

PRELIMINARY DATA

**SANYO**

2006



SANYO

GENERAL CATALOGUE 2006



CE



**SANYO**

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AIRCONDITIONERS EUROPE

GENERAL CATALOGUE 2006



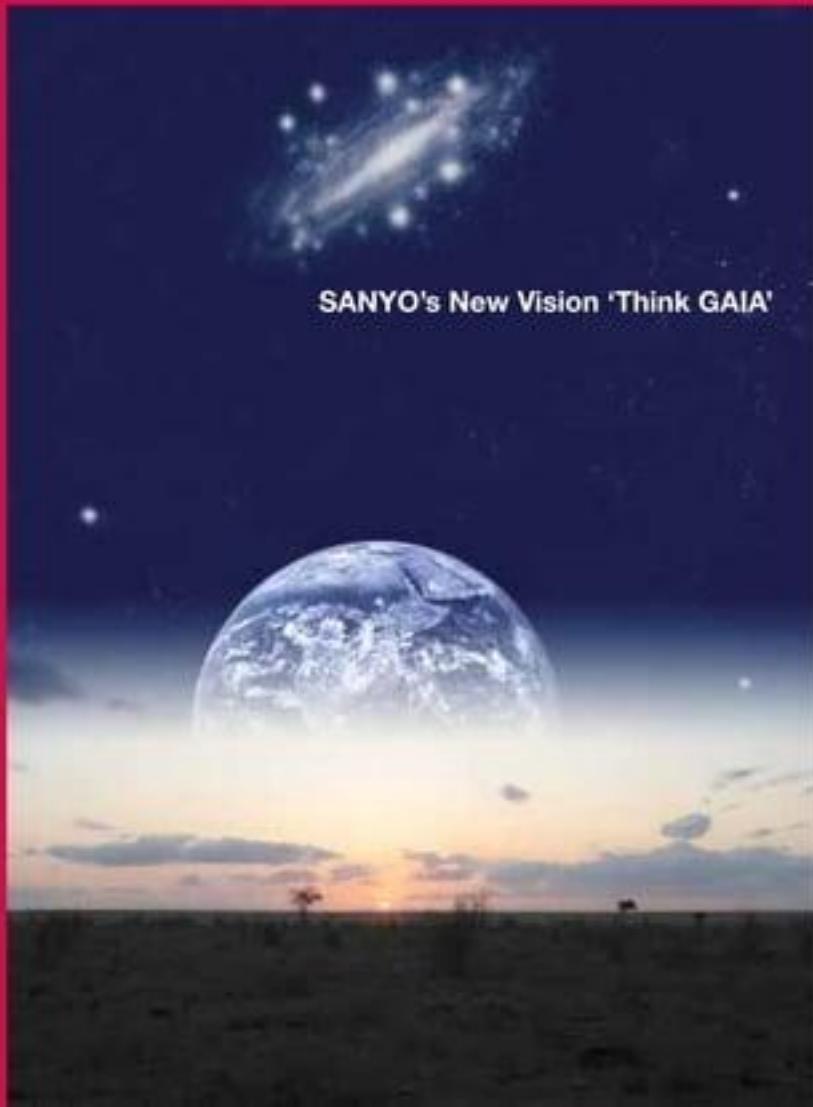
## SANYO Airconditioners Europe History

**SANYO**

The **SANYO Group of Companies** is truly international, including 83 manufacturing companies, 40 sales companies and 37 other companies around the world. **SANYO's strategic business focus is on the Digital & Devices and Energy and Ecology fields.** Committed to solving environment issues, the Company has made the development of technologies with minimum of burden on the environment, an area of strength. It emphasizes such technologies as clean-energy generation air conditioning methods that do not require the use of harmful chlorofluorocarbons. **SANYO Airconditioners Europe S.r.l.** is the sales company for the **SANYO** air conditioners in Europe, a leader in the field of air conditioning equipments, with a wide variety of products based upon environment-friendly technology. We are dedicated to sharing **SANYO's management philosophy** which is "We are committed to becoming an indispensable element in the lives of people all over the world."

### BRIEF HISTORY OF SANYO AIR CONDITIONER

- 1958 Production of first window air conditioner begins
- 1960 SANYO introduce the world's first heat pump A/C units
- 1961 Started sales of split type and package type air conditioning
- 1970 SANYO launch world's first split type equipped with rotary compressor
- 1971 Production of absorption chiller begins
- 1983 SANYO release first Gas Heat Pump A/C
- 1989 World's first simultaneous heating & cooling VRV system
- 1991 Samples of world's first solar powered A/C released
- 1993 SANYO released first large-capacity VRV system (Vi-Multi)
- 1995 World's first large capacity heating & cooling VRV system (Vi-Multi 3 way)
- 2000 SANYO begins direct sales in Europe
- 2003 SANYO launch Gas Heat Pump VRV in Europe
- 2004 Started sales of R410A inverter driven VRV in Europe
- 2005 SANYO releases simultaneous heating & cooling GHP in Europe (3 way ECO-G) SANYO launches Mini VRV for light commercial use (Mini ECO-II)
- 2006 SANYO introduce new R410A GHP units and new VRV system's range



SANYO's New Vision 'Think GAIA'

SANYO



SANYO's mission is to 'restore a beautiful Earth to the children of the future' and using 'Sustainability' (Symbiotic Evolution) as a keyword, SANYO will aim to 'become a company that pleases life and the Earth', and 'Think GAIA' will be the new vision guiding SANYO. In order to contribute to GAIA, SANYO will knit together various proprietary technology competencies as 'solutions that add value to the Earth' and thus, aim to become a global solutions provider. This would, in turn, lead to significant business chances in the increasingly globalizing world markets. Based on this vision, the 'SANYO EVOLUTION PROJECT' is launched. The new Project is introduced for the realization of SANYO's new vision - 'THINK GAIA', and its major programs.



Photovoltaic module



Absorption Chiller



Commercial Refrigerators



CO<sub>2</sub> Compressor



Gas Engine Driven Heli

## SANYO Airconditioners Technology

**SANYO**

### High Energy Efficiency

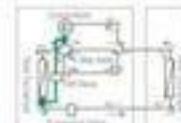
Sanyo conforms to the 2002/91/EC Directive – 92/75/EEC "Energy labelling Directive (ELD)", which is applicable from June 2004 on all air conditioning products up to 12 kW cooling capacity. The DC inverter technology helps us to achieve the 'A' class, the highest level of energy efficiency which is clearly indicated on the standard labelling system.

**A** Class



### Twin rotary compressor

The dual rotors revolve smoothly in a well-balanced fashion for stable and efficient performance. This also contributes to increased comfort and rapid cooling, as well as the unit's extra quiet, economical and reliable operation.



### No reverse cycle operation

Sanyo hot-gas defrost valve avoids uncomfortable conditions during defrosting functions ensuring continuous operation even in very low ambient temperature. A comfortable room temperature is kept while minimizing the decline of indoor air temperature.



### Built-in temperature sensor

The temperature sensor incorporated into the remote controller monitors the temperature around you. Placing the sensor remote controller at your bedside you can enjoy comfortable warmth throughout the night.



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## SANYO

**SANYO Residential Air Conditioners**  
are ideally suitable for use in your own home

Its stylish and compact design will fit beautifully into any surroundings. This is the next generation SANYO air conditioners feature cutting edge technology to provide total comfort.

They are available with compressor constant speed or inverter, multi and single split in heat pump and single split cooling only.

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## SAP-KCRV94EHDX • SAP-KCRV124EHDX

Power Range from 2.65 kW to 3.5 kW

INVERTER HEAT PUMP					
	Size 94		Size 124		
Performance	Cooling	Heating	Cooling	Heating	
Capacity	140	2.65-3.5	1.9-2.1	1.9-4.4	4.0
Power input	W	(268-330)-1300	(261-729)-2100	(268-676)-1400	(260-7140)-2100
EER / COP	3.0-9	4.0-6.0	4.0	4.25	
Energy class	A	A	B	B	
Running current	A	1.6-2.4 A	1.8-2.3 A	1.8-4.5 A	1.8-2.5 A
Annual energy consumption (running, kWh)	260	437.5	437.5	437.5	

External Unit					
	SAP-KCRV94EHDX		SAP-KCRV124EHDX		
No circulation (m³/h)	40/70	100	50	50	
Max. ambient temp.	40°C	-	-	-	-
Sound Pressure Level (dB)	55.4	51	50	52	53
Sound Pressure Level (dB(A), Mean)	55.4	52/53/57/60	52/53/60/64	52/53/60/64	53/54/60/64
Dimensions (mm/H)	800	Indoor/Outdoor	1130	Indoor/Outdoor	1130
Net weight	kg	-	-	-	-
Power inputs	2.65-3.5	260, 1-8, 50	260, 1-8, 50	260, 1-8, 50	260, 1-8, 50

External Unit					
	SAP-KRV94EHDX		SAP-KRV124EHDX		
Sound Pressure Level (dB)	55.4	51	52	52	53
Sound Pressure Level (dB)	55.4	49	50	50	51
Dimensions (mm/H)	800	560/760/800	41	560/760/800	41
Net weight	kg	-	-	-	-
Power inputs	2.65-3.5	260, 1-8, 50	260, 1-8, 50	260, 1-8, 50	260, 1-8, 50

Heat pump unit without SAP-EHDX, SAP-EHDX controls supplied without any costs.

Refrigerant circuit					
	Size 94		Size 124		
Total diameter, horizontal line	10000	5.4 (14-15) Ø8	5.4 (14-15) Ø8	5.4 (14-15) Ø8	5.4 (14-15) Ø8
Line piping length	m	12	12	12	12
Max. elevation diff. - R32 (m)	m	12	12	12	12
Charging piping length	m	7.3	7.3	7.3	7.3
Amount of additional refrigerant	g/t	75	75	75	75

Specifications subject to change without notice.

**Rating conditions:**  
Cooling: Outside air temperature 27°C DB/21°C WB, Indoor air temperature 20°C DB/18°C WB  
Heating: Indoor air temperature 20°C DB/18°C WB (outdoor air temperature 1°C DB/0°C WB)

PMS					
	Indoor unit price	Euro	Excl. VAT	Indoor unit price	Euro
Indoor unit price	Euro	500.00	400.00	Indoor unit price	Euro
Excl. VAT	Euro	400.00	320.00	Excl. VAT	Euro



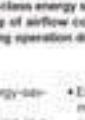
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Shiki Sai Kan



SAP-KRV\_EHDX



SAP-KRV\_EHDX

Sanyo's Regisport model integrates cutting edge technology including the industry's top-class energy saving design, a wide array of airflow control and heating/cooling operation down to -15°C.

- Amazing performance in energy-saving, COP up to 5.0
- Sleek & stylish panel design in a choice from 7 designer colors
- Non-reverse cycle defrosting system for no-stop heating operation
- Cooling & Heating operation down to -15°C
- LED photocatalytic sterilization function features excellent performance against bacteria, germs and viruses
- Exclusive multi-functional wireless remote control with built-in temperature sensor
- 3-D air flow
- Ion generator refreshes your room with negative ions
- Air cleaner spaltite filter
- Super quiet: 22 dB(A)
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

SAP-KCRV93EHFP • SAP-KCRV123EHFP  
SAP-KCRV184EH • SAP-KCRV244EH

Power Range from 2.65 kW to 7.1 kW

Performance	INVERTER HEAT PUMP			
	Size 93	Size 123	Size 184	Size 244
Coeff. of Performance	4.0*	4.0 (size 93)	4.0 (size 123)	4.0 (size 184)
Power Input	9.0	10.0 (size 93)	10.0 (size 123)	10.0 (size 184)
EER (10°C)	3.11	3.07	3.21	3.07
Energy Class	A	A	A	A
Running current	4	3.03-3.19	3.04-3.43	3.03-3.71
Annual energy costs (cooling)	440	277.5	540	750

Technical Data	SAP-KCRV93EHFP	SAP-KCRV123EHFP	SAP-KRV184EH	SAP-KRV244EH
Air circulation (m³/h)	400	500	700	1000
Moisture removal	1.6	-	2.0	-
Sound Power Level (dB)	39.4	39	35	37
Sound Press. Level (dB, A)	23/20/17/14	23/20/17/14	23/20/17/14	23/20/17/14
Vibration Level (dB, A)	20/18/15/12	20/18/15/12	20/18/15/12	20/18/15/12
Dimensions (WxDxH)	900x220x294	900x220x294	900x180x271	900x180x271
Net weight	14	14	13	13
Power supply	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz

Technical Data	SAP-KCRV93EHFP	SAP-KCRV123EHFP	SAP-KRV184EH	SAP-KRV244EH
Sound Power Level (dB)	39.4	39	35	37
Sound Press. Level (dB, A)	39.4	39	37	39
Dimensions (WxDxH)	900x220x294	900x220x294	900x180x271	900x180x271
Net weight	14	14	13	13
Power supply	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz

Refrigerant circuit	Size 93	Size 123	Size 184	Size 244
Total Number of Refrigerant pipes	4	6.33 (16) / 8.52 (37)	8.35 (16) / 8.32 (37)	8.36 (16) / 12.7 (70)
Max piping length	10	15	17	30
Max elevation diff. O.D. 10°	10	10	15	15
Charging piping length	10	13	13	15
Amount of additional refrigerant gas	10	15	15	25

Operating conditions:  
Cooling: Indoor air temperature 27°C / 10°C, Outdoor air temperature 35°C / 20°C / 15°C  
Heating: Indoor air temperature 20°C / 18°C, Outdoor air temperature 7°C / 5°C / 4°C

Specifications subject to change without notice.



	Size 93	Size 123	Size 184	Size 244
Delivery and price Delivery and price Set price	£600.00	£600.00	£600.00	£600.00
	£600.00	£600.00	£600.00	£600.00
	£600.00	£600.00	£600.00	£600.00



Remote control



SAP-KRV.EH(FP)

Ideal solution when you need quiet, efficient and comfortable room air conditioning

- Stylish appearance with flat front panel
- DC-Inverter technology for precise temperature control
- Powerful & comfortable with compact design
- Automatic restart function
- Auto sweep control
- Powerful start function for rapid cooling/heating
- Washable and reusable air clean sprial filter
- Ion generator refreshes your room with negative ions
- Cooling & Heating operation down to -15°C (size 184 & 244)
- Sleek Multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Washable front panel
- Quiet operation: 23 dB(A plus SII)
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

## SAP-KCRV93EH • SAP-KCRV123EH

Power Range from 2.65 kW to 3.5 kW

SAMSUNG HEAT PUMP					
Performance	Size 93		Size 123		Heating
	Cooling	Heating	Cooling	Heating	
Capacity	93	0.9-2.65-3.2	0.9-2.6-3.0	0.9-4.2-5.8	
Power input	93	250-750-1750	250-900-1900	250-1100-2100	
EEI / COP	93	3.31	3.02	3.21	
Energy class		A	A	A	
Running current		1.3-3.9-3.9	1.3-4.3-4.3	1.2-5.3-5.7	
Annual energy consumption cooling	93	3775	3435	3435	

Indoor Unit					
	SAP-KCRV93EH	SAP-KCRV123EH			
Air circulation (m³/h)	400	500	500	500	
Minimum removes	1.0m³/h	1.8	2.8	3.8	
Sound Power Level (dB)	38 A	33	33	37	35
Sound Pressure Level (dB(A))	38 A	33/30/31/34	33/30/31/34	35/37/39/41	35/37/39/41
Dimensions (HWD)	mm	285x270x195	305x270x195	305x270x195	325x270x195
Net weight	kg	19	21	21	24
Power supply	V ph. Hz	230, 1~6, 50	230, 1~6, 50	230, 1~6, 50	230, 1~6, 50

Indoor Unit					
	SAP-KCRV93EH	SAP-KCRV123EH			
Sound Power Level (dB)	38 A	38 A	38 A	38 A	38 A
Sound Pressure Level (dB)	38 A	40	40	47	47
Dimensions (HWD)	mm	340x270x205	340x270x205	340x270x205	340x270x205
Net weight	kg	34	34	37	37
Power supply	V ph. Hz	230, 1~6, 50	230, 1~6, 50	230, 1~6, 50	230, 1~6, 50

Refrigerant circuit					
	Size 93	Size 123			
Line diameter (mm)	10/10	10/10	10/10	10/10	10/10
Max. length (m)	10	15	15	15	15
Max. elevation difference (E. - Z.)	0	2	2	2	2
Charging piping length (m)	0	7.5	7.5	7.5	7.5
Amount of additional refrigerant (g/m)	0.05	0.15	0.15	0.15	0.15

**Rating conditions:**  
Cooling indoor air temperature 27°C/50°F/82°F, outdoor air temperature 35°C/95°F/104°F  
Heating indoor air temperature 20°C/68°F/68°F, outdoor air temperature 7°C/45°F/45°F

PRICE					
Indoor unit price	Euro	600,00	600,00	600,00	600,00
Indoor unit plus price	Euro	600,00	600,00	600,00	600,00
Set price	Euro	1.200,00	1.200,00	1.200,00	1.200,00



A Class

B1/0/0



Remote control



SAP-KRV.EH(A)



SAP-KRV.EH(A)

Samsung's DC Inverter is outstanding for its rapid cooling & heating power.

