



ECO SLIMLINE UNIVERSAL SERIES DECORATIVE FAN COILS



MODELS

PFWSL-ECM

Slimline Universal Fan Coils with EC Motor 230V/50Hz.

NEW PRODUCT



ECO SLIMLINE UNIVERSAL SERIES FAN COILS

PFWSL-ECM

Product Presentation

The PFWSL-ECM ECO Slimline Universal Fan Coils, with energy efficient EC motors are meant for residential applications with a slim and elegant 130mm depth design.

This product range can achieve higher energy savings when combined with low temperature heat generators such as heat pumps, condensing boilers and system with built-in solar collectors.

With its sophisticated temperature regulator, the PFWSL-ECM guarantees thermal comfort in every season. It heats and cools extremely quickly, and once the desired temperature is reached it maintains it accurately and silently.

Product Range

The ECO Slimline Universal Series Fan Coils offers an EC motor range of 230V/50Hz, with the following capacities:

- **5 sizes of 2 pipe models 2 row models from 0.96kW to 3.4kW (3300 BTU/H to 11600 BTU/H) cooling capacity and 1kW to 3.36Kw (3400 BTU/H to 11500 BTU/H) heating capacity.**
- **5 sizes of 4 pipe models 2 row models from 0.95kW to 3.3kW (3250 BTU/H to 11300 BTU/H) cooling capacity and 1.08kW to 3.59Kw (3700 BTU/H to 12250 BTU/H) heating capacity.**

Product Features

- **Energy Efficiency.** The PFWSL-ECM ECO Slimline Universal 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 PFWSL-ECM ECO Slimline Universal Series Fan Coils has been designed to maximize product flexibility on site and in stock offering:
 - Easy to remove front cover for ease of maintenance.
 - Horizontal or vertical return air intake positions.
 - Horizontal and vertical installation available.
- **Design.** The PFWSL-ECM ECO Slimline Universal Series Fan Coils has an Elegant and Modern design, with only 130mm depth.
- **Low Sound.** The PFWSL-ECM ECO Slimline Universal Series Fan Coils features minimize noise level thanks to its cross fan blower.

Standard Configuration

The PFWSL-ECM ECO Slimline Universal Series Fan Coils comes with 2mm nylon net filter, heat exchanger and right-side coil connection.

Control Options

The PFWSL-ECM ECO Slimline Universal Series Fan Coils offers 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 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.

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, control of Drain Pump, Louvers, Zone Control product operations, and limited LED diagnostics.

EC-S VERSION UNIT



Available with our new Wired Wall Pad. Optional remote handset.

EC-W VERSION UNIT



Designed for control with an external thermostat, which needs to be installed outside of the unit.

EC-THERMOSTAT (OPTIONAL)



EC thermostat (TH-EC) available for installation within the unit. See accessories section for further information.



PFWSL ECM SLIMLINE UNIVERSAL SERIES

Technical Specifications (Eurovent Standards)

