



PRODUCT SPECIFICATIONS GENERAL MANUAL

SWC - V - EC - I

SURFACE MOUNTED HIGHWALL
V - 2 pipe



INVESTING IN QUALITY, RELIABILITY & PERFORMANCE

ISO 9001 QUALITY



Management Service

Every product is manufactured to meet the stringent requirements of the internationally recognized ISO 9001 standard for quality assurance in design, development and production.

World Leading Design and Technology

Equipped with the latest air-conditioning test rooms and manufacturing technology, we produce over 50,000 fan coil units each year, all conforming to the highest international standards of quality and safety.

CE SAFETY STANDARDS



Product Service

All products conform to the Certificate Europe directives (Machinery Safety, Electromagnetic Compatibility and Low Voltage), as required throughout the European Community, to guarantee correct standards of safety.

The Highest Standards of Manufacturing

In order to guarantee the very highest standards and performance, we manage every stage in the manufacturing of our products. Throughout the production process we maintain strict control, starting with our extensive resources in research and development through to the design and manufacture of almost every individual component, from molded plastics to the assembly of units and controllers.

EUROVENT CERTIFICATION



WEEE MARK



All products conform to the "WEEE" directive to guarantee correct standards of environmental solutions.

Quality Controlled from Start to Finish

Our highly trained staff and strict quality control methods enable us to produce products with an exceptional reputation for reliability and efficiency, maintained over many years. As well as CE certification and ISO 9001, several products ranges have UL / ETL safety approval in the USA and Canada, Eurovent performance and sound certification as well as ROHS compliance for Europe, giving you the confidence of knowing our company is the right choice when selecting fan coil units.

ALWAYS MAKE SURE THIS MANUAL REMAINS WITH THE UNIT. READ THIS MANUAL BEFORE PERFORMING ANY OPERATION ON THE UNIT.

Table of Contents

A. General Descriptions 3

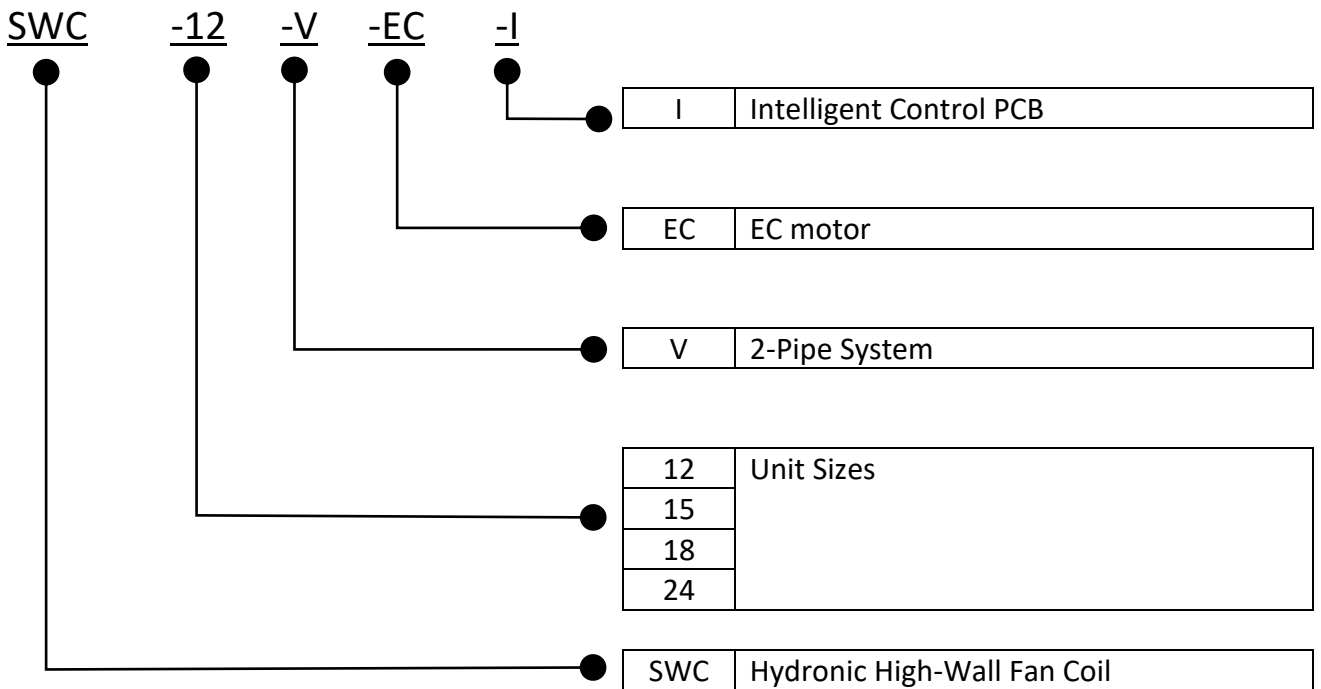
B. Specifications 4

C. Coil Data 5

D. Dimension Drawings 5

E. Sound Data 7

Model Code Nomenclature



A. General Descriptions

This High Wall Unit is designed to meet and exceed demanding requirements for efficiency, quiet operation and appearance. The sleek profile and elegantly styled cabinet complement interior design theme, while the microprocessor assures accurate environmental control.