- Attractive modern design
- DC-Inverter technology for precise temperature control
- Powerful start function features quickly temperature reaching
- Automatic restart function
- Auto sweep control
- Washable air filter (deodorizing filter)
- Ion freshnet
- Sleek Multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Washable front panel
- Quiet operation: 23 dB-A (size 93)
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

# Residential products

SAP-KCR74EH • SAP-KCR94EH • SAP-KCR124EH  
SAP-KCR184EH/DH • SAP-KCR224EH/DH

Power Range from 2.2 kW to 6.4 kW

Performance	COOLING		HEATING		COOLING		HEATING		COOLING		HEATING	
	size 74	size 94	size 124	size 184	size 224	size 74	size 94	size 124	size 184	size 224	size 74	size 94
Capacity	4.0	2.3	3.8	5.0	5.3	4.0	3.7	5.1	6.4	6.4	7.2	7.2
Power input	W	465	665	875	1085	1080	1105	1440	1585	2275	2340	2340
EEI / COP	W/W	3.21	3.62	3.25	3.81	3.21	3.62	3.22	3.47	3.01	3.21	3.21
Energy class	-	B	A	A	A	A	A	A	C	C	C	C
Running amperes (at 230V)	A	0.5	0.3	0.7	0.9	0.9	0.8	1.1/1.2	1.6/1.7	10.1/14.1	9.8/14.4	9.8/14.4
Annual energy consumption (kWh)	kWh	302.5	-	62.5	-	345	-	306	-	1127.5	-	-

Indoor Unit	SAP-KR74EH(A)	SAP-KR94EH(A)	SAP-KR124EH(A)	SAP-KR184EH(A)	SAP-KR224EH(A)	
	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING
Air circulation (m³/h)	420	450	480	500	520	550
Maximum pressure	1200	-	115	-	22	-
Sound Pressure Level (dB(A))	35-A	47	46	44	52	51
Sound Pressure Level (dB(A))	35-A	30.5/30.0	30.5/30.0	30.5/30.0	30.5/30.0	30.5/30.0
Dimensions (mm)	mm	295x425x195	295x425x195	295x425x195	295x425x195	295x425x195
Net weight	kg	10	10	10	10	12
Power supply	V, ph, Hz	-	-	230, 1~6, 50	-	-

Indoor Unit	COOLING		HEATING		COOLING	
	COOLING	HEATING	COOLING	HEATING	COOLING	HEATING
Sound Pressure Level (dB)	35-A	35	35	35	35	35
Sound Pressure Level (dB)	35-A	42	47	46	49	48
Dimensions (mm)	mm	345x425x195	345x425x195	345x425x195	375x425x195	375x425x195
Net weight	kg	30	30	30	30	30
Power supply	V, ph, Hz	-	-	230, 1~6, 50	400, 3~6, 50	-

Refrigerant circuit	size 74	size 94	size 124	size 184	size 224
	Tube diameter, Nominal/Nom.	mm	8.5/11.6 (5.5/23.0)	4.75/6.4 (3.5/23.0)	4.75/6.4 (3.5/23.0)
Max piping length	m	15	15	15	30
Max bending radii (D x 1.5)	m	7	7	7	7
Charging piping length	m	7.5	7.5	12	12
Amount of additional refrigerant	g/kW	15	15	15	25

**Rating conditions:**  
Cooling indoor air temperature 27°C DB/17°C WB; Outdoor air temperature 30°C DB/20°C WB  
Heating indoor air temperature 20°C DB/18°C WB; Outdoor air temperature 7°C DB/5°C WB

Non-linear pressure characteristic diagram, default values



	PRICE
Indoor unit price	Euro 680.00
Indoor unit price	Euro 800.00
Set price	Euro 1.200.00
Set price	Euro 1.200.00

**A** Class  
minimum energy

8410A

# Wall mounted units constant speed type



Remote control



SAP-KR-EH(A)

All you need in an attractive  
and compact design



SAP-CR-EH(A)

- Lightweight and compact
- Quiet mode from 25 dB(A)
- Auto restart after power failure
- Wide model range available: single-phase and three-phase
- Easy-to-clean filter prevents mould or bacteria from occurring
- Negative ion generator (size 184 & 224)
- Washable front panel
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

SAP-KCLR74E • SAP-KCLR94E • SAP-KCLR124E  
SAP-KCLR184E/D • SAP-KCLR224D

Power Range from 2.2 kW to 6.4 kW

Performance	CONSTANT SPEED LINEAR MODE				
	size 74 Cooling	size 94 Cooling	size 124 Cooling	size 194 Cooling	size 224 Cooling
Cooling	148	212	246	315	375
Power (kW)	8	100	125	1800	2250
EEI	10.19	2.21	1.21	3.21	3.21
Energy class	A	A	A	A	C
Running current (A) / 2ph	1.1	1.7	4.3	7.1/3.3	4.8
Annual energy consumption (kWh/year)	342.3	892.3	144	980	1127.5

Technical Data	SAP-KCLR74E				
	SAP-KCLR94E	SAP-KCLR124	SAP-KCLR194	SAP-KCLR224	
Air circulation (m³/h)	320	480	480	120	160
Min/max removal (kg/h)	1.3	1.8	2.0	2.3	3.2
Sound Power Level (dB-A)	47	49	52	52	56
Sound Pressure Level (dBA, dB(A))	25/25/25/25	25/25/25/25	25/25/24/24	30/30/24/24	32/32/24/24
Dimensions (HxWxD), mm	2040x250x90	2040x250x100	2040x250x100	2040x300x110	2040x300x110
Net weight	42	42	55	55	55
Power supply	2 ph, 50	2 ph, 50	2 ph, 50	2 ph, 50	2 ph, 50

Technical Data	SAP-KL74E/A				
	SAP-KL94E/A	SAP-KL124E/A	SAP-KL194E/A	SAP-KL224E/A	
Sound Power Level (dB)	56.4	58	59	61	63
Sound Pressure Level (dB)	58.5	60	67	68	67
Dimensions (HxWxD), mm	1680x250x90	1680x250x100	1680x250x100	1700x300x110	1700x300x110
Net weight	42	42	55	55	55
Power supply	2 ph, 50	2 ph, 50	2 ph, 50	2 ph, 50	2 ph, 50

Refrigerant circuit	size 74				
	size 94	size 124	size 194	size 224	
Tube diameter (mm/mm)	8.35/4.6 x 12/23				
Max piping length	10	15	15	20	30
Max elevation diff. (L1-L2), m	7	7	7	7	7
Charging piping length	10	15	15	25	25
Amount of additional refrigerant, g/m	15	15	15	25	25

**Mounting conditions:**  
Cooling: indoor air temperature 27°C/28°C/29°C (selected air temperature 26°C/28°C/29°C)  
Heating: indoor air temperature 20°C/20°C/20°C (selected air temperature 19°C/19°C/19°C)



	Indoor unit price	Excl.	PRICE
Indoor unit price	Excl.	300.00	400.00
Set price	Excl.	300.00	300.00
	Set price	1200.00	1200.00

**A** Class  
B1/B2/B3



Remote control



SAP-KL-E(A)

All you need in an attractive and compact design



SAP-CLR-E(A)

- Lightweight and compact
- Continuous cooling operation down to -15°C
- Quiet model from 25 dB(A)
- Auto restart after power failure
- Single-phase and three-phase models available
- Multi-functional wireless remote control with built-in temperature sensor
- Negative air generator (size 194 & 224)
- Right set back/Economy mode function ensures gentle and saving energy cooling and heating
- Easy-to-clean filter prevents mould or bacteria from occurring



## SAP-KCR74E • SAP-KCR94E • SAP-KCR124E SAP-KCR184E/D • SAP-KCR224E

Power Range from 2.2 kW to 6.4 kW

Refrigerant	CONSTANT SPEED COOLING UNIT				
	size 14 Cooling	size 16 Cooling	size 18 Cooling	size 194 Cooling	size 224 Cooling
Cooling	2.2	2.6	3.1	5.16	6.4
Power input	0.85	1.05	1.35	2.60	3.05
CO <sub>2</sub>	9.18	12.21	15.21	32.25	34.21
Energy class	A	B	C	B	C
Running current (A) / (A)	0.5	0.7	0.9	1.7/1.3	1.9
Annual energy consumption (kWh/yr)	342.3	410.3	500	1050	1127.8

Water side	SAP-KR14E(A)	SAP-KR16E(A)	SAP-KR18E(A)	SAP-KR194E(A)	SAP-KR224E(A)	
	Ap. circulation (l/h)	420	480	560	940	1000
Water flow rate	L/min	1.2	1.3	1.6	2.3	2.5
Sound Power Level (dB)	dB(A)	47	49	52	53	56
Sound Pressure Level (dB, 1m)	dB(A)	25/28/31/38	25/28/31/38	25/28/31/38	25/28/31/38	25/28/31/38
Dimensions (WxDxH)	mm	350x250x180	350x250x180	350x250x180	290x190x170	290x190x170
Net weight	kg	10	10	10	11	12
Power supply	V/ph. Hz	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50

Galden coil	SAP-KR14E(A)	SAP-KR16E(A)	SAP-KR18E(A)	SAP-KR194E(A)	SAP-KR224E(A)	
	Sound Power Level (dB)	35-4	37	39	41	43
Sound Pressure Level (dB)	dB(A)	40	41	43	45	47
Dimensions (WxDxH)	mm	1480x720x200	1480x720x200	1480x720x200	1750x850x200	1750x850x200
Net weight	kg	79	85	97	105	113
Power supply	V/ph. Hz	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50	~230, 1~6, 50

Refrigerant circuit	size 14	size 16	size 18	size 194	size 224	
	Tube diameter (mm/mm)	4.0/14.1 - 5.0/22.0	4.0/14.1 - 5.0/22.0	4.0/14.1 - 5.0/22.0	6.0/17.6 - 12.2/24	6.0/17.6 - 12.2/24
Max. diameter (mm)	m	10	10	10	30	30
Max. distance off. (LxW) (m)	m	2	2	2	1	1
Charging piping length (m)	m	7.3	7.3	13	7.3	10
Amount of additional refrigerant (g/m)	1	15	15	15	33	33

Operating conditions  
Cooling: indoor air temperature 27°C/28°C/29°C; outdoor air temperature 35°C/36°C/37°C  
Heating: indoor air temperature 20°C/20°C/20°C; outdoor air temperature 7°C/8°C/9°C

A/C size	PRICE	
	Excl. unit price	Incl. unit price
	Euro	Euro
size 14	880.00	900.00
size 16	980.00	1000.00
size 18	1200.00	1250.00



Remote control



SAP-KR\_E(A)

All you need in an attractive and compact design



SAP-CR\_E(A)

- Lightweight and compact
- Quiet mode from 25 dB-A
- Auto restart after power failure
- Single-phase and three-phase models available
- Stainless steel multi-functional wireless remote control with built-in temperature sensor
- Negative ion generator (size 18 & 224)
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating
- Easy-to-clean filter prevents mould or bacteria from occurring

## SAP-FCRV93EH • SAP-FTCRV123EH SAP-FTCRV184EH • SAP-FTCRV244EH

Power Range from 2.65 kW to 7.1 kW

Performance	Cooling	INDOOR HEAT PUMP		Cooling	Heating	Cooling	Heating
		size 93	size 123				
Cooling	93	12.5°C	12.6°C	Cooling	12.5°C	12.6°C	12.6°C
Power input	93	-	-	Heating	-	-	-
CO <sub>2</sub> / CO <sub>2</sub>	93/123	-	-	-	-	-	-
Energy class	-	-	-	-	-	-	-
Running expenses	93	-	-	-	-	-	-
Annual energy costs cooling	93	-	-	-	-	-	-

Indoor Unit	SAP-PRV93EH	SAP-FTRV123EH	SAP-FTCRV184EH	SAP-FTCRV244EH
Air circulation (m³/h)	93	-	-	-
Minimum flow rate (l/s)	Litrough	-	-	-
Sound Power Level (dB)	93: 6	-	-	-
Sound Pressure Level (L <sub>WA</sub> )	93: 6	-	-	-
Dimensions (WxDxH)	93: 600x250	480x400x180	800x400x180	800x400x180
Net weight	kg	18.6	21.3	23.5
Power supply	V (A, Hz)	230 (1.6, 50)	230 (1.6, 50)	230 (1.6, 50)

Outdoor Unit	SAP-CRVE93EH	SAP-CRVE123EH	SAP-CRVE184EH	SAP-CRVE244EH
Sound Power Level (dB)	93: 6	10: 10	10: 11	10: 11
Sound Pressure Level (L <sub>WA</sub> )	93: 6	10: 10	10: 11	10: 11
Dimensions (WxDxH)	93: 480x250x250	540x710x250	870x710x250	870x710x250
Net weight	kg	36	38	44
Power supply	V (A, Hz)	230 (1.6, 50)	230 (1.6, 50)	230 (1.6, 50)

Antennage details	size 93	size 123	size 184	size 244	
Tube diameter/antennae height	mm/m	8.35 (14.6) / 9.50 (3.96)	8.35 (14.6) / 8.52 (3.96)	8.35 (14.6) / 12.7 (5.00)	8.35 (14.6) / 15.8 (5.96)
Max piping length	m	10	10	10	10
Max elevation diff. (L/H)	m	2	2	2	2
Charging piping length	m	7.0	7.0	10	10
Amount of additional refrigerant/gas	kg	1.5	1.5	2.5	2.5

**Rating conditions:**  
Cooling: indoor air temperature 27°C, outdoor air temperature 35°C (26°C - 34°C)  
Heating: indoor air temperature 20°C, outdoor air temperature 7°C (24°C - 17°C)

Indoor unit	PRICE	
	Base unit price	Base unit + pipe price
SAP-PRV93EH	800,-	800,-
SAP-FTRV123EH	800,-	800,-
SAP-FTCRV184EH	1.000,-	1.000,-
SAP-FTCRV244EH	1.200,-	1.200,-



BEIMA



Remote control



SAP-PRV93EH      SAP-FTRV...EH

The air conditioner can either be mounted on the ceiling or placed on the floor.



SAP-CRVE...EH

- DC-Inverter technology for precise temperature control
- Most suitable air flow for heating operation
- Powerful & comfortable with compact design
- Lightweight and compact
- Automatic restart function
- Auto sweep control
- Powerful start function for rapid cooling/heating
- Automatic cooling & heating changeover to maintain the desired temperature
- Cooling & Heating operation down to -15°C (size 184 & 244)
- Sleek Multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Easy-to-clean filter prevents mould or bacteria from occurring
- Washable front panel
- Right set back/Economy mode function ensures gentle and saving energy cooling and heating

# Residential products

SAP-FCR94EH • SAP-FTCR124EH  
SAP-FTCR184EH • SAP-FTCR224EH

Power Range from 2.65 kW to 6.4 kW

Performance	SPLIT SYSTEM HEAT PUMP		SPLIT SYSTEM COOLING		SPLIT SYSTEM HEATING	
	Size 94	Size 124	Size 184	Size 224	Size 94	Size 124
Cooling	94	124	184	224	94	124
Power input	94	124	184	224	94	124
CO <sub>2</sub> / GWP	94	124	184	224	94	124
Energy class	A	A	A	A	A	A
Running efficiency	A	B	B	B	A	B
Annual energy (kWh cooling)	389	472	-	527	-	-

Indoor Unit	SAP-FCR94EH(A)		SAP-FTCR124EH(A)		SAP-FTCR184EH		SAP-FTCR224EH	
	Size 94	Size 124	Size 184	Size 224	Size 94	Size 124	Size 184	Size 224
Air circulation (m <sup>3</sup> /h)	400	400	-	-	-	-	-	-
Minimum flow rate (L/s)	1.0	1.0	-	-	-	-	-	-
Sound Power Level (dB)	35.4	34	34	34	-	-	-	-
Sound Pressure Level (dB(A))	35.8	34.8/34.0	34.8/34.0	34.8/34.0	-	-	-	-
Dimensions (width x height x depth) (mm)	400	700x300x200	800x300x180	800x300x180	800x300x180	800x300x180	800x300x180	800x300x180
Net weight (kg)	14	18.8	23.5	23.5	-	-	-	-
Power supply	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz

Indoor Unit	SAP-CR94EH(A)		SAP-CTR124EH(A)		SAP-CTR184EH		SAP-CTR224EH	
	Size 94	Size 124	Size 184	Size 224	Size 94	Size 124	Size 184	Size 224
Stand Power Level (W)	35.4	35	35	35	35	35	35	35
Stand Pressure Level (Pa)	35.4	47	45	45	35	35	35	35
Dimensions (width x height x depth) (mm)	400	540x750x200	800x750x200	800x750x200	800x750x200	800x750x200	800x750x200	800x750x200
Net weight (kg)	14	22	27	27	33	33	33	33
Power supply	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz	230 V~/50 Hz

Antifreeze detail	Size 94		Size 124		Size 184		Size 224	
	Line diameter (Nominal/Max)	mm/mm						
Max piping length	10	12	10	12	10	12	10	12
Max elevation diff. (G3/4" - G3/4")	0	2	0	2	0	2	0	2
Charging piping length	0	7.5	0	7.5	0	7.5	0	7.5
Amount of additional refrigerant gas	15	15	15	15	20	20	20	20

**Mounting conditions**  
Cooling: Indoor air temperature 27°C, 50%RH; Max. outdoor air temperature 40°C/30°C (RH)  
Heating: Indoor air temperature 19°C, 50%RH (outdoor air temperature 20°C/10°C (RH))



PRICE	
Indoor unit price	Euro 360.00
Outdoor unit price	Euro 1.360.00

A Class

B100A

# Floor and floor/ceiling units constant speed



Remote control



SAP-FTCR...EH(A)



SAP-FCR...EH(A)

The air conditioner can either be mounted on the ceiling or placed on the floor.



SAP-CR...EH(A)

- Lightweight and compact
- Low noise design
- Auto restart after power failure
- Most suitable air flow for heating operation
- Smart Multi-functional wireless remote control with built-in thermometer sensor
- Holiday heating system prevents any cold drafts in the room
- Automatic cooling & heating: changes over to maintain the desired temperature
- 24-hour clock with on/off program timer
- Automatic flap control provide uniform air flow in the room
- Easy-to-clean filter prevents mould or bacteria from occurring
- Washable front panel
- Right set back/Economy mode function ensures gentle and saving energy cooling and heating

# Residential products

SAP-FCLR94E • SAP-FTCLR124E  
SAP-FTCLR184E/D • SAP-FTCLR224D

Power Range from 2.65 kW to 6.4 kW

Performance	CONSTANT SPEED LINE AMBIENT			
	size 94 Ceiling	size 124 Ceiling	size 184 Ceiling	size 224 Ceiling
Capacity	9.8	2.65	2.65	2.65
Power input	9	8.25	10.5	10.5
EER	9.19	3.21	3.41	3.41
Energy class	A	A	A	A
Running energy cost / kWh	€	1.9	1.8	1.8
Annual energy consumption (costs) kWh	1401	822.5	1277.1	1477.1

Technical Data	SAP-FR94E(A)	SAP-FTR124E(A)	SAP-FTR184E	SAP-FTR224E
	Refrigerant (HFC)	404	700	-
Minimum current	1.0	1.0	1.0	1.0
Sound Power Level (LWA)	54	54	54	54
Sound Pressure Level (LpA), dB	34/34/35	34/34/35	34/34/35	34/34/35
Dimensions (WxDxH)	100x100x200	100x100x200	100x100x200	100x100x200
Net weight	kg	16.8	23.5	23.5
Power inputs	1 ph, Hz	-	-	-
		230, 1~8, 50	230, 1~8, 50	230, 1~8, 50

Technical Data	SAP-CLR94E(A)	SAP-CLR124E(A)	SAP-CLR184E(A)	SAP-CLR224E(A)
	Refrigerant (HFC)	32	37	37
Sound Power Level (LWA)	55.4	47	49	57
Sound Pressure Level (LpA), dB	35	35	37	37
Dimensions (WxDxH)	145x100x200	145x100x200	175x100x200	175x100x200
Net weight	kg	35	41	52
Power inputs	1 ph, Hz	-	230, 1~8, 50	230, 1~8, 50
		230, 1~8, 50	230, 1~8, 50	230, 1~8, 50

Additional circuit	size 94	size 124	size 184	size 224	
	Tube diameter (mm) / Nominal flow (kg/h)	6.0/176 - 8.0/230	8.0/176 - 10.0/230	8.0/176 - 12.0/230	8.0/176 - 12.0/230
Max piping length	m	15	15	30	30
Max elevation difference (D.E.) -10..+10	m	1	2	2	2
Charging piping length	m	7.5	7.5	7.5	10
Amount of additional refrigerant	g/m	15	15	20	20

**Rating conditions**  
Cooling (initial or temperature) 27°C (26/24°C) 80% (relative humidity) 80°C (28-19°C) 80%  
heating (initial or temperature) 27°C (19°C) 80% (relative humidity) 27°C (19°C) 80%

Specifications subject to change without notice.  
Note: Size 184 and 224 are separate units  
\*2009 unit measure at the time of purchase.

