

ECO HIGH WALL SERIES HIGH WALL EC MOTOR FANCOILS

MODEL SWC-AECM
MODEL SWC-Y-AECM



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SWC AECM
SWC Y-AECM

Product Presentation

High Wall Fan Coils were invented by Sonkor as the solution in applications where ducted fan coil units will not work, such as spaces without lowered ceilings or where floor space is not preferred for installation. The motorized adjustable louvers on the front of the unit allow for airflow control in heating and cooling modes. With a wide range of product sizes, simplicity of installation and ease of maintenance, High Wall Fan Coils are commonly used in residential and commercial installations for cooling and heating applications.

Sonkor Global ECO Highwall Fan Coil Series is the result of 20 years of product development experience, understanding world market requirements, and applying the technical innovation required to satisfy the most demanding specifications.

Product Range

The ECO High Wall Series offers an EC motor range of 115V/60Hz (SWC-Y-AECM) with cETLus approval and an EC motor range of 220V/60Hz (SWC-AECM), both ready for 24V thermostats and 24V valves, with the following capacities:

- **5 sizes of 2-pipe from 4500 BTU (1.31kW) to 15000 BTU (4.38kW) cooling capacity.**
- **3 sizes of 2-pipe from 15700 BTU (4.60kW) to 22500 BTU (6.60k) cooling capacity.**
- **4-pipe range available with 4x2 Conversion Valve Kits from Cooling Capacity: 4500 BTU (1.31kW) to 22500 BTU (6.60kW) Heating: 5400 BTU (6.1kW) to 16300 BTU (6.9kW). For this option please contact your nearest sales office to get more information.**

Product Features

• **Energy Efficiency.** The ECO High Wall Series Fan Coils incorporate a DC motor with variable 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 - 5 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).

• **Flexibility.** The ECO High Wall Series Fan Coils offer an integrated 2-way or 3-way valve (on/off with thermoelectric actuators) for all sizes, along with pre-configuration for 4x2 switching device (optional), and 4-pipe control logic available by DIP switch setting. It also features Universal EC motors with adjustable RPMs by DIP Switch setting as well as Universal Control Boards with the same dimensions for the full range.

• **Low Sound.** The ECO High Wall Series Fan Coil series has been configured to minimize noise output with the smallest unit producing 38 d(B)A at high speed and the largest unit producing 59 d(B)A at high speed.

• **Design.** The ECO High Wall Series Fan Coil has an Elegant and Modern design. It has a flat front panel, LED display, and all capacities come housed in one of two cabinet sizes, which allows consistency and uniformity on projects where multiple units are required.

- 5 sizes with the only one dimension: 34½ x 9 x 12 inches (876 x 228 x 300mm).
- 3 sizes with only one dimension: 42 x 9½ x 12¼ inches (1063 x 240 x 310mm).

Standard Configuration

The ECO High Wall Series Fan Coil comes with standard stainless steel insulated flexible hoses for connection to supply and return water pipes, nylon NET Filter, swing motor, LED display and Controls compatible for 24V thermostats and 24V valve connections.

Control Options

The ECO High Wall Series Fan Coils offer 2 different control possibilities to satisfy specific applications.

• **Total Control Board (S type)** – Field Programmable using easy to set dipswitches and controlled via Infra-red handset and/or wired wall pad. It includes a 24V signal for modulating valve controls and 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 and complete diagnostics. It 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.

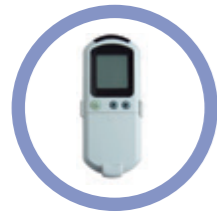
• **Flexi Control Board (W type)** – Flexible function control for External Thermostat applications including a 24V signal for modulating valve controls, with control of Drain Pump, Louvers, Zone Control product operations, and limited LED diagnostics.

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Product Accessories

CONTROL ACCESSORIES



INFRA-RED HANDSET CONTROLLER + WALL HOLDER

(AVAILABLE ONLY FOR TOTAL CONTROL BOARD)

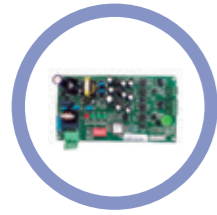
With Global Control functionality for Main and Secondary Unit groups.



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). Multi-color backlight display. Onboard Room Air Temperature Sensor.



DATA LOGGER CONTROL FOR MODBUS BMS CONNECTION

(AVAILABLE ONLY FOR TOTAL CONTROL BOARD)

1 Data Logger will control up to 32 units. Up to 64 Data Loggers can be connected to one single system to control a maximum of 2048 fan coils by BMS.