Cabinet ~ the stylish cabinet is constructed of durable flame resistant acrylonitrile-butadiene-styrene (ABS) plastic. The silver white color and rounded corners provide its modern look.

Water Coil ~ the water coil has a large heat transfer surface and utilizes the latest fin profile technology. It combines an advanced technology approach with the security of a traditional design regarding tube thickness. The coil is constructed with seamless copper tubes and headers. The tubes are mechanically expanded into corrugated aluminum fin material for a permanent primary to secondary surface bond. The coil is tested at 35 bar and recommended for maximum operating at 20 bar. It includes manual air vent and water purge valve.

Integral Hoses ~ an integral hose is a synthetic elastomer tube, with stainless steel outer braiding and brass connectors, which enables quick, low cost connections with no brazing.

Blower and Motor ~ the unit incorporates only specially designed and tested EC motors, allowing the blower wheel to provide optimum performance in airflow-efficiency and quiet operation.

Filters ~ washable, easy-to-remove, fine mesh air filters are standard to all high-wall models. Tabs located on the front of the unit can be unsnapped, allowing the filter to be easily slid downward and removed. No tools are required, nor any dismantling of the equipment.

Air Grille Distribution ~ all units are equipped with both deflector blades and independent directional vanes, enabling supply air to be automatically distributed, and air flow and direction to be customized.

Microprocessor Control ~ The main design features include:

- ~ FCEER rating class: A/B.
- ~ FCCOP rating class: B/C.
- ~ High efficiency EC motor with PID algorithmic processing in auto-mode.
- ~ 2-pipe, 2-pipe with booster electric heat, 2-pipe with primary electric heat, 4-pipe with 4x2 device installed.
- ~ Cool, Heat, Auto, Dehumidifier and Fan modes.
- ~ Sleep, Auto-Fan, Daily Timer, Auto-Restart with memory functions.
- ~ User friendly remote control handset.
- ~ Heat and cool temperature protections and safety cut out.
- ~ 2-way and 3-way on/off valve control.
- ~ Addressable control and error diagnostics (Master-Slave) for sub-networks of up to 32 units, with IR handset as global control interface.
- ~ Wired wall pad controller (optional) with 7-day programmable timer, real-time clock, network control (global and addressable) and error diagnostics.
- ~ Manual control panel in cabinet.
- ~ Auxiliary switch for cooling and heating signal.
- ~ Occupancy (remote on/off) contacts / economy mode contacts.
- ~ Open Modbus communication protocol.
- ~ Local PC host control solution (optional).

Variable water flow system

The water flow through the fan coil is controlled by a temperature difference between the flow and return pipework – referred to as Δt , to ensure the correct heat transfer from the water to the air. Constant Δt keep the unit running efficiency and consequently the whole life running costs of the system.