PRICE	
Customer unit price	€/unit
Customer unit price	€/unit
Set price	€/unit
	1.000,00
	1.200,00



**A Class**

# Floor and floor/ceiling units constant speed type



Remote control



The air conditioner can either be mounted on the ceiling or placed on the floor



SAP-CLR...E(A)

- Low ambient function - ensures continuous cooling operation even in cold region
- Automatic flap control provides uniform air flow in the room
- Easy-to-clean filter prevents mould or bacteria from colonising
- Lightweight and compact
- Low noise design
- Auto restart after power failure
- Smart Multi-function wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Night set back/Economy mode function ensures gentle and saving energy cooling

# Residential products

SAP-FCR94E • SAP-FTCR124E  
SAP-FTCR184E/D • SAP-FTCR224E

Power Range from 2.65 kW to 6.4 kW

Performance	CONSTANT SPEED (2000/2000) kW/E			
	Size M Cooling	Size 124 Cooling	Size 184 Cooling	Size 224 Cooling
Capacity	94	2.65	3.6	5.1
Power input	9	0.25	0.35	0.4
EER	9.18	12.21	13.41	13.4
Energy class	A	A	A	A
Running current (A) / (A)	1.3	1.3	1.3	1.3
Annual energy consumption (kWh)	800	812.5	827.5	840

SIZING DATA	SAP-FTCR94E(A)			
	SAP-FTCR94E(A)	SAP-FTCR124E(A)	SAP-FTCR184E(A)	SAP-FTCR224E
Air circulation (m³/h)	400	700	—	—
Moisture removed (g/h)	1.8	4.2	—	—
Sound Power Level (dB)	58.4	54	—	—
Sound Pressure Level (dB, A)	24.82/21.91	23.45/21.91	20.91/20.73	20.91/20.73
Dimensions (mm)	129x730x295	160x730x295	180x730x295	180x730x295
Net weight	19	21.5	25.5	25.5
Power supply	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz

SIZING DATA	SAP-FCR94E(A)			
	SAP-FCR94E(A)	SAP-FCR124E(A)	SAP-FCR184E(A)	SAP-FCR224E
Sound Power Level (dB)	58.4	55	57	57
Sound Pressure Level (dB)	58.4	47	49	57
Dimensions (mm)	129x730x295	160x730x295	179x730x295	179x730x295
Net weight	19	20	27	32
Power supply	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz	230 V~ 50 Hz

SIZING DATA	SAP-94			
	Size 94 Cooling	Size 124 Cooling	Size 184 Cooling	Size 224 Cooling
Total diameter (mm) / noise (dB)	100/50	120/50/55	130/50/55	130/50/55
Max piping length	10	15	15	15
Max elevation difference D.E. (m)	10	7	7	7
Optimum piping length	5.0	7.0	7.0	7.0
Amount of additional refrigerant	0.0	0.0	0.0	0.0

Rating conditions  
Cooling: Input air temperature 27°C / 50% RH, Outdoor air temperature 30°C / 14°C RH  
Heating: Input air temperature 19°C / 50% RH, Outdoor air temperature 20°C / 14°C RH

Specification subject to change without notice  
WEEE: 2002/96/EC Directive 2002/96/EC



Dimensions (mm)	PRICE
Height and width	800,-
Height and depth	1000,-
Set price	1.000,-

# Floor and floor/ceiling units constant speed type



Remote control



SAP-FTCR...E(A)



SAP-FCR...E(A)

The air conditioner can either be mounted on the ceiling or placed on the floor.



SAP-CRL-E(A)

- Lightweight and compact
- Low noise design
- Auto restart after power failure
- Sleek multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Automatic flap control provides uniform air flow in the room
- Easy-to-clean filter prevents mould or bacteria from colonising
- Washable front panel
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

SAP-XCRV93EH • SAP-XCRV123EH • SAP-XCRV184EH

Power Range from 2.65 kW to 5.15 kW

Performance	INVERTER HEAT PUMP					
	Size 93		Size 123		Size 184	
Cooling	Heating	Cooling	Heating	Cooling	Heating	
Capacity	1.6	-12.6°	-15.6°	-13.5°	-14.3°	-15.1°
Power input	0.8	-	-	-	-	-
EER / COP	3.09	-	-	-	-	-
Energy class	A+	-	-	-	-	-
Running amperes	3	-	-	-	-	-
Annual energy consumption cooling	1200	-	-	-	-	-
Indoor Unit						
Re-circulation (%)	HOT	-	-	-	-	-
Mounting terminal	L-shaped	-	-	-	-	-
Sound Power Level (dB)	38.4	-	-	-	-	-
Sound Pressure Level L <sub>WA</sub> (dB)	38.4	-	-	-	-	-
Dimensions (HxWxD) - Unit	mm	296x375x175	296x375x175	296x375x175	296x375x175	296x375x175
Dimensions (HxWxD) - Panel	mm	54x120x120	54x120x120	54x120x120	54x120x120	54x120x120
Net weight - Unit	kg	16.1	16.1	16.1	16.1	16.1
Net weight - Panel	kg	2.1	2.1	2.1	2.1	2.1
Power supply	1,200 W	-	230, 1~6, 50	-	230, 1~6, 50	-
Outdoor Unit						
Sound Power Level (dB)	38.4	38	38	38	37	38
Sound Pressure Level (dB)	38.4	40	47	47	49	51
Dimensions (HxWxD)	mm	147x300x100	147x300x100	147x300x100	147x300x100	147x300x100
Net weight	kg	34	30	30	44	44
Power supply	1,200 W	-	230, 1~6, 50	-	230, 1~6, 50	-
Rohs compliant circuit						
	Size 93	Size 123	Size 184			
Tube diameter (inner/outer)	8/10 mm	8.3/10.6 (10.1/12.5) mm	8.3/10.6 (10.1/12.5) mm	8.3/10.6 (10.1/12.5) mm		
Min. piping length	m	15	15	15		
Min. receiver pH 5.0-10.	m	7	7	7		
Charging piping length	m	7.3	7.3	7.3		
Amount of additional refrigerant, g/m	g/m	15	15	15		
Rating conditions						
Cooling: Indoor air temperature 27°C DB/20°C WB; Outdoor air temperature 30°C DB/20°C WB						
Heating: Indoor air temperature 20°C DB/18°C WB; Outdoor air temperature 7°C DB/6°C WB						
Specification subject to change without notice. Note: Only EN 10202 test data is available. *Only available at the time of purchase.						
PRICE						
Indoor unit price	EUR	800.00	800.00	800.00	800.00	800.00
Indoor unit price	EUR	1000.00	1000.00	1000.00	1000.00	1000.00
Set price	EUR	1300.00	1300.00	1300.00	1300.00	1300.00



Remote control

Panel

PNT-XMTRV93EHA



SAP-CRV...EH(FP)



SAP-XRV...EH

Super compact design to fit precisely  
into 80x80 standard ceiling modules

- Quick and easy installation on the ceiling
- Lightweight and compact design fits precisely into standard ceiling modules
- DC-inverter technology for precise temperature control
- Most suitable air flow for heating operation
- Lightweight and compact
- Automatic restart function
- Auto air sweep control provides uniform air flow in the room
- Powerful start function for rapid cooling/heating
- Automatic cooling & heating changeover to maintain the desired temperature
- Cooling & Heating operation down to -15°C (only size 184)
- The built-in heat pump performs to raise the drain pipe up to 50cm
- Stainless Multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- Easy-to-clean filter prevents mould or bacteria from occurring
- The modern style panel can be easily removed and washed
- Quiet operation
- night set back/Economy mode function ensures gentle and saving energy cooling and heating



## SAP-XCR94EH • SAP-XCR124EH • SAP-XCR184EH

Power Range from 2.87 kW to 5.15 kW

Reference	CONSTANT SPEED HEAT PUMP		size 94		size 124		size 184	
	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity	4.8	2.87	3.1	1.85	4.52	2.15	6.7	3.7
Power input	W	873	775	1075	1052	17	-	-
(EER - COP)	W/W	-	-	3.4	4.28	-	-	-
Energy class	-	A	A	A	A	A	A	A
Running pressure	kPa	4.5	4.3	5.2	5.3	-	-	-
Annual energy costs (cooling)	£/yr	427.3	-	527.5	-	-	-	-

Reference	SAP-XR124EH(A)		SAP-XR184EH		SAP-XR184EH	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
Air Circulation (m³/h)	47.9	100	700	-	-	-
Moisture removed	1.88kg/h	1.2	-	-	-	-
Sound Power Level (dB)	38-A	52	52	52	-	-
Sound Pressure Level (L90dB)	38-A	36/35/42	36/35/42	36/35/42	36/35/42	36/35/42
Dimensions HxWxD (mm)	mm	290x75x75	290x75x75	290x75x75	340x75x75	340x75x75
Dimensions HxWxD - Panel	mm	340x60x75	340x60x75	340x60x75	340x60x75	340x60x75
Net weight - Unit	kg	14.2	18.3	18.3	18.3	18.3
Net weight - Panel	kg	23	23	23	23	23
Power supply	V (A), Hz	-	230 (1~6.5), 50	-	230 (1~6.5), 50	-

Reference	SAP-XR124EH		SAP-XR184EH		SAP-XR184EH	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
Sound Power Level (dB)	38-A	58	57	57	47	46
Sound Pressure Level (dB)	38-A	47	46	46	34	34
Dimensions HxWxD (mm)	mm	340x75x75	340x75x75	340x75x75	340x75x75	340x75x75
Net weight	kg	26	31	31	44	44
Power supply	V (A), Hz	-	230 (1~6.5), 50	-	230 (1~6.5), 50	-

Reference	SAP-XR124EH		SAP-XR184EH		SAP-XR184EH	
	Cooling	Heating	Cooling	Heating	Cooling	Heating
Total diameter Nominal/RDS	mm	4.250/4.1/5.250/5	4.250/4.1/5.250/5	4.250/4.1/5.250/5	4.250/4.1/5.250/5	4.250/4.1/5.250/5
Min piping length	m	12	10	10	10	10
Min distance off Duct (L) (m)	m	1	1	1	1	1
Charging piping length	m	2.5	2.5	2.5	2.5	2.5
Amount of additional refrigerant (g/m)	kg	19	19	19	19	19

**Airing conditions:**  
Cooling indoor air temperature 27°C DB/26°C WB; Coolside air temperature 26°C DB/26°C WB  
Heating indoor air temperature 20°C DB/18°C WB; Coolside air temperature 17°C DB/16°C WB

Reference	PRICE		PRICE	
	Indoor unit price	Euro	Indoor unit price	Euro
	Excl. VAT	Excl. VAT	Excl. VAT	Excl. VAT
SAP-XR124EH(A)	1.000.00	800.00	1.000.00	800.00
SAP-XR184EH(A)	1.500.00	1.200.00	1.500.00	1.200.00



**A Class**

B100A



Remote control

Panel

SAP-XR...EH(A)



SAP-XR...EH(A)

Super compact design to fit precisely  
60x60 standard ceiling modules

- Quick and easy installation on the ceiling
- Lightweight and compact design fit precisely into standard ceiling modules
- Low noise design
- Auto restart after power failure
- Auto air bypass control provides uniform air flow in the room
- Simple, Multi-functional wireless remote control with built-in temperature sensor
- Hot start heating system prevents any cold blasts in the room
- The built-in drain pump performs to raise the drain pipe up to 50cm.
- Automatic cooling & heating changes to maintain the desired temperature
- 24-hour clock with on/off program times
- Easy-to-clean filter prevents mould or bacteria from occurring
- The modern style panel can be easily removed and washed
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating



# Residential products

## Semi-concealed 4 way constant speed type

SAP-XCLR94E • SAP-XCLR124E • SAP-XCLR184E/D

Power Range from 2.87 kW to 5.15 kW

Performance	CONSTANT SPEED LOW AMBIENT		
	SAP 94 Cooling	SAP 124 Cooling	SAP 184 Cooling
Cooling	4.0	3.67	3.65
Power Input	W	375	507
EEI	W/W	3.29	3.4
Energy class	A	B	B
Running current (typ.) [A]	1.1	1.7	1.7
Annual energy cost (cooling)	£/yr	437.3	527.3

Module Unit	SAP-28H(E/A)	SAP-35H(E/A)	SAP-45H(E/A)
Air flowrate (m³/h)	27.9	39.9	59.9
Module weight	10.0kg	13.1	18.0
Sound Power Level (LWA)	35.4	51	52
Sound Pressure Level (LWM10)	28.0	36.9/43	36.9/45
Dimensions (WxDxH) - Unit	mm	306x75x579	396x75x579
Dimensions (WxDxH) - Panel	mm	340x70x578	444x70x578
Net weight / Unit	kg	18.5	26.3
Net weight / Panel	kg	23	23
Power supply	V, A, Hz	230, 1~6, 50	230, 1~6, 50

Module Unit	SAP-12.9H(E/A)	SAP-17.9H(E/A)	SAP-23.9H(E/A)
Sound Power Level (LWA)	35.4	51	51
Sound Pressure Level (LWM10)	35.4	47	49
Dimensions (WxDxH)	mm	340x70x578	444x70x578
Net weight	kg	18	27
Power supply	V, A, Hz	230, 1~6, 50	230, 1~6, 50 / 230, 3~6, 50

Refrigerant circuit	SAP-94H(E/A)	SAP-124H(E/A)	SAP-184H(E/A)
Total diameter, refrigerant pipe	mm/m	8.35/4.4 / 8.32/3.8	8.35/4.4 / 8.32/3.8
Max piping length	m	75	75
No elbows (R 50) - L	m	7	7
Chrompex piping length	m	7.5	7.5
Amount of additional refrigerant	g/m	15	15

**Rating conditions:**  
Cooling season air temperature: 21°C/60°F C/WB (Quiescent air temperature: 20°C/68°F C/WB)  
Heating: Return air temperature: 20°C/68°F C/WB; Outside air temperature: 17°C/63°F C/WB

Specifications subject to change without notice.  
Subject to change without notice. Data: SAP-184H(E/A) panel unit only.

PRICE		
Indoor unit price	£/unit	500.00
Outdoor unit price	£/unit	800.00
Set price	£/unit	1300.00
		1200.00



A Class

B1/B2



Remote control

Panel

PNR-X9HEHA



SAP-CLR-E(A)



SAP-XR-E(A)

Super compact design to fit precisely  
B1/B2 standard ceiling modules.

- Low ambient function: ensures continuous cooling operation even in cold region.
- The built-in drain pump performs to raise the drain pipe up to 50cm.
- Quick and easy installation on the ceiling.
- Lightweight and compact design fit precisely into standard ceiling modules.
- Low noise design.
- Auto restart after power failure.
- Auto air sweep: control provides uniform air flow in the room.
- Smart Multi-functional wireless remote control with built-in temperature sensor.
- Night set back/Economix mode function ensures gentle and saving energy cooling.



SAP-XCR94E • SAP-XCR124E • SAP-XCR184E/D

Power Range from 2.87 kW to 5.15 kW

Reference	CONSTANT SPEED COOLING ONLY		
	size 94 Cooling	size 124 Cooling	size 184 Cooling
Capacity	4.8	5.0	5.15
Power input	2.87	3.02	3.17
COP	3.19	3.28	3.4
Energy class	A	B	B
Running current (A) / (B)	1.1	1.3	1.2
Annual energy cost (cooling)	£265	£273	£275

Reference	SAP-XR94E(A)	SAP-XR124E(A)	SAP-XR184E
Air Circulation (m³/h)	198	258	-
Moisture removed	0.07	0.1	-
Sound Power Level (dB)	55.4	52	-
Sound Pressure Level (L90%)	38.4	38.0/38.1	38.0/38.1
Dimensions (HxWxD) - total mm	286x75x175	386x75x175	386x75x175
Dimensions (HxWxD) - Panel mm	34x75x175	44x75x175	44x75x175
Net weight - Unit	16.2	16.2	16.3
Net weight - Panel	1.1	2.3	2.3
Power supply	230, 1~50, 50	230, 1~50, 50	230, 1~50, 50

Reference	SAP-XR94E(A)	SAP-XR124E(A)	SAP-XR184E(A)
Sound Power Level (dB)	55.4	51	51
Sound Pressure Level (dB)	41	40	40
Dimensions (HxWxD) mm	34x75x175	44x75x175	44x75x175
Net weight	16.2	16.2	16.3
Power supply	230, 1~50, 50	230, 1~50, 50	230, 1~50, 50

Reference	SAP-XR94E(A)	SAP-XR124E(A)	SAP-XR184E(A)
Total diameter (Nominal) mm	30mm	42.5x41.9x52.0/58	42.5x41.9x52.0/58
Min piping length	0	12	10
Min distance off floor (L) mm	0	7	7
Charging piping length	0	7.5	7.5
Amount of additional refrigerant g/m	0.5	1.0	1.0

Rating conditions:  
Cooling: Indoor air temperature 27°C, 30% RH; Outdoor air temperature 35°C, 10% RH  
Heating: Indoor air temperature 20°C, 30% RH; Outdoor air temperature 7°C, 50% RH

Specification subject to change before issue.  
Refer to the technical notes  
\*Based on performance at the time of publication.

Reference	PRICE		
	Refiner unit price	Euro	£500.00
	Refiner unit price	Euro	£500.00
SAP-XR94E(A)	Net price	Euro	1,300.00
SAP-XR124E(A)	Net price	Euro	1,300.00



A Class

B1/B2



Remote control



SAP-XR...E(A)



PNR-XR94EHA

Super compact design to fit precisely  
into 600x600 standard ceiling modules.



SAP-CR...E(A)

- Quick and easy installation on the ceiling.
- Lightweight and compact design. Fit perfectly into standard ceiling modules.
- Low noise design.
- Auto restart after power failure.
- Auto air sweep control provides uniform air flow in the rooms.
- Steak Multi-functional wireless remote control with built-in temperature sensor.
- The built-in drain pump performs to move the drain pipe up to 50cm.
- 24-hour clock with on/off programs timer.
- Easy-to-clean filter prevents mould or bacteria from occurring.
- The modern style panel can be easily removed and washed.
- Night set back/Economy mode function ensures gentle and saving energy cooling.