MOD32 OPEN SOFTWARE

Open Software for OPEN MODBUS (32-bit) with Sonkor Installation Guide.



DIP SWITCH CONFIGURATION SERVICE

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



EXTERNAL CONNECTION PLUGS

Factory prewired units with external accessory plugs for fast and easy connections.

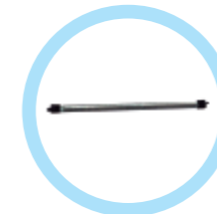


STCD SERIES THERMOSTATS

(FOR FLEXI CONTROL BOARD)

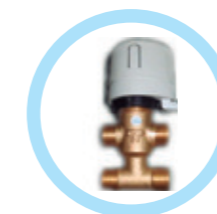
Please visit www.sonkor.com for further information on our STCD thermostat range.

MORE ACCESSORIES



ELECTRICAL HEATERS

With 2-stage safety cut-out and can be configured as booster heaters or primary heaters.



VALVES + VALVE KITS

2-way On/Off or 3-way bypass valves, 1/2" sizes with thermoelectric or 24Vac modulating Actuators.



CONDENSATE REMOVAL PUMP

Self-contained condensate removal system for use directly inside the high wall.

Technical Specifications (AHRI Standards)

SWC-AECM-V~ Hydronic High Wall 2-pipe with EC Motor.

UNIT CONFIGURATION		SWC-AECM-[Size]-V		04	06	12	15	18	20	24	30			
		Configuration		2-pipe										
		Number of Fan Blowers		Single										
		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	CFM	218	294	294	379	515	541	635	729		
			M	171	218	218	262	435	447	447	635			
			L	129	171	171	218	335	353	353	447			
	Cooling	Cooling Capacity	H	BTU/H	4158	6967	8394	10207	12602	16293	18174	20249		
			M		3497	5534	6277	8394	11069	13254	16293	17493		
			L		2833	4620	5486	6339	9040	11393	11393	13254		
		Sensible Cooling Capacity	H	2936	4889	5822	7126	8808	11171	12499	13969			
			M	2458	3856	4313	5822	7702	9034	11171	12018			
			L	1979	3202	3754	4357	6247	7734	7734	9034			
	Heating	Heating Capacity	H	BTU/H	6653	11147	13430	16331	20163	26069	29078	32398		
			M		5595	8854	10043	13430	17710	21206	26069	27989		
			L		4533	7392	8778	10142	14464	18229	18229	21206		
		Max. Elec. Heater Cap.	3400											
	Sound	Sound Pressure Level [Outlet]	dB(A)		31/26/24	39/31/26	40/33/28	45/34/31	49/44/37	43/39/36	47/43/37	50/47/40		
		Sound Power Level [Outlet]	dB(A)		40/35/33	48/40/35	49/42/37	54/43/40	58/53/46	52/48/45	56/52/46	59/56/49		
	Electrical	Fan Motor Power	H	W	13	18	18	26	30	30	40	50		
			M		10	13	13	20	20	30	40			
			L		6	10	10	13	13	15	19	25		
		Fan Motor Running Current	H	A	0.08	0.142	0.142	0.182	0.272	0.348	0.52	0.75		
	Hydronic	Cooling Water Flow Rate	H	GPM	0.83	1.39	1.68	2.03	2.52	3.25	3.63	4.04		
			M		0.70	1.10	1.25	1.68	2.20	2.65	3.25	3.49		
L			0.56		0.92	1.09	1.26	1.81	2.27	2.27	2.65			
Cooling Pressure Drop		H	ft.wg	6.18	7.53	6.37	8.92	6.12	11.92	14.33	17.33			
		M		4.61	5.09	3.88	6.37	4.91	8.33	11.92	13.42			
		L		3.23	3.75	3.09	3.95	3.48	6.47	6.47	8.33			
		Heating Water Flow Rate @ H/M/L	Same as "Cooling Water Flow Rate"											
Heating Pressure Drop		H	ft.wg	4.95	6.03	5.09	7.13	4.89	9.53	11.47	13.87			
		M		3.69	4.07	3.11	5.09	3.93	6.67	9.53	10.73			
	L	2.58		3.00	2.47	3.16	2.79	5.17	5.17	6.67				
	Water Content	Gal		0.01	0.02	0.03	0.03	0.05	0.07	0.07	0.07			

Cooling mode (2-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)

SWC-Y-AECM-V~ Hydronic High Wall 2-pipe with EC Motor.