PFWSL-V-ECM Hydronic Slimline Universal, 2 Pipe with EC Motor

UNIT CONFIGURATION		PFWSL-[Size]-V-ECM				01	02	03	04	05
		Configuration				2-pipe				
		Number of Fan Blowers				Single			Twin	
		Power Supply		[V/Ph/Hz]		230 / 1 / 50				
		Operation Control				S Type: Total control version. WType: Flexible control version.				
PERFORMANCE DATA	Air	Air Flow	H	3	m3/h	184	300	420	524	590
			M	2		146	230	333	412	450
			L	1		92	142	228	337	392
	Cooling	Cooling Capacity	H	3	kW	0.96	1.64	2.36	2.93	3.4
			M	2		0.8	1.34	1.99	2.44	2.78
			L	1		0.56	0.92	1.48	2.1	2.5
		Sensible Cooling Capacity	H	3		0.7	1.17	1.66	2.07	2.39
			M	2		0.57	0.94	1.38	1.71	1.92
			L	1		0.39	0.63	1.01	1.46	1.73
		Latent Cooling Capacity	H	3		0.26	0.47	0.7	0.23	1.01
			M	2		0.23	0.4	0.61	0.73	1.48
			L	1		0.17	0.29	0.47	0.64	0.77
	FCEER	Rating				73.7	94.0	118.1	163.2	180.9
		Class				D	C	C	B	B
	Heating	Heating Capacity	H	3	kW	1	1.66	2.34	2.93	3.36
			M	2		0.84	1.36	1.98	2.45	2.75
			L	1		0.58	0.94	1.47	2.1	2.47
		Max. Elec. Heater Capacity				0.75	1.0	1.0	1.5	2.0
	FCCOP	Rating				76.0	95.3	116.5	164.9	180.8
		Class				D	D	C	B	B
	Sound	Sound Pressure Level (Outlet)			dB(A)	39 / 33 / 28	43 / 37 / 31	45 / 41 / 34	47 / 41 / 35	49 / 45 / 38
		Sound Power Level (Outlet)				48 / 42 / 37	52 / 46 / 40	54 / 50 / 43	56 / 50 / 44	58 / 54 / 47
	Electrical	Fan Motor Power (I)	H		W	13	18.7	20.3	23	24
			M			10	13.6	15.8	16	16.7
			L			8	10	13	12	12.8
		Fan Motor Running Current		H	A	0.13	0.16	0.18	0.2	0.21
	Hydronic	Cooling Water Flow Rate	3	L/h	164	281	405	501	582	
			2		137	229	341	418	475	
			1		96	157	254	360	428	
		Cooling Pressure Drop	3	kPa	2.9	9.6	22.2	12.6	18.9	
			2		2.2	6.8	16.6	9.3	13.4	
			1		1.18	3.6	10	7.2	11.25	
		Heating Water Flow Rate	3	L/h	170.9	284.6	401.6	501.9	576	
			2		144.3	233.2	339.2	419.7	472	
			1		100.1	161.2	252.8	359.9	423.2	
		Heating Pressure Drop	3	kPa	2.6	8.1	18.2	10.5	15.5	
			2		1.9	5.8	13.6	7.7	11	
			1		1	3.1	8.3	5.9	9.2	
	Water Content			L	0.44	0.73	1.03	1.32	1.61	
CONSTRUCTION AND PACKING DATA		Water Connections	Type		Socket Threaded Female					
			In	Out	19.05 (3/4")					
		Condensate Drainage Connection		mm (in.)	16 (5/8")					
		Dimensions	L		mm	740	940	1140	1340	1540
			W	130						
			H	580						
		Net Weight			kg	19	22	25	28	31

Cooling mode (2 pipe):

Return air temperature: 27C DB /19C WB.

Inlet/outlet water temperature: 7C /12C.

Heating mode (2 pipe):

Return air temperature: 20C.

Inlet/outlet water temperature: 45C/40C.

For High ΔT Condition Requirements, please refer to Sonkor Selection Software.

(1): Fan motor power includes PCB power input.

Technical Specifications (Eurovent Standards)

PFWSL-P-ECM Hydronic Slimline Universal, 4 Pipe with EC Motor

UNIT CONFIGURATION					PFWSL-[Size]-P-ECM			01	02	03	04	05			
					Configuration			4-pipe							
					Number of Fan Blowers			Single					Twin		
					Power Supply		[V/Ph/Hz]	230 / 1 / 50							
					Operation Control			S Type: Total control version. WType: Flexible control version.							
PERFORMANCE DATA	Air	Air Flow	H	3	m3/h	184	300	420	524	590					
			M	2		146	230	333	412	450					
			L	1		92	142	228	337	392					
	Cooling	Cooling Capacity	H	3	kW	0.95	1.6	2.27	2.85	3.3					
			M	2		0.8	1.31	1.92	2.37	2.7					
			L	1		0.56	0.89	1.43	2.04	2.43					
		Sensible Cooling Capacity	H	3		0.68	1.12	1.6	2	2.31					
			M	2		0.56	0.9	1.33	1.65	1.87					
			L	1		0.38	0.61	0.97	1.41	1.68					
		Latent Cooling Capacity	H	3		0.27	0.48	0.67	0.85	0.99					
			M	2		0.24	0.7	0.59	0.72	0.83					
			L	1		0.18	0.28	0.46	0.63	0.75					
	FCEER	Rating				73.6	91.3	114.0	158.5	175.8					
		Class				D	C	C	B	B					
	Heating	Heating Capacity	H	3	kW	1.08	1.76	2.49	3.09	3.59					
			M	2		0.89	1.44	2.08	2.58	2.91					
			L	1		0.62	0.99	1.55	2.2	2.6					
	FCCOP	Rating				81.0	100.6	122.8	173.1	190.8					
		Class				D	C	C	B	B					
	Sound	Sound Pressure Level (Outlet)				39 / 33 / 28	43 / 37 / 31	45 / 41 / 34	47 / 41 / 35	49 / 45 / 38					
		Sound Pressure Level (Outlet)				48 / 42 / 37	52 / 46 / 40	54 / 50 / 43	56 / 50 / 44	58 / 54 / 47					
	Electrical	Fan Motor Power [I]	H	W	13	18.7	20.3	23	24						
			M		10	13.6	15.8	16	16.7						
			L		8	10	13	12	12.8						
		Fan Motor Running Current		H	A	0.13	0.16	0.18	0.2	0.21					
	Hydronic	Cooling Water Flow Rate	3	L/h	164	274	390	488	566						
			2		137	224	329	407	463						
			1		96	153	244	350	417						
		Cooling Pressure Drop	3	kPa	9.2	29.8	23	18.4	27.9						
			2		6.8	21.1	17.1	13.6	19.8						
			1		3.7	11.1	10.3	10.5	16.6						
		Heating Water Flow Rate	3	L/h	92	151	214	265	308						
			2		77	123	179	221	249						
			1		53	85	133	189	223						
		Heating Pressure Drop	3	kPa	8.8	28.8	67.6	17.3	26.5						
			2		6.4	20.3	49.9	12.7	18.5						
			1		3.5	10.9	30.3	9.7	15.4						
		Chill Water Content		L	0.23	0.38	0.53	0.68	0.83						
		Hot Water Content			0.12	0.19	0.27	0.34	0.42						
CONSTRUCTION AND PACKING DATA					Water Connections		Type		Socket Threaded Female						
							In	Out	mm (in.)	12.7 (1/2")					
					Condensate Drainage Connection			mm		740	940	1140	1340	1540	
					Dimensions		L		W	H	130				
							Net Weight			kg	19	22	25	28	31