SAP-UCRV93EH \* SAP-UCRV123EH  
SAP-UCRV184EH \* SAP-UCRV244EH

Power Range from 2.65 kW to 7.1 kW

Performance	INVERTER HEAT PUMP			
	Size 93	Size 123	Size 184	Size 244
Cooling	10.6°C*	10.6°C*	10.6°C	10.6°C*
Heating	-15.0°C	-15.0°C	-15.0°C	-15.0°C
ECO / COP	3.89	3.89	3.89	3.89
Energy class	A+	A+	A+	A+
Running expenses	0	0	0	0
Annual energy costs (cooling)	0.00	0.00	0.00	0.00

Indoor Unit	SAP-URV93EH	SAP-URV123EH	SAP-URV184EH	SAP-URV244EH
All-cooling (W)	30.0	30.0	30.0	30.0
Moisture removal	1.0 (g/h)	1.0 (g/h)	1.0 (g/h)	1.0 (g/h)
External static pressure (mm H2O)	0.0	0.0	0.0	0.0
Sound Pressure Level (dB, A)*	38.4	38.4	38.4	38.4
Dimensions (WxDxH) (mm)	900 x 250 x 200	1400 x 250 x 200	2000 x 250 x 200	2600 x 250 x 200
Net weight	10	15	35	55
Power supply	230 V~50	230 V~50	230 V~50	230 V~50

Outdoor Unit	SAP-URV93EH	SAP-URV123EH	SAP-URV184EH	SAP-URV244EH
Sound Power Level (dB)	40.4	42	43	44
Sound Pressure Level (dB)	40.4	42	43	44
Dimensions (WxDxH) (mm)	1400 x 250 x 200	1400 x 250 x 200	1700 x 250 x 200	1700 x 250 x 200
Net weight	10	14	44	59
Power supply	230 V~50	230 V~50	230 V~50	230 V~50

Refrigerant circuit	Size 93	Size 123	Size 184	Size 244
Line diameter (mm)	10 mm	10 mm	10 mm	10 mm
Max. piping length (m)	4.50 (10.8'/14.7'')	6.30 (14.8'/13.2'')	6.30 (14.8'/13.2'')	8.30 (17.6'/15.8'')
Max. vertical diff. (L-G) (m)	0.5	1.0	1.0	1.0
Charging piping length (m)	7.5	7.5	10	10
Amount of additional refrigerant (g)	13	13	25	25

**Operating conditions**  
Cooling: indoor air temperature 27°C (80.6°F) / outdoor air temperature 36°C (96.8°F)  
heating: indoor air temperature 20°C (68°F) / outdoor air temperature 7°C (45.4°F)

Indoor unit price	Size 93	Size 123	Size 184	Size 244
Base price	£600	£600	£600	£600
Delivery price	£600	£600	£600	£600
Total price	£600	£600	£600	£600



Remote control

Receiver



SAP-URV.EH

Top class performance of ultra-low noise level has been achieved for places which need expressive air conditioning

- Unified body of 260mm height to match modern architectural standards
- The most suitable for irregular-shaped rooms
- Using the bypass cable the static pressure can be increased to satisfy any ductwork need
- DC-Inverter technology for precise temperature control
- Lightweight and compact
- Automatic restart function
- Powerful start function for rapid cooling/heating
- Automatic cooling & heating changes over to maintain the desired temperature
- External electric box for quick wiring connection and easy serviceability
- Cooling & Heating operation down to -15°C (size 184 & 244)
- Stainless Multi-functional wireless remote control with built-in temperature sensor
- 24-hour clock with on/off program timer
- The included air filter is easily accessible from the bottom of the unit
- Night set back/Economy mode function ensures gentle and energy saving cooling and heating

## SAP-UCR94EH • SAP-UCR124EH SAP-UCR184EH • SAP-UCR224EH

Power Range from 2.65 kW to 6.4 kW

Performance	CONSTANT SPEED HEAT PUMP			
	size 94		size 124	
	Cooling	Heating	Cooling	Heating
Coeff. of Performance	9.8	3.2	4.5	4.07
Power input	9.8	260	380	1126
CO2 / GWP	9.8	1.0	1.0	1.0
Energy class	A	A	A	A
Running expenses	£	4.1	4.2	5.1
Annual energy costs (cooling)	£/yr	340	342	386
Annual energy costs (heating)	£/yr	—	—	320

Indoor Unit	SAP-UR94EH(A)		SAP-UR124EH(A)		SAP-UR184EH		SAP-UR224EH	
	Size 94	Size 124	Size 124	Size 124	Size 184	Size 184	Size 224	Size 224
Air circulation (m³/h)	400	600	—	—	—	—	—	—
Minimum removed air (m³/h)	100	—	—	—	—	—	—	—
External static press. (unbalanced) (Pa)	—	—	—	—	—	—	—	—
Sound Power Level (dB)	45.4	54	54	54	54	54	54	54
Sound Pressure Level (L90dB)	45.4	45.4/45.6	45.4/45.6	45.4/45.6	45.4/45.6	45.4/45.6	45.4/45.6	45.4/45.6
Dimensions (mm)	int.	260x320x271	300x320x271	300x320x271	300x320x271	300x320x271	300x320x271	300x320x271
Net weight	kg	30	30	30	30	30	30	30
Power supply	V/A (Hz)	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30

Outdoor Unit	SAP-CR94EH(A)		SAP-CR124EH(A)		SAP-CR184EH		SAP-CR224EH	
	Size 94	Size 124	Size 124	Size 124	Size 184	Size 184	Size 224	Size 224
Sound Power Level (dB)	50.4	58	57	57	57	57	57	57
Sound Pressure Level (L90dB)	50.4	47	49	49	49	49	49	49
Dimensions (mm)	int.	1400x720x200	1600x720x200	1600x720x200	1600x720x200	1600x720x200	1600x720x200	1600x720x200
Net weight	kg	39	37	37	37	37	37	37
Power supply	V/A (Hz)	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30	230/1~6.30

Refrigerant circuit	size 94		size 124		size 184		size 224	
	Tube diameter - Normal Mode	mm/m						
Tube diameter - Normal Mode	m/m	8.35/40-8.50/36	8.35/40-8.50/36	8.35/40-8.50/36	8.35/40-8.50/36	8.35/40-8.50/36	8.35/40-8.50/36	8.35/40-8.50/36
Max piping length	m	75	75	75	75	75	75	75
Max elevation diff. (L/D) - 1.0	m	2	2	2	2	2	2	2
Charging piping length	m	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Amount of additional refrigerant	kg	7.5	7.5	7.5	7.5	7.5	7.5	7.5

Operating conditions	Cooling indoor air temperature (°C) 26.0/17.0-26.0/16.0		Heating indoor air temperature (°C) 20.0/16.0-20.0/16.0		Cooling outdoor air temperature (°C) 28.0/17.0-28.0/16.0		Heating outdoor air temperature (°C) 10.0/5.0-10.0/5.0	
	Min. indoor air temperature (°C)	Max. indoor air temperature (°C)	Min. indoor air temperature (°C)	Max. indoor air temperature (°C)	Min. outdoor air temperature (°C)	Max. outdoor air temperature (°C)	Min. outdoor air temperature (°C)	Max. outdoor air temperature (°C)
Cooling indoor air temperature (°C) 26.0/17.0-26.0/16.0	—	—	—	—	—	—	—	—
Heating indoor air temperature (°C) 20.0/16.0-20.0/16.0	—	—	—	—	—	—	—	—

Indoor unit price	PRICE	
	Euro	£
Indoor unit price	500.00	600.00
Indoor unit price	600.00	700.00
Indoor unit price	1,300.00	1,300.00



A Class

B1/B2



Remote control  
Receiver



SAP-CR\_EH(A)

Top-class performance of ultra-low noise level has been achieved for places which need expressive air conditioning

- Unified body of 260mm height to match modern architectural standards
- The most suitable for irregular shaped rooms
- Using the booster cable the static pressure can be increased to satisfy any ductwork need
- Auto restart after power failure
- Multi-functional infrared remote controller with built-in temperature sensor
- Hot start heating system prevents any cold blasts in the room
- External electric box for quick wiring connection and easy serviceability
- Automatic cooling & heating changesover to maintain the desired temperature
- 24-hour clock with on/off program timer
- The included air filter is easily accessible from the bottom of the unit
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating

SAP-UCLR94E • SAP-UCLR124E  
SAP-UCLR184E/D • SAP-UCLR224D

Power Range from 3.07 kW to 6.4 kW

Performance	CONSTANT SPEED LINE AMBIENT			
	size 94 Cooling	size 124 Cooling	size 184 Cooling	size 224 Cooling
Capacity	4.07	5.07	7.11	8.4
Power input	0.9	1.02	1.08	1.1
EER	9.89	10.0	10.8	10.8
Energy class	A	A	A	A
Running current (Aph / 3ph)	1.1	1.3	1.7	1.9
Annual energy consumption (kWh/yr)	440	505	705	775

Indoor Unit	SAP-UH94E(A)	SAP-UH124E(A)	SAP-UH184E	SAP-UH224E
	10.7m	10.9	10.9	10.9
Maximum removal	1.0m	1.1	1.1	1.1
External static pressure (maximum)	20	20	20	20
Sound Power Level (dB)	38.4	38.4	38.4	38.4
Sound Pressure Level (dBA), Net	38.4	40.0±0.5	40.0±0.5	40.0±0.5
Dimensions (WxDxH)	900	1060x250x205	1060x250x205	1060x250x205
Net weight	9kg	10	10	10
Power supply	2 ph. 50	2 ph. 50	2 ph. 50	2 ph. 50

Indoor Unit	SAP-UH94E(A)	SAP-UH124E(A)	SAP-UH184E(A)	SAP-UH224E
	38.4	38.4	38.4	38.4
Sound Pressure Level (dB)	38.4	41	41	41
Dimensions (WxDxH)	900	1060x250x205	1060x250x205	1060x250x205
Net weight	9kg	10	10	10
Power supply	2 ph. 50	2 ph. 50	2 ph. 50	2 ph. 50

Refrigerant circuit	size 94	size 124	size 184	size 224
Total diameter (mm) (max. 1000)	4.30(16.9-16.32)16	8.20(16.9-16.32)16	8.20(16.9-17.7)16	8.20(16.9-17.88)16
Max piping length	10	10	10	10
Max elevation difference (E-L) (-10)	2	2	2	2
Charging piping length	7.5	7.5	7.5	7.5
Amount of additional refrigerant	0.10	0.10	0.10	0.10

**Rating conditions**  
Cooling: indoor air temperature 27°C/28°F; 60% (relative humidity at 27°C/80°F)  
Heating: indoor air temperature 20°C/68°F; outdoor air temperature 17°C/63°F; 60%  
Relative humidity at 20°C/68°F

Operating range required to change effect value:  
heating: from 10.5°C/50.9°F to 25°C/77°F  
cooling: from 20°C/68°F to 35°C/95°F  
(data are available on the basis of production)



PRICE	
Indoor unit price	€601.00
Outdoor unit price	€601.00
Set price	€1,202.00



Remote control

Receiver



SAP-UH.E(A)



SAP-CLR-E(A)

Top class performance of ultra-low noise level has been achieved for places which need expressive air conditioning

- Low ambient function ensures continuous cooling operation even in cold region
- Unified body of 260mm height to match modern architectural standards
- The front suitable for irregular shaped rooms
- Using the booster cable the static pressure can be increased to satisfy any ductwork need
- Auto restart after power failure
- Multi-functional infrared remote controller with built-in temperature sensor
- External electric box for quick wiring connection and easy service
- 24-hour clock with on/off program timer
- The included air filter is easily accessible from the bottom of the unit
- Night set back/Economy mode function ensures gentle and saving energy cooling

SAP-UCR94E \* SAP-UCR124E  
SAP-UCR184E/D \* SAP-UCR224E

Power Range from 3.07 kW to 6.4 kW

Performance	CONSTANT SPEED COOLING MODE			
	Size 94 Cooling	Size 124 Cooling	Size 184 Cooling	Size 224 Cooling
Capacity	94	124	184	224
Power input	9.0	10.0	11.0	11.0
EEI	97.0	101.0	105.0	105.0
Energy class	A	A	A	A
Running current (A) / (B)	1.5	1.5	1.5	1.5
Annual energy consumption (kWh)	300	300	300	300

Technical Data	SAP-UCR94E	SAP-UCR124E	SAP-UCR184E	SAP-UCR224E
Air circulation (m³/h)	1070	1000	1000	1000
Motor removal	Direct	PS	PS	PS
External static pressure (mmH2O)	PS	40/50	40/50	40/50
Sound Power Level (LWA) (dB)	38.4	34	34	34
Sound Pressure Level (LWM) (dB)	40/42/45	40/42/45	40/42/45	40/42/45
Dimensions (WxDxH)	900	1060x512x271	1060x512x271	1060x512x271
Net weight	29	30	30	30
Power supply	230 V~50 Hz	230 V~50 Hz	230 V~50 Hz	230 V~50 Hz

Technical Data	SAP-UCR94E	SAP-UCR124E	SAP-UCR184E	SAP-UCR224E
Sound Power Level (dB)	38.4	37	37	37
Sound Pressure Level (dB)	38.4	41	40	40
Dimensions (WxDxH)	900	1060x512x271	1060x512x271	1060x512x271
Net weight	29	37	37	37
Power supply	230 V~50 Hz	230 V~50 Hz	230 V~50 Hz	230 V~50 Hz

Technical Data	Size 94	Size 124	Size 184	Size 224
Total diameter (Nominal) (mm)	4,300 (6.132) (9)	4,300 (6.132) (9)	4,300 (6.132) (9)	4,300 (6.132) (9)
Max piping length (m)	10	10	10	10
Max elevation difference D.E. (m)	1.0	1	1	1
Optimum piping length (m)	5.0	7.0	7.0	7.0
Amount of additional refrigerant (g/m)	0.0	1.0	1.0	1.0

Rating conditions  
Cooling: Input air temperature 27°C (80.6°F), 40% relative humidity or temperature 40°C (104°F)  
Heating: Input air temperature 15°C (59°F), 40% relative humidity or temperature 20°C (68°F)

Specification values at design ambient conditions  
Input: 30°C (86°F) and 20% relative humidity  
Output: 20°C (68°F) and 40% relative humidity  
• Only available at the time of ordering



PRICE	
Refiner unit price	Euro 500.00
Refiner unit price	Euro 600.00
Unit price	Euro 1,000.00
	1,000.00



Remote control

Receiver



SAP-UR-E(A)



SAP-CR-E(A)

Top class performance of ultra-low noise level has been achieved for places which need expressive air conditioning

- Unified body of 260mm height to match modern architectural standards
- The most suitable for irregular shaped rooms
- Using the booster cable the static pressure can be increased to satisfy any ductwork need
- Auto restart after power failure
- Multi-functional infrared remote controller with built-in temperature sensor
- External electric box for quick wiring connection and easy service
- 24-hour clock with on/off program timer
- The included air filter is easily accessible from the bottom of the unit
- Night set back/Economy mode function ensures gentle and saving energy cooling

SAP-CMRV1424EH(C) • SAP-CMRV1924EH(C)  
 SAP-CMRV1934EH(C) • SAP-CMRV2444EH(C)  
 SAP-CMRV3144EH(C)

Power Range from 4.0 kW to 8.0 kW

Outdoor unit Performance	INVERTER HEAT PUMP									
	SAP-CMRV1424EH(C)		SAP-CMRV1924EH(C)		SAP-CMRV1934EH(C)		SAP-CMRV2444EH(C)		SAP-CMRV3144EH(C)	
Capacity	KW	1.29/0.65	1.44/0.7	2.15/0.84	2.47/1.04	2.15/0.84	2.47/1.04	2.95/0.93	3.08/0.95	3.49/0.98
Power need	W	1.075*	1.005*	1.988*	2.025*	1.988*	2.025*	2.088*	2.175*	2.046*
EER / COP		4.22	4.06	3.31	4.21	3.26	4.27	3.46	4.31	4.34
Energy class	A	A	A	A	A	A	A	A	A	A
Rating amperes	A	6.1	4.1	7.32	7.7	7.32	7.7	8.07	8.37	7.98
Annual energy costs cooling	£/yr	462.5	647.5	947.5	1390	-	-	1622.5	-	1938
Compressors units	Nr.	2	2	2	2	2	2	2	2	2
Sound Pressure Level (L10)	dB(A)	47	48	50	52	50	52	50	52	52
Sound Power Level (Lw)	dB(A)	47	48	50	52	50	52	50	52	52
Tube diameter Nominal/Wide	mm	26 x 42 (4)	26 x 47 (5)	26 x 47 (4)	26 x 52 (6)	26 x 52 (6)	26 x 52 (6)	26 x 57 (6)	26 x 63 (7)	26 x 63 (6)
Max piping length - Total	m	30	40	45	45	40	45	40	50	50
Max piping length - per 100	m	10	15	25	25	25	25	25	30	30
Max elevation diff. 0.12 - 1.2	m	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Charging piping length - Total	m	30	40	45	45	40	45	40	50	50
Dimensions (HxWxD)	mm	1994x700x203	1994x800x203	1994x800x203	1994x800x203	1994x800x203	1994x800x203	1994x800x203	1994x800x203	1994x800x203
Net weight	kg	42	65	65	65	65	65	67	67	67
Power supply	VAC	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240

Note: At least one or more indoor units must be connected to the small outdoor unit.

Wall mounted unit Performance	SAP-KMRV14		SAP-KMRV19		SAP-KMRV1934		SAP-KMRV24		SAP-KMRV34	
	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity	KW	2.2	2.1	2.9	3.0	3.1	4.2	5.1	5.2	5.3
Air circulation (M)	air/h	-	-	-	-	-	-	-	-	-
Mounting height	m	2.05/2.5	-	-	-	-	-	-	-	-
Sound Pressure Level (L10)	dB(A)	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1	29.1/29.1
Sound Power Level (Lw)	dB(A)	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4	30.4
Tube diameter Nominal/Wide	mm	6.35/14.0	9.32/16.0	8.85/16.0	13.32/20.0	8.85/16.0	13.32/20.0	8.85/16.0	13.32/20.0	8.85/16.0
Dimensions (HxWxD)	mm	285x500x203	335x500x203	335x500x203	335x500x203	335x500x203	335x500x203	335x500x203	335x500x203	335x500x203
Net weight	kg	10	10	10	10	10	10	12	12	12
Power supply	VAC	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240	230/240

**Heating conditions:**  
 Cooling factor at temperature 20°C/20°C (14°C/14°C)  
 Heating factor at temperature 20°C/15°C (14°C/14°C)

**Specifications subject to change without notice**  
 \*Data for models of 10% lower capacity



PRICE		
Indoor unit price	Euro	500.00
Indoor unit price	Euro	600.00
Set price	Euro	1.000.00
	Euro	1.000.00



Remote control



SAP-K/M/RV.EH

A present design that is highly efficient and energy-saving



SAP-CMRV.EH(C)

- 5 system capacities from 4.0 up to 8.0 kW
- DC-Inverter technology for precise temperature control and low start current
- Twin rotary compressor; the dual rotors revolve smoothly in a well-balanced fashion for stable and efficient performance. This also contributes to increased comfort and rapid cooling & heating, as well as the unit's extra-quiet and economical operation
- Air-stop heating operation thanks to the exclusive hot gas bypass system by Sanyo
- Washable and reusable air cleaner filter
- Ion generator refreshes your room with negative ions
- Night set back/Economy mode function ensures gentle and saving energy cooling and heating
- Extended operating range down to -15°C in cooling (EHC models) and heating mode
- 24-hour clock with off/on program timer



### COMBINATIONS TABLE

Category	Scaling			Scaling			Impact
	Initial capacity (GB)	Max capacity (GB)	Min capacity (GB)	Initial capacity (GB)	Max capacity (GB)	Min capacity (GB)	
Compute	100	1000	50	100	1000	50	Medium
Memory	100	1000	50	100	1000	50	Medium
Storage	100	1000	50	100	1000	50	Medium
Network	100	1000	50	100	1000	50	Medium

They have agreed to file their 2013 tax return with the IRS by December 15, 2014. The couple has filed their 2013 tax return with the IRS by December 15, 2014.