UNIT CONFIGURATION		SWC-Y-AECM-[Size]-V		04	06	12	15	18	20	24	30			
		Configuration		2-pipe										
		Number of Fan Blowers		Single										
		Power Supply		[V/Ph/Hz]		115 / 1 / 60								
		Operation Control		S Type: Total control version. W Type: Flexible control version.										
PERFORMANCE DATA	Air	Total AirFlow	H	CFM	218	294	294	379	515	541	635	729		
			M	171	218	218	262	435	447	447	635			
			L	129	171	171	218	335	353	353	447			
	Cooling	Cooling Capacity	H	BTU/H	4158	6967	8394	10207	12602	16293	18174	20249		
			M		3497	5534	6277	8394	11069	13254	16293	17493		
			L		2833	4620	5486	6339	9040	11393	11393	13254		
		Sensible Cooling Capacity	H	2936	4889	5822	7126	8808	11171	12499	13969			
			M	2458	3856	4313	5822	7702	9034	11171	12018			
			L	1979	3202	3754	4357	6247	7734	7734	9034			
	Heating	Heating Capacity	H	BTU/H	6653	11147	13430	16331	20163	26069	29078	32398		
			M		5595	8854	10043	13430	17710	21206	26069	27989		
			L		4533	7392	8778	10142	14464	18229	18229	21206		
		Max. Elec. Heater Cap.	1700											
	Sound	Sound Pressure Level [Outlet]	dB(A)		31/26/24	39/31/26	40/33/28	45/34/31	49/44/37	43/39/36	47/43/37	50/47/40		
		Sound Power Level [Outlet]	dB(A)		40/35/33	48/40/35	49/42/37	54/43/40	58/53/46	52/48/45	56/52/46	59/56/49		
	Electrical	Fan Motor Power	H	W	13	18	18	26	30	30	40	50		
			M		10	13	13	20	20	30	40			
			L		6	10	10	13	13	15	19	25		
		Fan Motor Running Current	H	A	0.16	0.284	0.284	0.364	0.544	0.696	1.04	1.5		
	Hydronic	Cooling Water Flow Rate	H	GPM	0.83	1.39	1.68	2.03	2.52	3.25	3.63	4.04		
			M		0.70	1.10	1.25	1.68	2.20	2.65	3.25	3.49		
L			0.56		0.92	1.09	1.26	1.81	2.27	2.27	2.65			
Cooling Pressure Drop		H	ft.wg	6.18	7.53	6.37	8.92	6.12	11.92	14.33	17.33			
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		L		3.23	3.75	3.09	3.95	3.48	6.47	6.47	8.33			
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		M		3.69	4.07	3.11	5.09	3.93	6.67	9.53	10.73			
	L	2.58		3.00	2.47	3.16	2.79	5.17	5.17	6.67				
	Water Content	Gal		0.01	0.02	0.03	0.03	0.05	0.07	0.07	0.07			