B. Specifications

Product range: SWC-EC-I Hydronic High Wall Unit with EC Motor

SWC-[Size]-V-EC-I				12	15	18	24		
Unit Configuration		Configuration		2-pipe					
		Number Of Fan Blower		1					
		Power Supply	(V/Ph/Hz)	230 / 1 / 50					
				220 / 1 / 60					
Operation Control		~S: Complete controller with VAV & VWV							
Performance Data		Air	Air Flow	H	m ³ /hr	500	645	788	1080
				M	370	500	740	980	
				L	290	370	570	600	
		Cooling	Cooling Capacity	H	kW	2.39	3.02	3.72	4.89
				M		1.86	2.47	3.26	4.37
				L		1.61	1.86	2.66	3.05
			Sensible Cooling Capacity	H		1.72	2.2	2.72	3.49
				M		1.32	1.77	2.35	3.1
				L		1.13	1.32	1.9	2.12
		Heating	Heating Capacity	H	kW	2.66	3.2	3.96	5.34
				M		2.11	2.66	3.79	4.95
				L		1.73	2.11	3.14	3.44
			Max. Electric Heater Capacity	1					
		Sound	Sound Pressure Level (Outlet)		dB(A)	40/33/28	45/34/31	49/44/37	47/44/37
			Sound Power Level (Outlet)			49/42/37	54/43/40	58/53/46	56/53/46
		Electrical	Power input in cooling mode	H	W	13	22	30	40
				M		10	15	20	30
				L		8	10	13	19
		Fan Motor Running Current @ H		A	0.11	0.19	0.26	0.35	
		Hydraulic	Cooling Water Flow Rate	H	L/h	410	517	638	838
M	319			423		559	749		
L	275			319		456	523		
Cooling Pressure Drop	H		kPa	17.15	26.09	33.52	46		
	M			10.93	18.15	26.37	37.52		
	L			8.39	10.93	18.27	19.67		
Heating Water Flow Rate	H		L/h	456	548	679	916		
	M			362	456	650	848		
	L			297	362	538	589		
Heating Pressure Drop	H		kPa	20.01	27.93	35.75	49.18		
	M			13.25	20.01	33	42.84		
	L			9.27	13.25	23.49	22.22		
Water Content		L	0.124	0.124	0.192	0.252			
Construction and Packing Data		Water Connections	Type		Socket(Threaded Female)				
			In	mm[in]	12.7 [1/2]				
		Out	16 [5/8]						
		Condensate Drainage Connection		16 [5/8]					
		Dimensions	L	mm	875		1050		
			W		220		235		
H	300		310						
Net Weight		kg	13	13	14	16			

Eurovent testing conditions:

a. Cooling mode (2-pipe):

- Return air temperature: 27C DB/ 19C WB.
- Inlet/ Outlet water temperature: 7C/ 12C.

b. Heating mode (2-pipe):

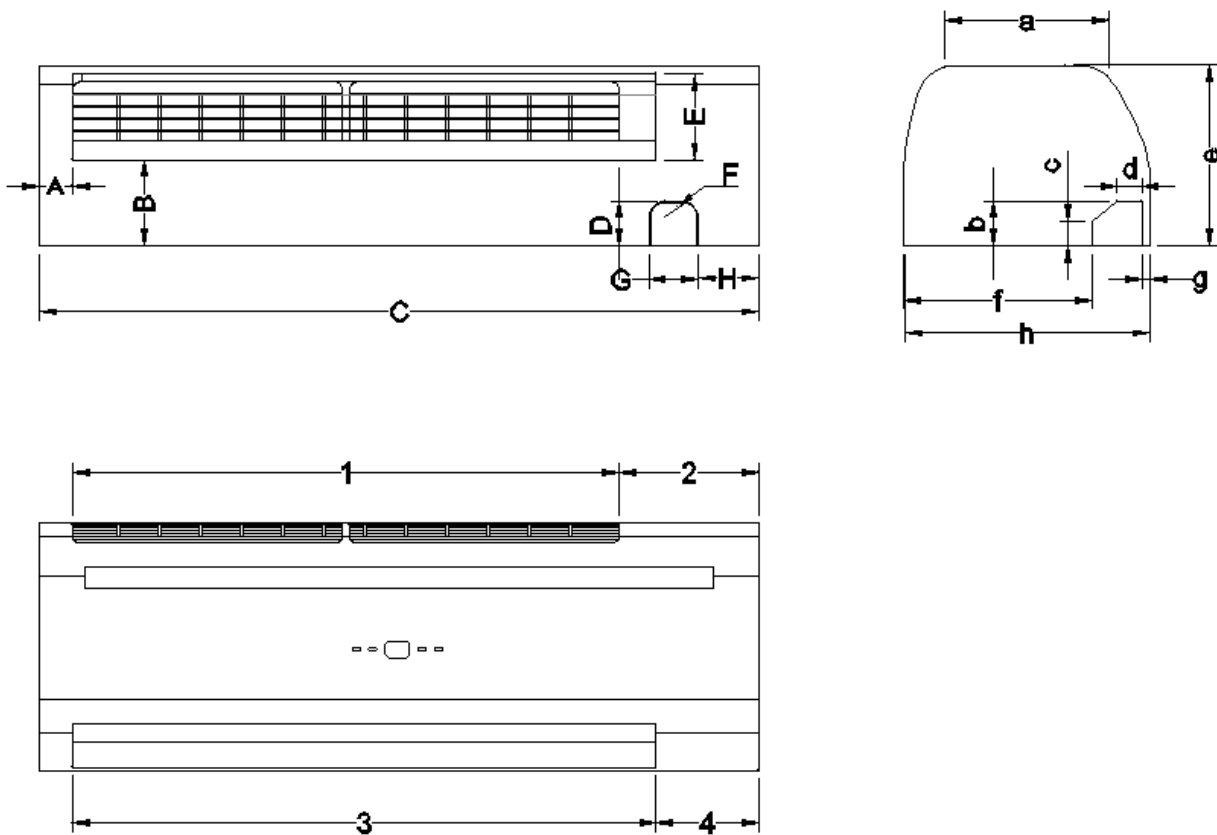
- Return air temperature: 20C.
- Inlet/outlet water temperature: 45/40C.