Week	Week No.	Demand				Supply				Total
		Actual	Forecast	Inventory	Order	Actual	Forecast	Inventory	Order	
1	1	10	10	10	-	10	10	10	-	10
2	2	12	12	10	-	12	12	10	-	12
3	3	10	10	10	-	10	10	10	-	10
4	4	15	15	10	-	15	15	10	-	15
5	5	18	18	10	-	18	18	10	-	18
6	6	12	12	10	-	12	12	10	-	12
7	7	10	10	10	-	10	10	10	-	10
8	8	15	15	10	-	15	15	10	-	15
9	9	18	18	10	-	18	18	10	-	18
10	10	12	12	10	-	12	12	10	-	12
11	11	10	10	10	-	10	10	10	-	10
12	12	15	15	10	-	15	15	10	-	15
13	13	18	18	10	-	18	18	10	-	18
14	14	12	12	10	-	12	12	10	-	12
15	15	10	10	10	-	10	10	10	-	10
16	16	15	15	10	-	15	15	10	-	15
17	17	18	18	10	-	18	18	10	-	18
18	18	12	12	10	-	12	12	10	-	12
19	19	10	10	10	-	10	10	10	-	10
20	20	15	15	10	-	15	15	10	-	15
21	21	18	18	10	-	18	18	10	-	18
22	22	12	12	10	-	12	12	10	-	12
23	23	10	10	10	-	10	10	10	-	10
24	24	15	15	10	-	15	15	10	-	15
25	25	18	18	10	-	18	18	10	-	18
26	26	12	12	10	-	12	12	10	-	12
27	27	10	10	10	-	10	10	10	-	10
28	28	15	15	10	-	15	15	10	-	15
29	29	18	18	10	-	18	18	10	-	18
30	30	12	12	10	-	12	12	10	-	12
31	31	10	10	10	-	10	10	10	-	10
32	32	15	15	10	-	15	15	10	-	15
33	33	18	18	10	-	18	18	10	-	18
34	34	12	12	10	-	12	12	10	-	12
35	35	10	10	10	-	10	10	10	-	10
36	36	15	15	10	-	15	15	10	-	15
37	37	18	18	10	-	18	18	10	-	18
38	38	12	12	10	-	12	12	10	-	12
39	39	10	10	10	-	10	10	10	-	10
40	40	15	15	10	-	15	15	10	-	15
41	41	18	18	10	-	18	18	10	-	18
42	42	12	12	10	-	12	12	10	-	12
43	43	10	10	10	-	10	10	10	-	10
44	44	15	15	10	-	15	15	10	-	15
45	45	18	18	10	-	18	18	10	-	18
46	46	12	12	10	-	12	12	10	-	12
47	47	10	10	10	-	10	10	10	-	10
48	48	15	15	10	-	15	15	10	-	15
49	49	18	18	10	-	18	18	10	-	18
50	50	12	12	10	-	12	12	10	-	12
51	51	10	10	10	-	10	10	10	-	10
52	52	15	15	10	-	15	15	10	-	15
53	53	18	18	10	-	18	18	10	-	18
54	54	12	12	10	-	12	12	10	-	12
55	55	10	10	10	-	10	10	10	-	10
56	56	15	15	10	-	15	15	10	-	15
57	57	18	18	10	-	18	18	10	-	18
58	58	12	12	10	-	12	12	10	-	12
59	59	10	10	10	-	10	10	10	-	10
60	60	15	15	10	-	15	15	10	-	15
61	61	18	18	10	-	18	18	10	-	18
62	62	12	12	10	-	12	12	10	-	12
63	63	10	10	10	-	10	10	10	-	10
64	64	15	15	10	-	15	15	10	-	15
65	65	18	18	10	-	18	18	10	-	18
66	66	12	12	10	-	12	12	10	-	12
67	67	10	10	10	-	10	10	10	-	10
68	68	15	15	10	-	15	15	10	-	15
69	69	18	18	10	-	18	18	10	-	18
70	70	12	12	10	-	12	12	10	-	12
71	71	10	10	10	-	10	10	10	-	10
72	72	15	15	10	-	15	15	10	-	15
73	73	18	18	10	-	18	18	10	-	18
74	74	12	12	10	-	12	12	10	-	12
75	75	10	10	10	-	10	10	10	-	10
76	76	15	15	10	-	15	15	10	-	15
77	77	18	18	10	-	18	18	10	-	18
78	78	12	12	10	-	12	12	10	-	12
79	79	10	10	10	-	10	10	10	-	10
80	80	15	15	10	-	15	15	10	-	15
81	81	18	18	10	-	18	18	10	-	18
82	82	12	12	10	-	12	12	10	-	12
83	83	10	10	10	-	10	10	10	-	10
84	84	15	15	10	-	15	15	10	-	15
85	85	18	18	10	-	18	18	10	-	18
86	86	12	12	10	-	12	12	10	-	12
87	87	10	10	10	-	10	10	10	-	10
88	88	15	15	10	-	15	15	10	-	15
89	89	18	18	10	-	18	18	10	-	18
90	90	12	12	10	-	12	12	10	-	12
91	91	10	10	10	-	10	10	10	-	10
92	92	15	15	10	-	15	15	10	-	15
93	93	18	18	10	-	18	18	10	-	18
94	94	12	12	10	-	12	12	10	-	12
95	95	10	10	10	-	10	10	10	-	10
96	96	15	15	10	-	15	15	10	-	15
97	97	18	18	10	-	18	18	10	-	18
98	98	12	12	10	-	12	12	10	-	12
99	99	10	10	10	-	10	10	10	-	10
100	100	15	15	10	-	15	15	10	-	15
101	101	18	18	10	-	18	18	10	-	18
102	102	12	12	10	-	12	12	10	-	12
103	103	10	10	10	-	10	10	10	-	10
104	104	15	15	10	-	15	15	10	-	15
105	105	18	18	10	-	18	18	10	-	18
106	106	12	12	10	-	12	12	10	-	12
107	107	10	10	10	-	10	10	10	-	10
108	108	15	15	10	-	15	15	10	-	15
109	109	18	18	10	-	18	18	10	-	18
110	110	12	12	10	-	12	12	10	-	12
111	111	10	10	10	-	10	10	10	-	10
112	112	15	15	10	-	15	15	10	-	15
113	113	18	18	10	-	18	18	10	-	18
114	114	12	12	10	-	12	12	10	-	12
115	115	10	10	10	-	10	10	10	-	10
116	116	15	15	10	-	15	15	10	-	15
117	117	18	18	10	-	18	18	10	-	18
118	118	12	12	10	-	12	12	10	-	12
119	119	10	10	10	-	10	10	10	-	10
120	120	15	15	10	-	15	15	10	-	15
121	121	18	18	10	-	18	18	10	-	18
122	122	12	12	10	-	12	12	10	-	12
123	123	10	10	10	-	10	10	10	-	10
124	124	15	15	10	-	15	15	10	-	15
125	125	18	18	10	-	18	18	10	-	18
126	126	12	12	10	-	12	12	10	-	12
127	127	10	10	10	-	10	10	10	-	10
128	128	15	15	10	-	15	15	10	-	15
129	129	18	18	10	-	18	18	10	-	18
130	130	12	12	10	-	12	12	10	-	12
131	131	10	10	10	-	10	10	10	-	10
132	132	15	15	10	-	15	15	10	-	15
133	133	18	18	10	-	18	18	10	-	18
134	134	12	12	10	-	12	12	10	-	12
135	135	10	10	10	-	10	10	10	-	10
136	136	15	15	10	-	15	15	10	-	15
137	137	18	18	10	-	18	18	10	-	18
138	138	12	12	10	-	12	12	10	-	12
139	139	10	10	10	-	10	10	10	-	10
140	140	15	15	10	-	15	15	10	-	15
141	141	18	18	10	-	18	18	10	-	18
142	142	12	12	10	-	12	12	10	-	12
143	143	10	10	10	-	10	10	10	-	10
144	144	15	15	10	-	15	15	10	-	15
145	145	18	18	10	-	18	18	10	-	18
146	146	12	12	10	-	12	12	10	-	12
147	147	10	10	10	-	10	10	10	-	10
148	148	15	15	10	-	15	15	10	-	15
149	149	18	18	10	-	18	18	10	-	18
150	150	12	12	10	-	12	12	10	-	12
151	151	10	10	10	-	10	10	10	-	10
152	152	15	15	10	-	15	15	10	-	15
153	153	18	18	10	-	18				

Capacity	Rating			Rating
	Index capacity (Kb/s)	Total	Index capacity (Kb/s)	
Time	A	B	C	D
00:00-00:15	-	-	-	-
00:15-00:30	-	-	-	-
00:30-00:45	-	-	-	-
00:45-01:00	-	-	-	-
01:00-01:15	-	-	-	-
01:15-01:30	-	-	-	-
01:30-01:45	-	-	-	-
01:45-02:00	-	-	-	-
02:00-02:15	-	-	-	-
02:15-02:30	-	-	-	-
02:30-02:45	-	-	-	-
02:45-03:00	-	-	-	-
03:00-03:15	-	-	-	-
03:15-03:30	-	-	-	-
03:30-03:45	-	-	-	-
03:45-04:00	-	-	-	-
04:00-04:15	-	-	-	-
04:15-04:30	-	-	-	-
04:30-04:45	-	-	-	-
04:45-05:00	-	-	-	-
05:00-05:15	-	-	-	-
05:15-05:30	-	-	-	-
05:30-05:45	-	-	-	-
05:45-06:00	-	-	-	-
06:00-06:15	-	-	-	-
06:15-06:30	-	-	-	-
06:30-06:45	-	-	-	-
06:45-07:00	-	-	-	-
07:00-07:15	-	-	-	-
07:15-07:30	-	-	-	-
07:30-07:45	-	-	-	-
07:45-08:00	-	-	-	-
08:00-08:15	-	-	-	-
08:15-08:30	-	-	-	-
08:30-08:45	-	-	-	-
08:45-09:00	-	-	-	-
09:00-09:15	-	-	-	-
09:15-09:30	-	-	-	-
09:30-09:45	-	-	-	-
09:45-10:00	-	-	-	-
10:00-10:15	-	-	-	-
10:15-10:30	-	-	-	-
10:30-10:45	-	-	-	-
10:45-10:59	-	-	-	-

SAP-CMRV1923GJH • SAP-CMRV2433GJH  
SAP-CMRV3143GJH

Power Range from 5.6 kW to 9.0 kW



Product and Performance	INVERTER HEAT PUMP			
	SAP-CMRV1923GJH		SAP-CMRV2433GJH	
	Cooling	Heating	Cooling	Heating
Capacity	5.6	7.1-10.6	7.1-12.0	8.0-13.0
Power input	0.9	2.0	2.1	2.4
Coil type	1	1	1	1
Number coils	1	1	1	1
Rotary compressor	1	1	1	1
Overall energy cost, cooling	0.51	0.51	0.51	0.51
Compressor units	1	1	1	1
Refrigerant Level 40	10.4	10	10	10
Refrigerant Level 41	20.8	20	20	20
Heat Recovery System 40	0.9	0.9	0.9	0.9
Heat Recovery System 41	19.8	19.8	19.8	19.8
Max piping length - fluid	0	0	0	0
Max piping length - air (m)	0	0	0	0
Max elevation diff. (m) - 1.0	0	0	0	0
Max elevation diff. (m) - 1.5	0	0	0	0
Dimensions (W x D x H), mm	900	900	1000	1000
Net weight	42	42	42	42
Power supply	230 V~	230 V~	230 V~	230 V~

Note: At least one indoor unit must be connected to the multi-system unit.  
Decommissioning costs to change political notice.



Rating conditions  
Delivery: outside air temperature 27°C/26°C/25°C; indoor air temperature 20/23/26/27/30°C  
Receiving: indoor air temperature 27°C/26°C/25°C; outdoor air temperature 17°C/16°C/15°C



	Indoor unit price	Outdoor unit price	Set price	PRICE
Spare	500,-	500,-	500,-	500,-
Set	500,-	500,-	500,-	500,-
Total	1.000,-	1.000,-	1.000,-	1.000,-

SAP-CMRV1923GJH(A)

SAP-CMRV2433GJH(A)  
SAP-CMRV3143GJH(A)

A proven design that is highly efficient  
and energy-saving

- The Sanyo Flexi Multi range of heat pump and straight cooling multi split system are the ideal, flexible solution for providing quick and efficient air conditioning to 2, 3 or 4 areas with a single outdoor unit.
- Wide choice of indoor unit style: wall mounted, floor/ceiling, cassette, ducted.
- DC-inverter technology for precise temperature control and low start current.
- High efficiency on whole range, in cooling and heating mode.
- Chargerless outdoor unit, therefore no additional refrigerant needed on site.
- Night set back function.
- 24-hour clock with on/off program timer.
- Night set back/Economy mode function ensures gentle and saving area by cooling and heating.



B410A



SAP-CMRV 3-SERIE

#### INDOOR UNIT

Wall mounted unit Performance	SAP-AIRCOOLER(100)	SAP-AIRCOOLER(150)	SAP-AIRCOOLER(200)	SAP-AIRCOOLER(250)	
	Cooling Heating	Cooling Heating	Cooling Heating	Cooling Heating	
Capacity	10W	10.5/12.2	10.5/14.4	11.5/14.5	12.5/17.5
Air circulation (m³/h)	n/a	1200	1800	2500	3200
Moisture removal	Lbs/day	-	-	2.0	-
Sound Pressure Level (L10dB)	dBA	33/35/41	33/36/44	33/36/49	34/39/54
Sound Power Level (Lw)	dBA	52	53	57	58
Sound Power Level (LWA)	dBA	50.1/50.5	50.2/51.0	50.3/51.6	50.4/52.0
Water flow rate	mm (in)	1.5 (0.05)	1.5 (0.05)	1.5 (0.05)	1.5 (0.05)
Water temperature	°C (°F)	17.5 (63.5)	17.5 (63.5)	17.5 (63.5)	17.5 (63.5)
Power weight	Kg	9.0	9.5	10.5	11.5
Power supply	VAC Hz	220 50~60	220 50~60	220 50~60	220 50~60

Consumed heat unit		SAP-DRYBULK/SLURRY		SAP-DRYBULK/SLURRY		SAP-DRYBULK/SLURRY		SAP-DRYBULK/SLURRY	
Performance		Scaling	Reusing	Scaling	Reusing	Scaling	Reusing	Scaling	Reusing
Flowrate	HR	0.02031.2	0.0240.4	0.0350.3	0.0450.3	1.15-15.6	1.20-17.8	1.20-18.1	0.94-18.6
Air circulation (m³)	m³/h	300	300	300	300	300	300	300	300
Material-reuse	Lbmash	1.8		2.0		2.8		3.4	
External static pressure (Lbs)		16.0/22.0		19.0/21.0		14.0/23.0		18.0/21.0	
Sound Pressure Level (0.546kW)	dBA	32/39/42	30/39/42	31/39/41	30/39/42	32/39/41	30/39/42	32/39/41	30/39/42
Sound Power Level (P)	dBA	52	51	53	52	52	52	52	52
Total diameter (Nominal/Dia)	mm/mm	6.10/16.1-9.5/20.0		6.30/16.1-16.0/20.0		6.30/16.1-16.0/20.0		6.30/16.1-16.0/20.0	
Dimensions (HxWxD)	mm	300x100x470		300x100x470		300x100x470		300x100x470	
Net weight	kg	18		19		19		19	
Power supply	V/A	230-1~50		230-1~50		230-1~50		230-1~50	

Serial compensated R-1000000		SAP-ENVIRONNEMENT	SAP-ENVIRONNEMENT	SAP-ENVIRONNEMENT
Parameter	Description	Current	Warning	Critical
Capacity	Watt	870,413,2	870,413,2	870,413,2
Air Circulation [m³]	m³/h	1000000,0	1000000,0	1000000,0
Matured remains	Litres/h	1,0	1,0	1,0
Sound Pressure Level L_N(N)	dBA	3740,44	3740,44	3740,44
Sound Power Level P_N	dBA	95	95	95
Tube diameter - Nominal/Dia	metres	0,25000000000000002	0,25000000000000002	0,25000000000000002
Dimensions; width x height	mm	290x50x50	290x50x50	290x50x50
Dimensions; depth x height	mm	540x350x350	540x350x350	540x350x350
Net weight - Unit	Kg	45,5	45,5	45,5
Net weight - Pack	Kg	2,5	2,5	2,5

Estimated Start and Performance		SAP UNIPRIVILEGED		SAP UNIPRIVILEGED		SAP UNIPRIVILEGED		SAP UNIPRIVILEGED	
		Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity	HP	0.372-0.7	0.9-1.0	0.372-0.4	0.9-1.0	1.10-2.5	1.27-1.7	1.57-2.6	1.55-2.6
Net consumption (kWh)	420	420	420	420	420	420	420	420	420
Max/min temp. difference	(°C)								
External static press. (kPa/mm²)	1.8			1.8		1.8		1.8	
Sound Pressure Level (L <sub>Aeq</sub> )	45±5	45±5	45±5	45±5	45±5	45±5	45±5	45±5	45±5
Sound Power Level (L <sub>WA</sub> )	55±4	55±4	55±4	55±4	55±4	55±4	55±4	55±4	55±4
Social Sound Level (L <sub>WA</sub> )	52	52	52	52	52	52	52	52	52
Tube diameter / Nominal Size	mm/ø	12.5-16 / 16-20		12.5-16 / 16-20		12.5-16 / 16-20		12.5-16 / 16-20	
Flow velocity (m/s)	m/s	0.06-0.07		0.06-0.07		0.06-0.07		0.06-0.07	
Net weight	kg	36		36		36		36	
Pump type	1/6-1/6			1/6-1/6		1/6-1/6		1/6-1/6	

