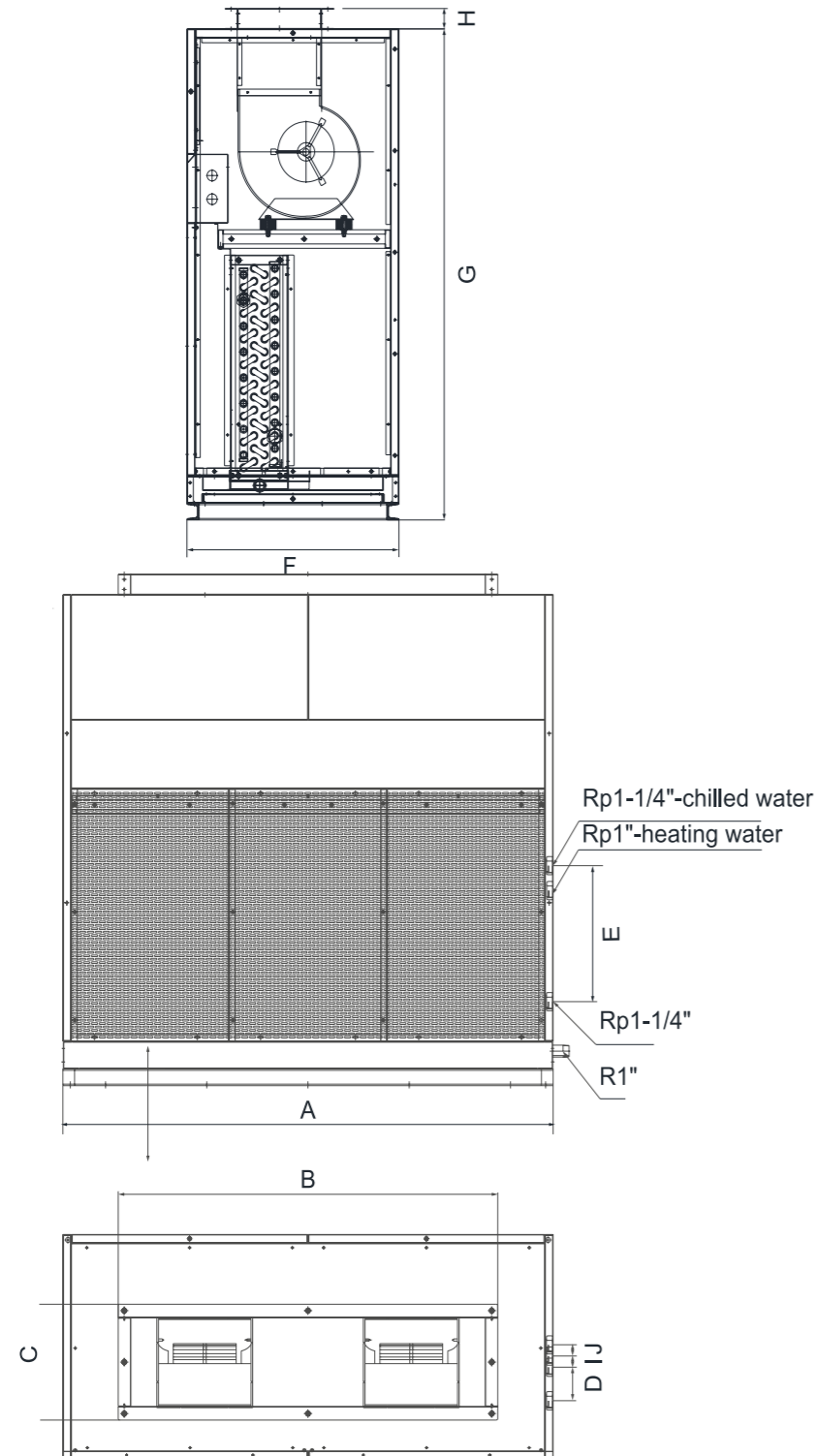
Model	Unit Dimensions (inches)							
	A	B	C	D	E	F	G	H
VAHU-200-V	33 ⁷ / ₁₆	21 ⁴ / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈
VAHU-300-V	41 ⁵ / ₁₆	26 ¹² / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈
VAHU-400-V	49 ³ / ₁₆	30 ¹¹ / ₁₆	14 ¹⁰ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈
VAHU-600-V	61	47 ⁴ / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈
VAHU-800-V	74	53 ² / ₁₆	14 ¹⁰ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈

* Product dimensions are within ± 1/16 inches.

ECO H-STAT SERIES
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MODEL VAHU-AECM

Dimensional Drawings VAHU AECM (4+2R), 4 Pipe Models



Model	Unit Dimensions (inches)									
	A	B	C	D	E	F	G	H	I	J
VAHU-200-P	33 ⁷ / ₁₆	21 ⁴ / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆
VAHU-300-P	41 ⁵ / ₁₆	26 ¹² / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆
VAHU-400-P	49 ³ / ₁₆	30 ¹¹ / ₁₆	14 ¹⁰ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆
VAHU-600-P	61	47 ⁴ / ₁₆	13 ⁷ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆
VAHU-800-P	74	53 ² / ₁₆	14 ¹⁰ / ₁₆	3 ⁷ / ₈	15 ¹³ / ₁₆	26 ³ / ₈	57 ¹ / ₁₆	2 ³ / ₈	1 ⁵ / ₁₆	1 ⁵ / ₁₆

* Product dimensions are within ± 1/16 inches.