Cooling mode (4 pipe):

Return air temperature: 27C DB /19C WB.

Inlet/outlet water temperature: 7C/12C.

Heating mode (4 pipe):

Return air temperature: 20C.

Inlet/outlet water temperature: 65C/55C.

For High ΔT Condition Requirements, please refer to Sonkor Selection Software.

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ECO SLIMLINE
UNIVERSAL
SERIES
FAN COILS

MODEL PFWSL-ECM

Product Accessories

CONTROL ACCESSORIES



INFRA-RED HANDSET CONTROLLER + WALL HOLDER

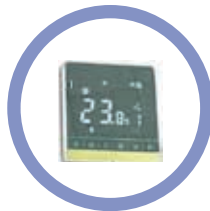
(AVAILABLE ONLY FOR TOTAL CONTROL BOARD)

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.

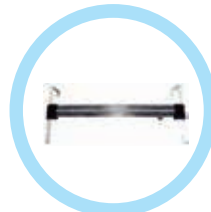


STCD SERIES THERMOSTATS

(FOR FLEXI CONTROL BOARD)

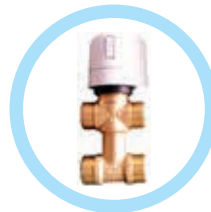
Please visit www.sonkor.com for further information on our STCD thermostat range.

MORE ACCESSORIES



ELECTRICAL HEATERS

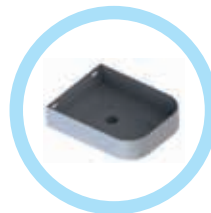
The electric heater module is supplied for winter heating as an alternative to the auxiliary hot water coil. We offer a complete range of PTC (Positive Thermal Coefficient) electric heaters kits, easy to connect to control box, with mounting fixture. The electric heater configuration is selectable by DIP switch on the internal control board.



VALVES + VALVE KITS

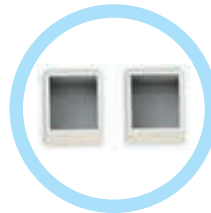
2-way On/Off or 3-way bypass valves, 3/4" or 1/2" sizes with thermoelectric or 24Vac modulating Actuators.

Stainless Steel Hose and Cooper Piping Connection Kits for 2-way and 3-way valve options. Distance between inlet and outlet pipe connections standardized at 1.57inches (40mm) for hot water circuit, and 1.97inches (50mm) for cold water circuit.