### COMBINATIONS TABLE

Year	Growth			Net Income Margin			Growth		
	Value	Rate	YTD	Value	Rate	YTD	Value	Rate	YTD
2000-01	\$1,000	10%	10%	\$1,000	10%	10%	\$1,000	10%	10%
2001-02	\$1,100	9%	9%	\$1,100	9%	9%	\$1,100	9%	9%
2002-03	\$1,210	8%	8%	\$1,210	8%	8%	\$1,210	8%	8%
2003-04	\$1,331	7%	7%	\$1,331	7%	7%	\$1,331	7%	7%
2004-05	\$1,464	6%	6%	\$1,464	6%	6%	\$1,464	6%	6%
2005-06	\$1,609	5%	5%	\$1,609	5%	5%	\$1,609	5%	5%
2006-07	\$1,764	4%	4%	\$1,764	4%	4%	\$1,764	4%	4%
2007-08	\$1,930	3%	3%	\$1,930	3%	3%	\$1,930	3%	3%
2008-09	\$2,107	2%	2%	\$2,107	2%	2%	\$2,107	2%	2%
2009-10	\$2,297	1%	1%	\$2,297	1%	1%	\$2,297	1%	1%
2010-11	\$2,499	-1%	-1%	\$2,499	-1%	-1%	\$2,499	-1%	-1%
2011-12	\$2,719	-1%	-1%	\$2,719	-1%	-1%	\$2,719	-1%	-1%
2012-13	\$2,950	-1%	-1%	\$2,950	-1%	-1%	\$2,950	-1%	-1%
2013-14	\$3,195	-1%	-1%	\$3,195	-1%	-1%	\$3,195	-1%	-1%
2014-15	\$3,455	-1%	-1%	\$3,455	-1%	-1%	\$3,455	-1%	-1%
2015-16	\$3,735	-1%	-1%	\$3,735	-1%	-1%	\$3,735	-1%	-1%
2016-17	\$4,030	-1%	-1%	\$4,030	-1%	-1%	\$4,030	-1%	-1%
2017-18	\$4,340	-1%	-1%	\$4,340	-1%	-1%	\$4,340	-1%	-1%
2018-19	\$4,665	-1%	-1%	\$4,665	-1%	-1%	\$4,665	-1%	-1%
2019-20	\$5,005	-1%	-1%	\$5,005	-1%	-1%	\$5,005	-1%	-1%
2020-21	\$5,360	-1%	-1%	\$5,360	-1%	-1%	\$5,360	-1%	-1%
2021-22	\$5,731	-1%	-1%	\$5,731	-1%	-1%	\$5,731	-1%	-1%
2022-23	\$6,118	-1%	-1%	\$6,118	-1%	-1%	\$6,118	-1%	-1%
2023-24	\$6,512	-1%	-1%	\$6,512	-1%	-1%	\$6,512	-1%	-1%
2024-25	\$6,913	-1%	-1%	\$6,913	-1%	-1%	\$6,913	-1%	-1%
2025-26	\$7,321	-1%	-1%	\$7,321	-1%	-1%	\$7,321	-1%	-1%
2026-27	\$7,736	-1%	-1%	\$7,736	-1%	-1%	\$7,736	-1%	-1%
2027-28	\$8,158	-1%	-1%	\$8,158	-1%	-1%	\$8,158	-1%	-1%
2028-29	\$8,587	-1%	-1%	\$8,587	-1%	-1%	\$8,587	-1%	-1%
2029-30	\$9,022	-1%	-1%	\$9,022	-1%	-1%	\$9,022	-1%	-1%
2030-31	\$9,463	-1%	-1%	\$9,463	-1%	-1%	\$9,463	-1%	-1%
2031-32	\$9,910	-1%	-1%	\$9,910	-1%	-1%	\$9,910	-1%	-1%
2032-33	\$10,363	-1%	-1%	\$10,363	-1%	-1%	\$10,363	-1%	-1%
2033-34	\$10,822	-1%	-1%	\$10,822	-1%	-1%	\$10,822	-1%	-1%
2034-35	\$11,287	-1%	-1%	\$11,287	-1%	-1%	\$11,287	-1%	-1%
2035-36	\$11,758	-1%	-1%	\$11,758	-1%	-1%	\$11,758	-1%	-1%
2036-37	\$12,235	-1%	-1%	\$12,235	-1%	-1%	\$12,235	-1%	-1%
2037-38	\$12,718	-1%	-1%	\$12,718	-1%	-1%	\$12,718	-1%	-1%
2038-39	\$13,207	-1%	-1%	\$13,207	-1%	-1%	\$13,207	-1%	-1%
2039-40	\$13,702	-1%	-1%	\$13,702	-1%	-1%	\$13,702	-1%	-1%
2040-41	\$14,203	-1%	-1%	\$14,203	-1%	-1%	\$14,203	-1%	-1%
2041-42	\$14,710	-1%	-1%	\$14,710	-1%	-1%	\$14,710	-1%	-1%
2042-43	\$15,223	-1%	-1%	\$15,223	-1%	-1%	\$15,223	-1%	-1%
2043-44	\$15,742	-1%	-1%	\$15,742	-1%	-1%	\$15,742	-1%	-1%
2044-45	\$16,266	-1%	-1%	\$16,266	-1%	-1%	\$16,266	-1%	-1%
2045-46	\$16,795	-1%	-1%	\$16,795	-1%	-1%	\$16,795	-1%	-1%
2046-47	\$17,330	-1%	-1%	\$17,330	-1%	-1%	\$17,330	-1%	-1%
2047-48	\$17,869	-1%	-1%	\$17,869	-1%	-1%	\$17,869	-1%	-1%
2048-49	\$18,413	-1%	-1%	\$18,413	-1%	-1%	\$18,413	-1%	-1%
2049-50	\$18,961	-1%	-1%	\$18,961	-1%	-1%	\$18,961	-1%	-1%
2050-51	\$19,515	-1%	-1%	\$19,515	-1%	-1%	\$19,515	-1%	-1%
2051-52	\$20,074	-1%	-1%	\$20,074	-1%	-1%	\$20,074	-1%	-1%
2052-53	\$20,638	-1%	-1%	\$20,638	-1%	-1%	\$20,638	-1%	-1%
2053-54	\$21,206	-1%	-1%	\$21,206	-1%	-1%	\$21,206	-1%	-1%
2054-55	\$21,780	-1%	-1%	\$21,780	-1%	-1%	\$21,780	-1%	-1%
2055-56	\$22,358	-1%	-1%	\$22,358	-1%	-1%	\$22,358	-1%	-1%
2056-57	\$22,939	-1%	-1%	\$22,939	-1%	-1%	\$22,939	-1%	-1%
2057-58	\$23,524	-1%	-1%	\$23,524	-1%	-1%	\$23,524	-1%	-1%
2058-59	\$24,113	-1%	-1%	\$24,113	-1%	-1%	\$24,113	-1%	-1%
2059-60	\$24,706	-1%	-1%	\$24,706	-1%	-1%	\$24,706	-1%	-1%
2060-61	\$25,303	-1%	-1%	\$25,303	-1%	-1%	\$25,303	-1%	-1%
2061-62	\$25,904	-1%	-1%	\$25,904	-1%	-1%	\$25,904	-1%	-1%
2062-63	\$26,509	-1%	-1%	\$26,509	-1%	-1%	\$26,509	-1%	-1%
2063-64	\$27,118	-1%	-1%	\$27,118	-1%	-1%	\$27,118	-1%	-1%
2064-65	\$27,731	-1%	-1%	\$27,731	-1%	-1%	\$27,731	-1%	-1%
2065-66	\$28,348	-1%	-1%	\$28,348	-1%	-1%	\$28,348	-1%	-1%
2066-67	\$28,968	-1%	-1%	\$28,968	-1%	-1%	\$28,968	-1%	-1%
2067-68	\$29,591	-1%	-1%	\$29,591	-1%	-1%	\$29,591	-1%	-1%
2068-69	\$30,217	-1%	-1%	\$30,217	-1%	-1%	\$30,217	-1%	-1%
2069-70	\$30,846	-1%	-1%	\$30,846	-1%	-1%	\$30,846	-1%	-1%
2070-71	\$31,479	-1%	-1%	\$31,479	-1%	-1%	\$31,479	-1%	-1%
2071-72	\$32,115	-1%	-1%	\$32,115	-1%	-1%	\$32,115	-1%	-1%
2072-73	\$32,754	-1%	-1%	\$32,754	-1%	-1%	\$32,754	-1%	-1%
2073-74	\$33,406	-1%	-1%	\$33,406	-1%	-1%	\$33,406	-1%	-1%
2074-75	\$34,061	-1%	-1%	\$34,061	-1%	-1%	\$34,061	-1%	-1%
2075-76	\$34,729	-1%	-1%	\$34,729	-1%	-1%	\$34,729	-1%	-1%
2076-77	\$35,400	-1%	-1%	\$35,400	-1%	-1%	\$35,400	-1%	-1%
2077-78	\$36,074	-1%	-1%	\$36,074	-1%	-1%	\$36,074	-1%	-1%
2078-79	\$36,751	-1%	-1%	\$36,751	-1%	-1%	\$36,751	-1%	-1%
2079-80	\$37,431	-1%	-1%	\$37,431	-1%	-1%	\$37,431	-1%	-1%
2080-81	\$38,114	-1%	-1%	\$38,114	-1%	-1%	\$38,114	-1%	-1%
2081-82	\$38,799	-1%	-1%	\$38,799	-1%	-1%	\$38,799	-1%	-1%
2082-83	\$39,487	-1%	-1%	\$39,487	-1%	-1%	\$39,487	-1%	-1%
2083-84	\$40,177	-1%	-1%	\$40,177	-1%	-1%	\$40,177	-1%	-1%
2084-85	\$40,870	-1%	-1%	\$40,870	-1%	-1%	\$40,870	-1%	-1%
2085-86	\$41,565	-1%	-1%	\$41,565	-1%	-1%	\$41,565	-1%	-1%
2086-87	\$42,262	-1%	-1%	\$42,262	-1%	-1%	\$42,262	-1%	-1%
2087-88	\$42,961	-1%	-1%	\$42,961	-1%	-1%	\$42,961	-1%	-1%
2088-89	\$43,662	-1%	-1%	\$43,662	-1%	-1%	\$43,662	-1%	-1%
2089-90	\$44,365	-1%	-1%	\$44,365	-1%	-1%	\$44,365	-1%	-1%
2090-91	\$45,070	-1%	-1%	\$45,070	-1%	-1%	\$45,070	-1%	-1%
2091-92	\$45,777	-1%	-1%	\$45,777	-1%	-1%	\$45,777	-1%	-1%
2092-93	\$46,486	-1%	-1%	\$46,486	-1%	-1%	\$46,486	-1%	-1%
2093-94	\$47,200	-1%	-1%	\$47,200	-1%	-1%	\$47,200	-1%	-1%
2094-95	\$47,915	-1%	-1%	\$47,915	-1%	-1%	\$47,915	-1%	-1%
2095-96	\$48,632	-1%	-1%	\$48,632	-1%	-1%	\$48,632	-1%	-1%
2096-97	\$49,351	-1%	-1%	\$49,351	-1%	-1%	\$49,351	-1%	-1%
2097-98	\$50,072	-1%	-1%	\$50,072	-1%	-1%	\$50,072	-1%	-1%
2098-99	\$50,795	-1%	-1%	\$50,795	-1%	-1%	\$50,795	-1%	-1%
2099-2000	\$51,520	-1%	-1%	\$51,520	-1%	-1%	\$51,520	-1%	-1%
202000-2001	\$52,247	-1%	-1%	\$52,247	-1%	-1%	\$52,247	-1%	-1%
20001-2002	\$53,976	-1%	-1%	\$53,976	-1%	-1%	\$53,976	-1%	-1%
2002-2003	\$55,707	-1%	-1%	\$55,707	-1%	-1%	\$55,707	-1%	-1%
2003-2004	\$57,440	-1%	-1%	\$57,440	-1%	-1%	\$57,440	-1%	-1%
2004-2005	\$59,175	-1%	-1%	\$59,175	-1%	-1%	\$59,175	-1%	-1%
2005-2006	\$60,912	-1%	-1%	\$60,912	-1%	-1%	\$60,912	-1%	-1%
2006-2007	\$62,651	-1%	-1%	\$62,651	-1%	-1%	\$62,651	-1%	-1%
2007-2008	\$64,392	-1%	-1%	\$64,392	-1%	-1%	\$64,392	-1%	-1%
2008-2009	\$66,135	-1%	-1%	\$66,135	-1%	-1%	\$66,135	-1%	-1%
2009-2010	\$67,879	-1%	-1%	\$67,879	-1%	-1%	\$67,879	-1%	-1%
2010-2011	\$69,625	-1%	-1%	\$69,625	-1%	-1%	\$69,625	-1%	-1%
2011-2012	\$71,372	-1%	-1%	\$71,372	-1%	-1%	\$71,372	-1%	-1%
2012-2013	\$73,121	-1%	-1%	\$73,121	-1%	-1%	\$73,121	-1%	-1%
2013-2014	\$74,872	-1%	-1%	\$74,872	-1%	-1%	\$74,872	-1%	-1%
2014-2015	\$76,625	-1%	-1%	\$76,625	-1%	-1%	\$76,625	-1%	-1%
2015-2016	\$78,379	-1%	-1%	\$78,379	-1%	-1%	\$78,379	-1%	-1%
2016-2017	\$80,135	-1%	-1%	\$80,135	-1%	-1%	\$80,135	-1%	-1%
2017-2018	\$81,892	-1%	-1%	\$81,892	-1%	-1%	\$81,892	-1%	-1%
2018-2019	\$83,651	-1%	-1%	\$83,651	-1%	-1%	\$83,651	-1%	-1%
2019-2020	\$85,412	-1%	-1%	\$85,412	-1%	-1%	\$85,412	-1%	-1%
2020-2021	\$87,175	-1%	-1%	\$87,175	-1%	-1%	\$87,175	-1%	-1%
2021-2022	\$88,939	-1%	-1%	\$88,939	-1%	-1%	\$88,939	-1%	-1%
2022-2023	\$90,704	-1%	-1%	\$90,704	-1%	-1%	\$90,704	-1%	-1%
2023-2024	\$92,471	-1%	-1%	\$92,471	-1%	-1%	\$92,471	-1%	-1%
2024-2025	\$94,239	-1%	-1%	\$94,239	-1%	-1%	\$94,239	-1%	-1%
2025-2026	\$96,009	-1%	-1%	\$96,009	-1%	-1%	\$96,009	-1%	-1%
2026-2027	\$97,781	-1%	-1%	\$97,781	-1%	-1%	\$97,781	-1%	-1%
2027-2028	\$99,555	-1%	-1%	\$99,555	-1%	-1%	\$99,555	-1%	-1%
2028-2029	\$101,331	-1%	-1%	\$101,331	-1%	-1%	\$101,331	-1%	-1%
2029-2030	\$103,109	-1%	-1%	\$103,109	-1%	-1%	\$103,109	-1%	-1%
2030-2031	\$104,889	-1%	-1%	\$104,889	-1%	-1%	\$104,889	-1%	-1%
2031-2032	\$106,669	-1%	-1%	\$106,669	-1%	-1%	\$106,669	-1%	-1%
2032-2033	\$108,451	-1%	-1%	\$108,451	-1%	-1%	\$108,451	-1%	-1%
2033-2034	\$110,234	-1%	-1%	\$110,234	-1%	-1%	\$110,234	-1%	-1%
2034-2035	\$112,019	-1%	-1%	\$112,019	-1%	-1%	\$112,019	-1%	-1%
2035-2036	\$113,805	-1%	-1%	\$113,805	-1%	-1%	\$113,805	-1%	-1%
2036-2037	\$115,593	-1%	-1%	\$115,593	-1%	-1%	\$115,593	-1%	-1%
2037-2038	\$117,382	-1%	-1%	\$117,382	-1%	-1%	\$117,382	-1%	-1%
2038-2039	\$119,173	-1%	-1%	\$119,173	-1%	-1%	\$119,173	-1%	-1%
2039-2040	\$120								

Category	Sub-category	Rating			Performance			Rating			Performance		
		Initial capacity (MW)	Final capacity (MW)	Rate (MW/h)	Initial capacity (MW)	Final capacity (MW)	Rate (MW/h)	Initial capacity (MW)	Final capacity (MW)	Rate (MW/h)	Initial capacity (MW)	Final capacity (MW)	Rate (MW/h)
Wind	Onshore	100	100	-	-	-	-	100	100	-	-	-	-
Wind	Offshore	100	100	-	-	-	-	100	100	-	-	-	-
Hydro	Large	100	100	-	-	-	-	100	100	-	-	-	-
Hydro	Small	100	100	-	-	-	-	100	100	-	-	-	-
Solar	Concentrated	100	100	-	-	-	-	100	100	-	-	-	-
Solar	Photovoltaic	100	100	-	-	-	-	100	100	-	-	-	-
Geothermal	Direct Use	100	100	-	-	-	-	100	100	-	-	-	-
Geothermal	Indirect Use	100	100	-	-	-	-	100	100	-	-	-	-
Natural Gas	LNG	100	100	-	-	-	-	100	100	-	-	-	-
Natural Gas	Shale Gas	100	100	-	-	-	-	100	100	-	-	-	-
Coal	Traditional	100	100	-	-	-	-	100	100	-	-	-	-
Coal	Advanced	100	100	-	-	-	-	100	100	-	-	-	-
Oil	Conventional	100	100	-	-	-	-	100	100	-	-	-	-
Oil	Unconventional	100	100	-	-	-	-	100	100	-	-	-	-
Hydrogen	Production	100	100	-	-	-	-	100	100	-	-	-	-
Hydrogen	Distribution	100	100	-	-	-	-	100	100	-	-	-	-
Hydrogen	Storage	100	100	-	-	-	-	100	100	-	-	-	-
Hydrogen	Consumption	100	100	-	-	-	-	100	100	-	-	-	-
Other	None	100	100	-	-	-	-	100	100	-	-	-	-

## SA-P51E • SA-P71E • SAP-PFR94E • SAP-PFR124E

Power Range from 1.8 kW to 3.66 kW

Performance	MONOBLOCK TYPE	
	SA-P71E	SA-P71E
Capacity	1.8	2.1
Power input	0	0.70
EER	8.0/8	12.3/12
Energy class	C	A
Rating vapours	2	2.3
Annual energy costs (cooling)	360	350
Fan-speed	No	2
Air circulation (m³/h)	290	310
Tiling height	m	1.5
Moisture removal rate (kg/h)	0.05	0.07/0.07
Sound Pressure Level (L <sub>WA</sub> )	38.4	30/32/32
Dimensions (HxWxD) - Indoor	mm	500x300x100
Dimensions (HxWxD) - Outdoor	mm	470x450x200
Net weight - Indoor unit	kg	30
Net weight - Outdoor unit	kg	16
Power supply	V (Hz)	230 (50, 60)
		230 (145, 50)

Performance	SPLIT TYPE	
	SAP-PFR94E	SAP-PFR124E
Capacity	1.8	2.1
Power input	0	0.70
EER	8.0/8	12.2/11
Energy class	C	B
Rating vapours	2	2.3
Annual energy costs (cooling)	360	320
Fan-speed	No	2
Air circulation (m³/h)	270	400
Tiling height	m	1.5
Moisture removal	0.05	0.07/0.07
Sound Pressure Level (L <sub>WA</sub> )	38.4	32/32/32
Dimensions (HxWxD) - Indoor	mm	500x300x100
Dimensions (HxWxD) - Outdoor	mm	470x450x200
Net weight - Indoor unit	kg	30
Net weight - Outdoor unit	kg	16
Power supply	V (Hz)	230 (50, 60)
		230 (145, 50)

Rating conditions  
Cooling: Room air temperature 27°C (26.5°C/25.5°C), outdoor air temperature 35°C (34°C/34°C/34°C).