C. Coil Data

Model	Fin Height (mm.)	Fin Length (mm.)	Fins per Inch	No. of Rows	No. of Copper	No. of Circuits	Tube Diameter (mm)
SWC-12	230	680	19.5	2	22	4	7
SWC-15	230	680		2	22	4	7
SWC-18	357	680		2	34	5	7
SWC-24	378	845		2	36	6	7

D. Dimension Drawings

Dimension drawing for SWC-12/15/18-EC-I

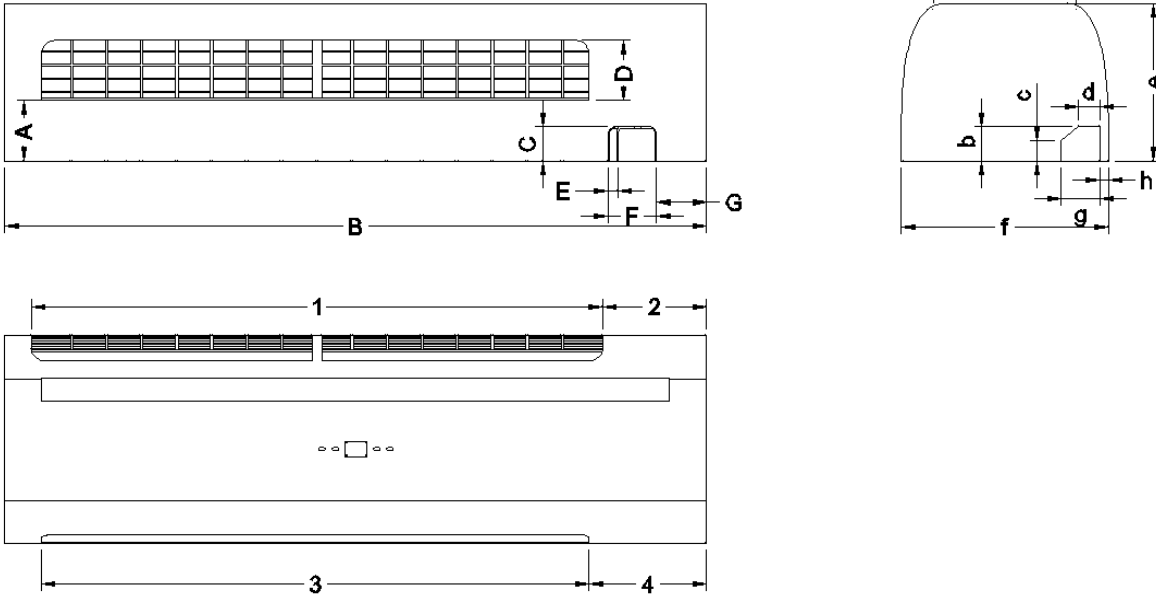


Model	Unit Dimensions (mm)							
	A	B	C	D	E	F	G	H
SWC-12/15/18	40	105	875	55	105	R20	60	74

Model	Unit Dimensions (mm)							
	a	b	c	d	e	f	g	h
SWC-12/15/18	200	55	30	30	220	229	10	300

Model	Unit Dimensions (mm)			
	1	2	3	4
SWC-12/15/18	665	170	710	125

Dimension drawing for SWC-24-EC-I



Model	Unit Dimensions (mm)						
	A	B	C	D	E	F	G
SWC-24	90	1050	51	90	15	73	74

Model	Unit Dimensions (mm)							
	a	b	c	d	e	f	g	h
SWC-24	215	52	30	32	235	310	58	13