AUXILIARY DRAIN PANS FOR VERTICAL OR HORIZONTAL INSTALLATIONS

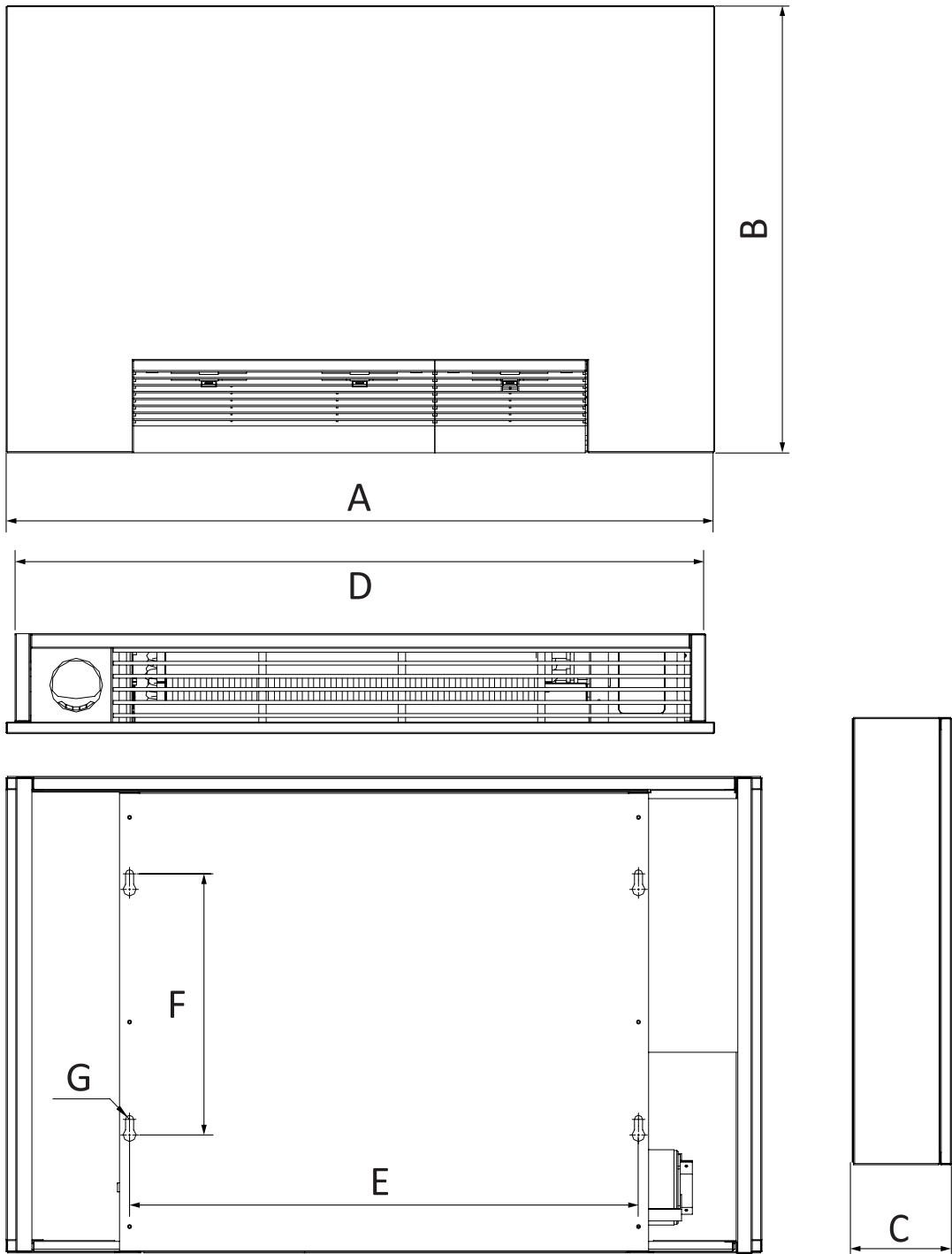
Painted steel drain pans for suspended ceiling, built-in horizontal or floor standing fixed wall installations with right/left-sided coil connections.



METAL FEET FOR FLOOR STANDING PFWSL

See Technical Manual for further information.

Dimensional Drawings (mm) PFWSL-ECM 2/4 Pipe Models



Model	Unit Dimensions (mm)						
	A	B	C	D	E	F	G
PFWSL-01-ECM	740	582	130	716	433	300	R5
PFWSL-02-ECM	940	582	130	916	633	300	R5
PFWSL-03-ECM	1140	582	130	1116	833	300	R5
PFWSL-04-ECM	1340	582	130	1316	1033	300	R5
PFWSL-05-ECM	1540	582	130	1516	1233	300	R5