Specifications stated in change ambient values



	Indoor unit price	Outdoor unit price	Set price	PRICE
Euro	540,-	540,-	1.080,-	1.080,-
US\$	640,-	640,-	1.280,-	1.280,-
£	440,-	440,-	880,-	880,-

**A** Class  
seer rating



SA-PLE



SAP-PFR124E

The best choice to give you continuous flow of cool and dry air where most needed.

- High efficiency on whole range
- Quick coupling connection for easy installation through a window or a wall (split type)
- Chrome-friendly and not flammable R410A refrigerant
- Multi-functional infrared remote controller with built-in temperature sensor (split type)
- 2 or 3 fan speeds + auto
- 3 operation mode: cool, dry, fan only
- Rotary compressor ensures silent operation
- Long piping connection, the Senys portability can be placed where you want
- Sleep function ensures gentle and saving energy cooling in the room
- 24-hour clock with on/off program timer

## ABC-HP14

Up to 25 m<sup>2</sup> room size

ABC-HP14	
Applied Area	m <sup>2</sup>
Fan speed	25
Air circulation (L/MIN)	m <sup>3</sup> /min
Sound pressure level (L <sub>WA</sub> )	36/11/130
Power input Max Max	W
Gold Filter	19.56
Delay Timer	' 1 Hour / 2 Hour / 8 Hour
Dimensions (HWD)	mm
Height	42
Power supply	V, Hz, Hz

H2M Filter & Activated Carbon Filter  
1 Hour / 2 Hour / 8 Hour  
400x400x120  
4.1  
230, 1~6, 50

Specification subject to change without notice.



ANTI-DUST AND POLLEN FILTERS



NEGATIVE ION GENERATOR



3 FAN SPEEDS



TIMES



WIDE AIR INTAKE ON ALL SIDES



TILTABLE FOR OPTIMUM OPERATION



ABC-HP14

Create the best atmosphere in your living room

- HEPA long-life filter removes 99% of bacteria, spores and dust
- Carbon filter ensures deodorizing power on whole airflow
- Negative ion generator makes refreshed air fit your living room with negative ions like in a forest or around a waterfall
- Quick cleaning cigarette smoke and house dust by bottom air intake
- Powerful rinsing on whole surface
- Easy-to-clean 3-stage filter can be quickly removed when necessary
- Tiltable for optimum operation
- 3 position delay timer
- 3 fan-speeds + combi
- Special program for removal of pollen



## SANYO

**SANYO Light-commercial Air Conditioners**  
enhance the air quality in shops, restaurants  
and any business site

Sanyo DC-inverter is outstanding for its rapid cooling and heating power. Their newly developed R410A heat exchangers and microcomputer have formed lightweight, compact, and highly efficient outdoor units.

The twin rotary compressor dramatically reduces vibration and noise during operation, thus assuring quiet operation.

Up to 4 standard indoor units of different types and capacities can be operated simultaneously with a single outdoor unit.

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- Ceiling mounted PAC-I pag. 64
- Semi-concealed 4 way PAC-I pag. 56
- Concealed duct PAC-I pag. 68
- High static pressure duct pag. 70
- Twin/Triple/W-Twin application pag. 72
- Control systems pag. 74

# Light-commercial products

SPW-KCR184GVH56 • SPW-KCR254GVH56/H8

# Wall mounted PAC-i inverter type

Power Range from 5.0 kW to 7.1 kW

INDOOR UNIT TYPE					
	size 156		size 254		
Performance	Cooling	Heating	Cooling	Heating	
Capacity	18	-15.0°	-15.0°	2.03/1.98	2.03/2.02
Power input	9	1475	1735	2380	2380
SSE/COP	0.70	3.00	3.21	3.21	3.04
Energy class	B	C	C	D	D
Rating current (A) / Spn	4.4	5.8	8.1	10.1	12.1/14
Annual energy consumption (kWh)	1065	912.5	1171.5	1231.5	

SPW-KR184GVH56(B)		SPW-KR254GVH56(B)	
Air flow rate (m³/h)	180	210	240
Max static pressure	100	110	110
Sound Power Level (dB)	58.4	46	48
Sound Pressure Level (dB(A))	38.4	38.1/38.0	40/37.94
Dimensions (mm)	1000	1000x2470	1200x2470
Net weight	kg	11	11
Power supply	V, ph, Hz	230, 1~6, 50	230, 1~6, 50

SPW-KR254GVH56(B)	
Sound Power Level (dB)	58.4
Sound Pressure Level (dB(A))	38.4
Dimensions (mm)	1000
Net weight	kg
Power supply	V, ph, Hz

Additional data	
Sound Power Level (dB)	58.4
Sound Pressure Level (dB(A))	38.4
Dimensions (mm)	1000x2470
Net weight	kg
Power supply	V, ph, Hz

Additional data	
Line diameter (mm/mm)	8.0/10.0
Max piping length	m
Max. diff. diff. G.I. connection (m)	10
Charging piping length	m
Amount of additional refrigerant	g/kW

Specifications subject to change without notice.  
\* Only A/C available at the time of publication.

**Rating conditions**  
Cooling indoor air temperature (TIC) 28°C/47°C WB; Outdoor air temperature (OTC) 35°C/35°C WB  
Heating indoor air temperature (TIC) 28°C/35°C WB; Outdoor air temperature (OTC) 7°C/10°C WB



	SPW-KR184GVH56(B)	SPW-KR254GVH56(B)
Indoor unit price	Euro 500.00	Euro 600.00
Outdoor unit price	Euro 500.00	Euro 600.00



Option remote controller

SPW-KR...GH56(B)



New 3-phase



SPW-KR...GVH56/H8B

Easy installation and operation equivalent to that for a room air conditioner

- Twin-screw compressor dramatically reduces vibration and noise during operation.
- DC-inverter control
- Wide outdoor unit range: single-phase or three-phase
- Lighter and small unit makes the installation easier
- Quick start up
- Extra quiet and energy saving
- Cooling & Heating operation down to -15°C
- Multi-functional wireless remote control with built-in temperature control
- Piping outlet in three directions
- Anti-mould filters are standard equipment
- Washable front panel

# Light-commercial products

SPW-TDCR184GVH56 • SPW-TDCR254GVH56/HB  
 SPW-TDCR364GVH56/HB • SPW-TDCR484GVH56/HB  
 SPW-TDCR604GVH56/HB

Power Range from 5.3 kW to 14.0 kW

Performance	size 184		size 254		size 364		size 484		size 604	
	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
Capacity	48	15.9°	70.4°	12.0°	12.0°	12.0°	12.0°	12.0°	14.0°	14.0°
Power input	1801	1809	2350	2256	3098	3098	4126	4070	5258	4798
CO2/GWP	2.73	2.36	3.02	2.98	2.88	2.87	3.02	2.94	2.87	2.36
Energy class	B	C	B	B	B	B	B	B	B	B
Number compressors (1st / 2nd)	4	5.5	8.0	12.8/13.1/13.3/13.5	16.2/18.1/20.3/21.1	26.0/27.3	30.4/32.2	34.2/35.8		
Annual energy consumption (cooling)	1865		1175		1695					

Indoor Unit	SPW-TDR-GH56(B)		SPW-TDR-GH56(HB)		SPW-TDR-GH56(H)		SPW-TDR-GH56(HB)	
	Size (Dimensions)	Weight (kg)						
Air circulation (PMH)	4776	290x90x240	4776	290x90x242	4776	290x90x240	4776	290x90x240
Minimum remote	1.8m	-	1.8	-	1.8	-	1.8	-
Sound Power Level (LpA)	45.4	47	46	47	47	48	48	48
Sound Pressure Level (LpA)	36.4	36.0/36.1	36.6/37.0	41.7/42.1	42.0/42.7	42.4/43.0	42.4/43.0	42.4/43.0
Dimensions (HxWxD)	mm	270x100x240	270x100x240	270x100x240	270x100x240	270x100x240	270x100x240	270x100x240
Net weight	kg	21	21	20	20	20	20	20
Power supply	V ac Hz	230 1~8.30			230 1~8.30		230 1~8.30	

Indoor Unit	SPW-TDR-GH56(B)		SPW-TDR-GH56(HB)		SPW-TDR-GH56(H)		SPW-TDR-GH56(HB)	
	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)
Sound Power Level (LpA)	45.4	58	59	58	61	61	64	65
Sound Pressure Level (LpA)	36.4	40.0/41.0	41.4/42.0	44.0/44.1	51.0/52.0	52.0/53.0	52.0/53.0	53.0/53.0
Dimensions (HxWxD)	mm	305x740x700/800	305x740x800	305x740x800	320x740x800	320x740x800	320x740x800	320x740x800
Net weight	kg	40	58	65	100	100	100	100
Power supply	V ac Hz	230 1~8.30		230 1~8.30	400 3~8.30		230 1~8.30	

R&P piping circuit	size 184		size 254		size 364		size 484		size 604	
	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)	Size (Dimensions)	Weight (kg)
Pipe diameter (Nominal/Dia)	mm/mm	6.35/11.41/12.7/15.9	9.52/12.65/15.88/20.8	9.52/12.65/15.88/20.8	12.7/15.9/18.8/24.0	12.7/15.9/18.8/24.0	12.7/15.9/18.8/24.0	12.7/15.9/18.8/24.0	12.7/15.9/18.8/24.0	12.7/15.9/18.8/24.0
Max piping length	m	40	50	50	60	60	60	60	60	60
Max. diff. in elevation (H)	m	30/110	30/110	30/110	30/110	30/110	30/110	30/110	30/110	30/110
Charging piping length	m	30	30	30	30	30	30	30	30	30
Amount of additional refrigerant (g/t)	kg/t	30	40	40	40	40	40	40	40	40

Specifications subject to change without notice.  
 \* Data not guaranteed at the time of evaluation.

**Heating conditions**  
 Cooling: Indoor air temperature 27°C (26-27°C), outdoor air temperature 30°C (28-30°C), relative humidity 60%  
 Heating: Indoor air temperature 20°C (18-20°C), outdoor air temperature 7°C (5-9°C), relative humidity 60%

Indoor unit price	PRICE	
	Euro	USD
Indoor unit price	500.00	600.00
Indoor unit price	500.00	600.00
Set price	1,300.00	1,300.00



# Ceiling mounted PAC-i inverter type



SPW-TDR-GH56(B)



Option remote controller



New 3-phase



SPW-CR-GVH56/HBB

Easy installation even in existing buildings

- Twin rotary compressor dramatically reduces vibration and noise during operation
- DC-inverter control
- Wide outdoor unit range: single-phase or three-phase
- All indoor units just 210mm high
- Large and wide air distribution
- Quick start up
- Most suitable for long and narrow space
- Newly developed DC fan motor for increased efficiency
- Cooling & Heating operation down to -15°C
- Industry low sound level
- Multi-functional wireless remote control with built-in temperature control
- Piping outlet in three directions
- Fresh air knockout for improved air quality

# Light-commercial products

SPW-XDCR184GVH56 • SPW-XDCR254GVH56/HB  
 SPW-XDCR364GVH56/HB • SPW-XDCR484GVH56/HB  
 SPW-XDCR604GVH56/HB

Power Range from 5.0 kW to 14.0 kW

Performance	INDOOR UNIT FLOW				
	size 184	size 254	size 364	size 484	size 604
Supply	184	750*	1,020*	1,620*	2,020*
Power input	184	1457	1888	2126	2075
EER/SCOP	184	3.24	4.21	3.32	3.58
Energy 2000	—	—	A	A	A
Running current (A) / 240V	184	3.3	4.0	12.23	12.23
Annual energy consumption (kWh)	184	140.1	18.0	18.0	18.0

Indoor Unit	SPW-XDR184GVH56		SPW-XDR254GVH56		SPW-XDR364GVH56		SPW-XDR484GVH56		SPW-XDR604GVH56		
	Model	Dimensions (mm)									
As circulation (mm)	width	960x478x196	1,050x600x196	1,060x1,060x196							
Mounting clearance	length	22	—	28	—	23	—	48	—	42	—
Sound Power Level (dB)	dB(A)	42	45	45	46	46	46	43	43	43	43
Sound Pressure Level (dB)	dB(A)	21/29/33	24/31/33	26/32/33	27/36/34	27/36/34	27/36/34	24/32/33	24/32/33	24/32/33	24/32/33
Dimensions (mm) - Unit	mm	206x406x90	256x406x90	256x406x90							
Dimensions (mm) - Panel	mm	21	—	32	—	26	—	38	—	36	—
Net weight - Unit	kg	18	20	20	20	20	20	20	20	20	20
Net weight - Panel	kg	4.5	—	4.5	—	4.5	—	4.5	—	4.5	—
Power supply	V, Hz, A	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16	230, 50, 16

Additional detail	size 184		size 254		size 364		size 484		size 604	
	Tube diameter, Number/Wire	mm/mm								
Wire piping length	m	4.34	m	4.37	m	9.52	m	15.38	m	15.38
Max. run length (L x L) (m)	m	—	m	—	m	—	m	—	m	—
Max. height (m)	m	30.2								
Max. piping length (m)	m	30								
Amount of additional refrigerant (kg)	kg	30	kg	40	kg	40	kg	40	kg	40

Specifications subject to change without notice.

\* Only available at the time of customizing.

**Rating requirement**  
 Cooling factor of 3.0 (guaranteed)  
 Heating factor of 3.0 (guaranteed)  
 Heating factor of 2.8 (guaranteed)  
 Heating factor of 2.6 (guaranteed)

Power	PWR		
	Water unit price	Unit	Power
Water unit price	Euro	200.00	900.00
Water unit price	USD	242.00	1,089.00
Total price	Euro	1,060.00	4,360.00

**A Class** **B100A**



# Semi-concealed 4 way PAC-i inverter type



Size with frame



SPW-XDR...GH56(B)



New 3-phase



SPW-CR...GVH56/H8B

- Twin-spiral compressor dramatically reduces vibration and noise during operation
- DC inverter control
- Wide outdoor unit range: single-phase or three phase
- New compact design
- Reduced sound level
- Powerful drain pump gives 800mm lift
- Piping outlet in three directions
- Newly developed DC fan motor for increased efficiency
- Cooling & Heating operation down to -13°C
- Improved air flow to prevent shading effect
- Multi-functional wireless remote control with built-in temperature control
- Easy fine adjustment of the body suspension height
- Fresh air knockout for improved air quality

# Light-commercial products

SPW-UCR184GVH56 • SPW-UCR254GVH56/H8  
 SPW-UCR364GVH56/H8 • SPW-UCR484GVH56/H8  
 SPW-UCR604GVH56/HB

Power Range from 5.0 kW to 14.0 kW

Performance	SPW-UCR184GVH56				SPW-UCR254GVH56				SPW-UCR364GVH56/H8				SPW-UCR484GVH56/H8				
	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	
Capacity	HP	-10°	-15°	-20°	-10°	-15°	-20°	-25°	-10°	-15°	-20°	-25°	-10°	-15°	-20°	-25°	
Power input	kW	18.0	18.0	25.0	25.0	33.0	33.0	33.0	43.0	43.0	50.0	50.0	60.0	60.0	60.0	60.0	
EER/COP	/W/W	2.71	2.96	2.93	3.76	2.69	2.36	2.00	3.26	2.77	3.21	2.77	3.21	2.77	3.21	2.77	3.21
Energy class		B	C	D	E	F	G	H	F	G	H	I	J	K	L	M	N
Running current (A) / (A)	A	9.7	8.1	12.1/14.8	12.7/14.4	13.1/16.7	16.0/16.2	21.1/17.8	20.7/17.8	23.1/18.2	24.7/18.8	23.1/18.2	24.7/18.8	23.1/18.2	24.7/18.8	23.1/18.2	24.7/18.8
Annual energy consumption (kWh)	WkW	821.0	—	1260	—	1260	—	1260	—	1260	—	1260	—	1260	—	1260	—

Standard data	SPW-UCR184GVH56		SPW-UCR254GVH56		SPW-UCR364GVH56/H8		SPW-UCR484GVH56/H8	
	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)
Air circulation (m³/h)	m³/h	1080/1450	1080/1600/1760	1080/1400/1200	1080/1300/1200	1080/1300/1200	1080/1400/1440	1080/1400/1440
Minimum removed	dm³/h	—	—	—	4.2	—	—	—
Ex. static pressure std (mmH2O)	Pa	40 (60)	50 (80)	79 (120)	79 (120)	79 (120)	79 (120)	79 (120)
Sound Power Level (dB(A))	dB(A)	32	34	34	36	36	36	36
Sound Pressure Level (dB(A))	dB(A)	30.2/29.5	34.6/32.7	36.0/35.7	40.0/37.3	40.0/37.3	40.0/37.3	40.0/37.3
Dimensions (WxDxH)	mm	210x700x300	210x700x300	210x1400x300	210x1400x300	210x1400x300	210x1400x300	210x1400x300
Net weight	kg	35	52	47	47	47	47	47
Power supply	V ph. Hz	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50

Standard data	SPW-UCR184GVH56		SPW-UCR254GVH56		SPW-UCR364GVH56/H8		SPW-UCR484GVH56/H8	
	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)
Sound Power Level (dB)	dB(A)	34	39	40	51	53	44	45
Sound Pressure Level (dB(A))	dB(A)	40.0/39.3	43.0/39.3	43.0/39.3	51.0/50.3	52.0/50.3	52.0/50.3	52.0/50.3
Dimensions (WxDxH)	mm	500x700x300	500x700x300	700x1400x300	700x1400x300	700x1400x300	700x1400x300	700x1400x300
Net weight	kg	43	58	65	100	100	30	30
Power supply	V ph. Hz	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50	230 1~40 50

Additional data	SPW-URL-GH56(B)		SPW-URL-GH56(H)		SPW-URL-GH56(B)		SPW-URL-GH56(H)	
	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)
Total diameter (mm)/Total height (mm)	mm	435 (125/127.2)/300	432 (125/127.2)/300	432 (125/127.2)/300	432 (125/127.2)/300	432 (125/127.2)/300	432 (125/127.2)/300	432 (125/127.2)/300
Max piping length	m	—	40	50	50	50	50	50
The min. R-134a connection (m)	m	30	25.2/25.3	25.2/25.3	25.2/25.3	25.2/25.3	25.2/25.3	25.2/25.3
Charging piping length	m	—	30	30	30	30	30	30
Amount of additional refrigerant	g/kW	70	40	40	40	40	40	40

Specifications subject to change without notice.  
 Only for countries where the laws of protection of intellectual property rights allow.