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

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

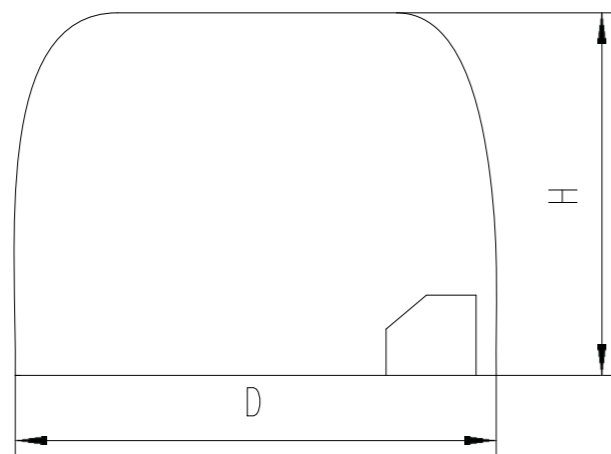
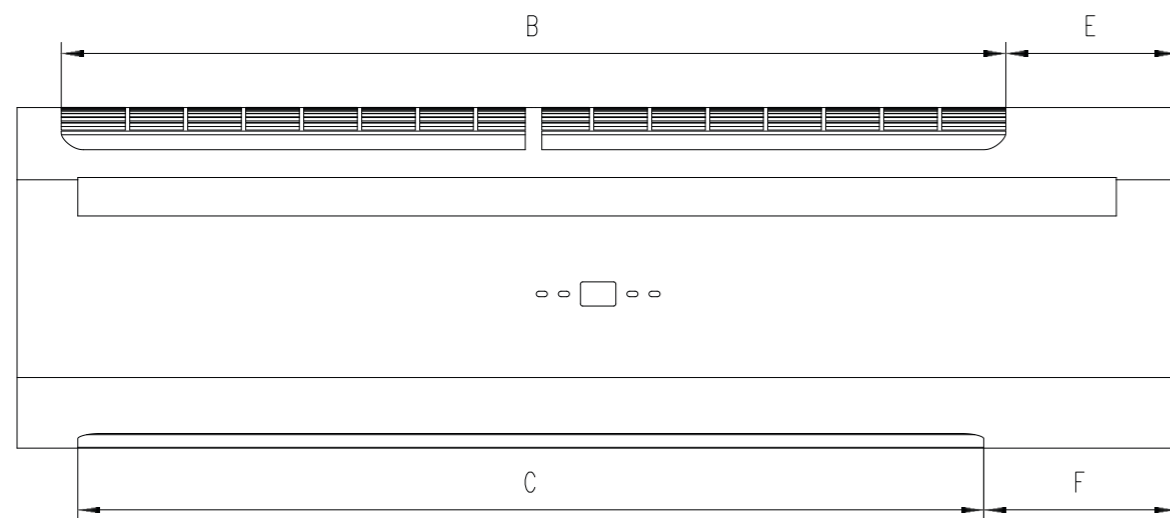
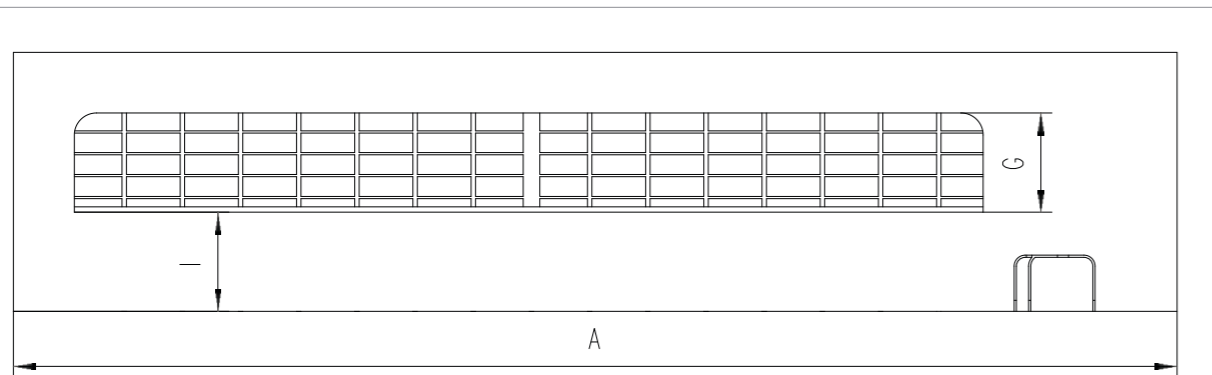
Heating mode (2-pipe):

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

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 MODEL SWC Y-AECM

Dimensional Drawings (in) SWC AECM Models



Model	Unit Dimensions (inches)								
	A	B	C	D	E	F	G	H	I
SWC-04	34 7/16	26 3/16	28	11 13/16	6 2/3	5	4 1/8	8 2/3	4 1/8
SWC-06	34 7/16	26 3/16	28	11 13/16	6 2/3	5	4 1/8	8 2/3	4 1/8
SWC-12	34 7/16	26 3/16	28	11 13/16	6 2/3	5	4 1/8	8 2/3	4 1/8
SWC-15	34 7/16	26 3/16	28	11 13/16	6 2/3	5	4 1/8	8 2/3	4 1/8
SWC-18	34 7/16	26 3/16	28	11 13/16	6 2/3	5	4 1/8	8 2/3	4 1/8
SWC-20	41 1/3	33 2/3	32 1/4	12 3/16	6	6 7/8	3 1/2	9 1/4	3 1/2
SWC-24	41 1/3	33 2/3	32 1/4	12 3/16	6	6 7/8	3 1/2	9 1/4	3 1/2
SWC-30	41 1/3	33 2/3	32 1/4	12 3/16	6	6 7/8	3 1/2	9 1/4	3 1/2