Model	Unit Dimensions (mm)			
	1	2	3	4
SWC-24	855	155	820	175

E. Sound Data

Model	SWC-12-EC-I			SWC-15-EC-I			SWC-18-EC-I			SW-24-EC-I			
Speed	H(930)	M(700)	L(600)	H(1150)	M(800)	L(700)	H(1300)	M(1100)	L(900)	H(1200)	M(1100)	L(900)	
Sound Power dB(A)	49.0	39.8	35.5	56.0	43.9	39.5	60.0	54.5	47.5	57.3	53.8	49.4	
Sound Power in 1/3 Octave-bands under ESP: 0 Pa	20.0 Hz	15.8	17.4	18.3	21.1	19.9	19.9	14.7	23.8	19.0	22.5	17.0	17.0
	25.0 Hz	18.4	19.3	19.0	22.6	19.7	17.7	21.4	17.9	17.9	20.4	16.2	20.5
	31.5 Hz	19.6	22.2	15.3	22.7	16.3	18.4	21.2	17.9	19.1	20.1	16.7	17.5
	40.0 Hz	17.9	13.4	13.9	23.6	16.3	17.6	28.1	19.1	17.6	21.8	18.7	16.2
	50.0 Hz	20.8	20.2	20.2	20.3	20.2	18.9	23.2	26.0	20.8	21.7	25.4	18.0
	63.0 Hz	25.2	17.6	16.0	28.4	23.4	20.8	34.4	29.1	23.3	25.6	27.8	23.2
	80.0 Hz	27.2	19.8	16.4	32.1	21.0	21.8	38.8	31.2	26.0	32.6	30.0	23.5
	100.0 Hz	28.3	22.9	16.3	36.0	24.2	22.1	39.4	37.2	27.6	34.6	31.3	27.9
	125.0 Hz	27.7	25.9	25.9	38.0	27.3	26.3	43.2	34.6	28.8	37.5	32.2	29.2
	160.0 Hz	31.5	25.8	20.0	39.8	30.0	23.4	44.5	37.0	31.8	37.3	36.6	32.2
	200.0 Hz	31.0	22.3	19.2	39.2	29.6	23.9	44.6	37.5	31.3	40.9	36.6	35.2
	250.0 Hz	32.4	24.8	20.0	39.6	28.1	26.5	43.5	36.9	30.8	39.7	38.5	34.0
	315.0 Hz	34.0	25.0	22.4	40.9	30.5	25.7	45.0	40.4	34.3	43.9	39.6	41.4
	400.0 Hz	39.7	32.3	25.8	46.2	36.2	31.7	50.5	45.1	38.0	46.6	42.8	39.5
	500.0 Hz	43.1	31.7	25.4	47.5	37.9	32.4	50.9	46.3	41.3	47.8	45.0	40.6
	630.0 Hz	41.6	30.0	24.2	48.8	35.4	30.7	52.3	49.5	39.7	49.6	46.9	40.8
	800.0 Hz	38.0	27.5	21.3	46.5	32.8	28.2	50.8	44.4	37.2	51.4	46.4	41.7
	1000.0 Hz	40.2	27.8	22.9	48.5	33.6	28.8	52.6	45.7	39.1	47.4	43.7	38.1
	1250.0 Hz	36.2	24.7	20.9	45.2	30.5	24.3	49.1	43.9	35.0	48.7	43.0	37.7
	1600.0 Hz	33.0	22.8	21.6	42.7	26.7	22.8	47.1	39.4	31.3	43.1	39.4	31.9
2000.0 Hz	30.0	20.7	19.6	39.4	23.4	21.2	44.4	36.8	28.0	41.8	37.6	29.3	
2500.0 Hz	27.5	20.4	20.3	36.7	22.2	20.4	41.6	34.1	25.9	37.0	32.5	25.5	
3150.0 Hz	25.0	21.0	20.6	33.3	21.9	20.9	38.3	31.3	23.7	36.5	31.1	24.3	
4000.0 Hz	23.6	20.6	20.6	31.5	21.3	20.7	36.6	29.5	22.9	31.5	27.5	22.3	
5000.0 Hz	22.0	20.7	20.5	27.8	20.9	20.6	32.7	25.9	21.6	28.0	24.2	21.3	
6300.0 Hz	20.6	20.2	20.1	24.5	20.3	20.2	29.1	23.1	20.4	24.3	22.4	20.6	
8000.0 Hz	19.3	19.1	19.2	21.2	19.2	19.1	24.6	20.5	19.3	20.9	20.0	19.5	
10000.0 Hz	17.3	17.4	17.2	17.9	17.3	17.2	19.5	17.7	17.3	17.9	17.6	17.4	
12500.0 Hz	14.4	14.5	14.3	14.6	14.4	14.5	15.3	14.5	14.4	14.7	14.6	14.6	
16000.0 Hz	11.5	11.2	11.3	11.9	11.3	11.3	11.9	11.4	11.6	12.1	11.9	11.7	



POLAR GLOBAL EUROPE HVAC SYSTEMS S.L.

C/ Rio Eresma 1, Polígono Industrial El Saladar,
Lorquí, 30564, Murcia, Spain

www.pghvac.com