**Rating conditions:**  
 Cooling: indoor air temperature 27°C (80°F)/RH 60%; outdoor air temperature 35°C (95°F)/RH 60%  
 Heating: indoor air temperature 17°C (63°F)/RH 60%; outdoor air temperature 7°C (45°F)/RH 60%

Model	Nominal heat output		Nominal power		Nominal current	
	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)	SPW-URL-GH56(B)	SPW-URL-GH56(H)
Nominal heat output	kW	18.0	25.0	36.0	48.0	60.0
Nominal power	kW	18.0	25.0	36.0	48.0	60.0



DATA



Option remote controller



SPW-URL-GH56(B)

Ideal solution for flexible and concealed air distribution to realize comfortable space



SPW-CR...GVH56/H8B

- Twin-rotary compressor dramatically reduces vibration and noise during operation
- DC-inverter control
- Wide outdoor unit range: single-phase or three-phase
- Extremely quiet operation from 25 dB(A)
- High static pressure available
- Integrated drain pump gives 700 mm lift
- Easy maintenance and serviceability by external installation of the electric box
- Standard 200mm spigots ensure simple connection to ductwork
- Cooling & Heating operation down to -15°C
- Air off sensor avoids cold air dumping
- Multi-functional wireless remote control with built-in temperature control
- Piping outlet in three directions
- Fresh air knockout for improved air quality



# Light-commercial products

SPW-DC0705H8 + SPW-DC0905H8

Power Range from 20.0 kW to 25.0 kW

Performance	DIRECT EXPAND Duct Pump			Size 100	
	Cooling	Heating		Cooling	Heating
Capacity	107	21.4		21.0	25.0
Power input	87	77.0		100.0	107.0
CO2(GWP)	0.19	2.0		2.0	2.0
Running amperes	3	14.8		21.1	21.2

Technical Data	SPW-DC0705H8		SPW-DC0905H8	
	Air circulation (m³/h)	107	Air circulation (m³/h)	133
Minimum airflow	L/min/h	8.8	L/min/h	11.3
External static pressure (Pa)	Pa	170	Pa	210
Sound Power Level (Pa)	dB-A	58	dB-A	71
Sound Pressure Level (Pa)	dB-A	49.1/49.6	dB-A	51.0/51.6
Dimensions (mm)	mm	467x1429x1726	mm	497x1429x1726
Net weight	kg	110	kg	125
Power supply	V, A, Hz	230, 1+0, 50	V, A, Hz	230, 1+0, 50

Technical Data	SPW-DC0705H8		SPW-DC0905H8	
	Sound Power Level (Pa)	48.8	Sound Pressure Level (Pa)	51
Dimensions (mm)	mm	1429x1429x1726	mm	1429x1429x1726
Net weight	kg	110	kg	125
Power supply	V, A, Hz	230, 1+0, 50	V, A, Hz	230, 1+0, 50

Refrigerant circuit	Size 700		Size 900	
	Max diameter (mm)	107	Max diameter (mm)	127
Max piping length	m	100	m	100
Max. evap. off - O.D. distance (mm)	mm	50-70	mm	50-70
Charging piping length	m	30	m	30
Amount of additional refrigerant	g/m	80	g/m	80

Specifications subject to change without notice.

**Operating conditions**  
Cooling return air temperature 20°C/20°C/60°C; Outdoor air temperature 30°C/30°C/40°C  
Heating return air temperature 27°C/25°C/50°C; outdoor air temperature 7°C/5°C/4°C



Price		
Initial unit price	€/unit	160.00
Unit price	€/unit	160.00

€1100

# High static pressure duct constant speed



Powerful and compact design for easier installation in any commercial space

## Option remote controller

- High static pressure available for optimum air distribution
- Low noise design
- R410A refrigerant
- Highly efficient scroll compressor
- Piping length up to 100m
- Cooling & Heating operation down to -15°C
- Air off sensor avoids cold air dumping
- Multi-functional wireless remote control with built-in temperature control
- Piping outlet in three directions
- Fresh air knockout for improved air quality

## COMBINATIONS

Model line	Performance		Input data		
	Cooling	Heating	Type	Power	in Hz
SPW-CXCHS/HPS - INVERTER MODEL	7.5	4.0	125 kW		
SPW-CXCHS/HPS - INVERTER MODEL	10.0	11.2	134 kW		
SPW-CXCHS/HPS - INVERTER MODEL	12.5	14.0	154 kW	156 kW	120 Hz
SPW-CXCHS/HPS - INVERTER MODEL	14.0	15.0	180 kW		
SPW-CXH - CONSTANT SPEED MODEL	20.0	23.4	364 kW	374 kW	156 Hz
SPW-CXH - CONSTANT SPEED MODEL	25.0	28.0	484 kW		

Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

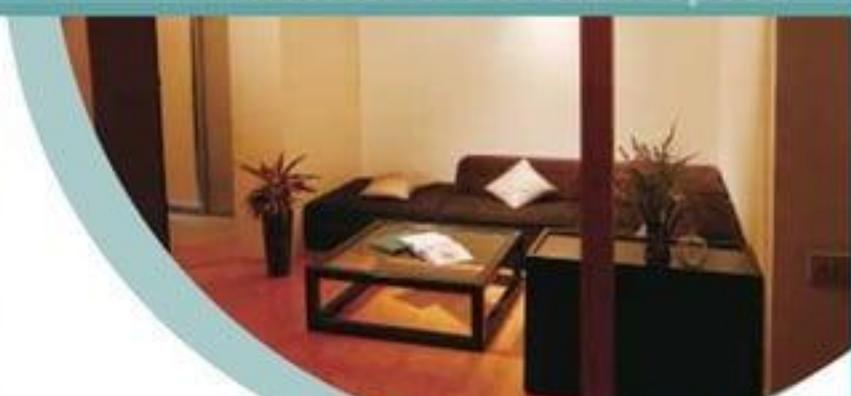
Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

Model line	SPW-EH150/HPS		SPW-EH150/HPS		SPW-EH150/HPS	
	in Hz	in Hz	in Hz	in Hz	in Hz	in Hz
Air circulation (m³/h)	40.0	720,000/420	720,000/420	700,000/400	714,000/370	
Sound Power Level (dB)	39.4	40	41	40	42	
Sound Pressure Level (dB(A))	38.4	38.0/37	38.0/37	38.0/36	38.0/34	
Dimensions (HxDxW) mm	800x200x200	200x100x200	200x100x200	200x100x200	200x100x200	200x100x200
Net weight	kg	12	12	12	12	12

## Twin/Triple/W-Twin application Inverter & Constant speed



Option remote controller



- Up to 4 standard indoor units of different types and capacities can be operated simultaneously with a single outdoor unit.
- Twin-spiral compressor with DC-inverter control (no 70% and 90% models).
- All indoor units can operate in a single mode.

- Multi-functional wireless remote control with built-in temperature sensor.
- Compact outdoor units ensure easy installation and space saving.
- Low noise design.



## Sanyo control equipment meets the needs of variety of customers

(for a description of the control systems refer to section VRF page 110)

Operation system		Individual control system			Group operation
Needs		Normal operation	Operation from each unit	Quick and easy operation	Daily and weekly program
<b>External appearance</b>					
<b>Type remote control</b>	Single-unit remote control	Wireless remote control	Simplified remote control	Schedule timer	
<b>N. of h. units which can be connected</b>	1 group, 2 units	1 group, 2 units	1 group, 2 units	All groups, max. 64 units	
<b>Limitation in use</b>	Up to 2 units can be connected per group	Up to 2 units can be connected per group	Up to 2 units can be connected per group	Power supply from the system controller • In case of no system controller possibility of connection to the T10 terminal of an inverter and	
<b>Convertible indoor unit</b>	4 series indoor unit	4 series indoor unit	4 series indoor unit	3 series indoor unit & 4 series indoor unit	

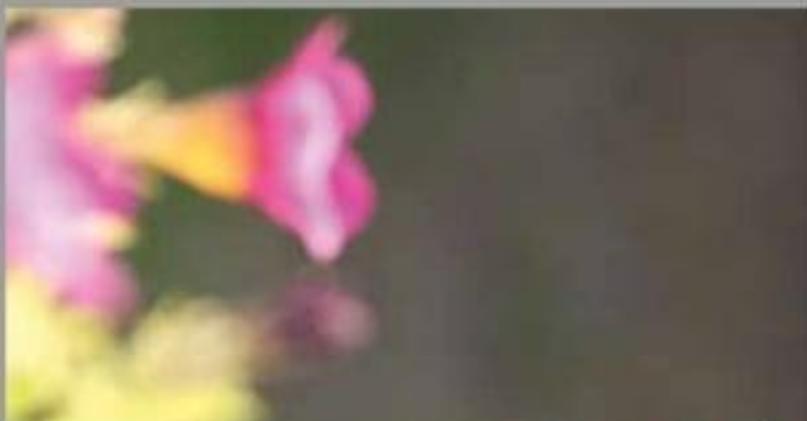
Function	DRY	VENT	COOL	HEAT	SWING
Heat setting	○		○	○	++
Fan speed setting	○		○	○	++
Temperature setting	○		○	○	++
All time selection	○		○	○	++
Humidity control	--	--	--	--	--
Weather forecast	○	--	--	--	○

\* Operation by holding "Temp. set" for 2 sec. (maximum 2 sec. per key)

Operation system		Centralized control system		Simplified charge ratio for each room	
Needs		Operation with different functions from central station	Duty On/Off operation, local control station	Touch screen panel	Personal computer (local control)
<b>Outer appearance</b>					
<b>Type remote control</b>	System controller	Local controller	Intelligent controller	Communication adapter	
<b>N. of h. units which can be connected</b>	All groups, max. 64 units	16 groups, max. 64 units	All units in 4 systems, max. 256 units	2 systems, max. 128 units	
<b>Power limitation</b>	• Up to 10 units can be connected to one system. • Max. 1 unit and 2 stage unit + 2 auto-unit connection is possible. • Possibility of use • Use without remote controller is possible	• Up to 10 units can be connected to one system. • Max. 1 unit and 2 stage unit + 2 auto-unit connection is possible. • Possibility of use • Use without remote controller is possible	• Up to 10 units in one system • 1 unit and 2 stage unit + 2 auto-unit connection is possible. • Possibility of use • Use without remote controller is possible	• Air conditioner adapter (SNA-KA125A2) required for library or school systems	
<b>Convertible indoor unit</b>	2 series indoor unit & 8 series indoor unit	2 series indoor unit & 4 series indoor unit	2 series indoor unit & 4 series indoor unit	2 series indoor unit & 8 series indoor unit	

Function	DRY	VENT	COOL	HEAT	SWING
Heat setting	○		○	○	○
Fan speed setting	○		--	○	○
Temperature setting	○		--	○	○
All time selection	○		--	○	○
Humidity control	--	--	--	--	--
Weather forecast	--	--	--	○	○

\* Operation by holding "Temp. set" for 2 sec. (maximum 2 sec. per key)



## SANYO

**SANYO Variable Refrigerant Flow systems**  
a powerful range perfect for shopping centres,  
hotels, offices and hospitals

Full range based on ozone-friendly R410A refrigerant ensure high performances to create a comfortable living space under different demands. The ECO-i series is designed for energy saving, easy installation and high efficiency, using electrical supply as main power source.

The Sanyo GHP (gas engine driven heat pump) uses clean burning natural gas for high efficiency operation with very limited use of electrical power. Since it is designed to work combined with water piping, the Sanyo GHP offers a practical and efficient way to renew an existing air-conditioning system.

### INDEX OF PRODUCTS:

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ECO-i 3 way	pag. 84
GHP 2 way	pag. 88
GHP 3 way	pag. 90
Indoor units	pag. 92
Total heat exchanger	pag. 108
Control systems	pag. 110

# Variable Refrigerant Flow products

Mini "ECO-i"  
Inverter type

SPW-CR365GXH56/H8 • SPW-CR485GXH56/H8  
SPW-CR605GXH56/H8

Power Range from 11.2 kW to 15.5kW

Model name Nominal capacity	SPW-CR365GXH56/H8		
	SPW-CR485GXH56/H8	SPW-CR605GXH56/H8	SPW-CR605GXH56/H8
Heating	11.2	14.5	15.5
Heating	36.5kW	48.5kW	60.5kW
COP	4.5	4.5	4.5
Heating	4.5	4.5	4.5
Heating	11.2kW	14.5kW	15.5kW
Power input	11.2	14.5	15.5
Running capacity	11.2kW	14.5kW	15.5kW
Water heat	11.2	14.5	15.5
Net weight	112kg	145kg	155kg
Net dimensions	1120x450x250	1450x450x250	1550x450x250
Quantity of refrigerant at shipment	100g	100g	100g
Piping connection	Gas side	Gas side	Gas side
Pressure switch	Normal mode	Normal mode	Normal mode
Power input	Normal mode	Normal mode	Normal mode
Water (normal water flow)	91.2	91.2	91.2
Unit price (Ex-works)			

Specifications subject to change without notice

**Rating conditions:**  
Cooling: Outdoor temperature 27°C DB/19°C WB; Indoor air temperature 20°C DB/14°C WB;  
Heating: Outdoor temperature 0°C DB; Indoor air temperature 17°C DB/14°C WB

Refrigerant piping length			
Max. L.	100	100	100
Max. number of connectable indoor units	8	8	8
Indoor connection capacity (kW)	36.5kW	48.5kW	60.5kW
Max. outdoor piping length	100 m	100 m	100 m
Max. total piping length	100 m	100 m	100 m
Max. number of outdoor units	8	8	8
Max. number of connectable indoor units	8	8	8
Max. outdoor unit height (max.)	2.5 m	2.5 m	2.5 m
Max. outdoor unit width (max.)	0.8 m	1.0 m	1.0 m

Distribution plan for 3-phase		
For indoor units	Model name SPW-CR365GXH56/H8	Cooling capacity after joint 11.2 kW



B410A



SPW-CR...H56(B)/H8

New 3-phase  
line-up

- Top class COP> 4.56 (in case of 4HP)
- DC Inverter Compressor and Fan
- 8 indoor units can be connected to 1 outdoor unit. (in case of 6HP)
- Wider model range: single-phase and three-phase
- It is possible to perform cooling operation at outdoor temperatures down to -10°C
- Piping length is extended to 150m
- Indoor units are the same as those of ECO-i Series

## **Variable Refrigerant Flow products**

SPW-C0705DXHB • SPW-C0905DXHB • SPW-C1155DXHB  
SPW-C1305DXHB • SPW-C1405DXHB

Power Range from 22.4 kW to 135 kW

Maximum number of unconditioned anterior units	2	Maximum overall placing length	150 mm
Maximum # of conditioned anterior units	10-18	Maximum linear difference between anterior and 2nd premolar	10-15 mm
Maximum number of posterior units	4	Maximum overall placing length	150 mm

**Meeting conditions**  
Meeting between all employees (277), 780 (78%), 948 (Meeting as supervisor) 391 (39%) and  
Meeting between all supervisors (301), 386 (Meeting as supervisor) 71 (23%) and  
Meeting between all managers (71), 381 (Meeting as supervisor) 71 (23%).

<b>Estimated capital cost</b>	<b>Model name</b>	<b>Scaling capacity, after year</b>
For indoor units	air-Pr0000	<1-100
	air-Pr0005	100-1000
	air-Pr0010	1000-10000
For outdoor units	air-Pt0000	<1-100
	air-Pt0005	100-1000
	air-Pt0010	1000-10000



Nine

The ECO-i S-series is designed for energy savings, easy installation and high efficiency. Always keeping to evolving, Samyo uses advanced technologies to meet the requirements of different situations and add in to the creation of comfortable living spaces.

- Top-class COP=3.90 (in case of 8kW)
  - Twin rotary DC inverter compressor
  - Wide range of product for narrower installation space
  - DC fan motor
  - Name: 14 & 16HP
  - It is possible to perform cooling operation at outdoor temperature down to -10°C



## The advanced technology of ECO-i 2-WAY MULTI



Outdoor units have been unified in a body of the same size.  
Utilization to one face and combination of five types. It allows a total fit even when several units are installed and space savings in the top class of the industry have been realized.

**Improved insulation efficiency**  
In addition to the development of a new DC fan motor with high robust and high efficiency, the output loss has been reduced by reducing the resistance of the fan guard. It contributes widely to COP increasing.

The constant-speed compressor adopts a high-performance linear high-pressure scroll.  
In comparison with the conventional low-pressure scroll, the behavior is stabilized. COP is improved and the reliability is also improved.

**Improvement of the heat exchanger**  
Holes with a diameter of 7 mm are used for the heat exchanger and the radiation area has been increased. In addition, the air speed distribution has been improved by 4-directional action and the COP has also been improved.

**Reduction of the layout of the structural parts**  
Noise reduction has been realized by arranging the compressor in a special machine room at the bottom.

**Closer side-by-side installation is possible**  
The mounting fitting for the outdoor unit heat terminals changed to front and back, so that the units can be installed side by side with just 100 mm between units and reduction of the installation space has been realized.

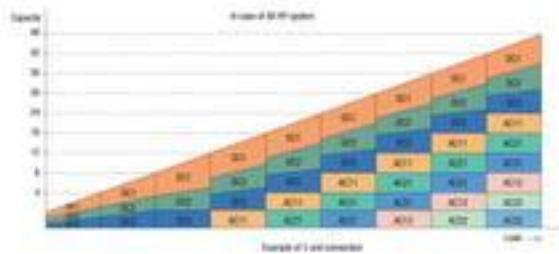
## Smooth capacity control from 0.8 HP to 48 HP

By combination of a DC inverter compressor with a constant-speed compressor, the high harmonics generated by the DC inverter are suppressed to a minimum.

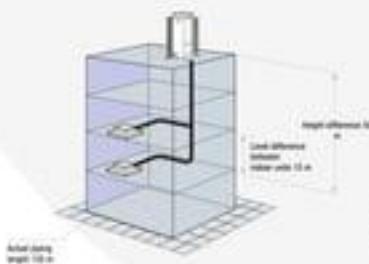
For all units of 8, 10, 12, 14 and 16 HP, a DC inverter and a constant-speed compressor both are installed. Correspondence to capacity control without a constant-speed compressor is possible smoothly with a DC inverter. The performance difference at the time of start of a constant-speed compressor also is eliminated.

Group HP	Indoor model	outdoor model	Ind. Load %
DC comp.	48	48	48
AC comp.	8.0	8.0	100
DC comp.	8.0	8.0	8.0

(Indoor and outdoor units)



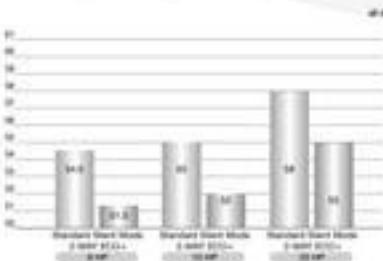
## Correspondence to long piping in the top class of the industry



The reduction in the refrigerant volume by piping size down has extended the piping length to an actual length of 150 m and a total length of 300 m, the top class in the industry. The possible installation areas for indoor and outdoor units has been widened and system deployment with a high degree of freedom has become possible.

Actual piping length 100 m → 150 m  
Equivalent piping length 120 m → 175 m  
Total piping length 150 m → 300 m

## Low-operating sound design in the top class of the industry

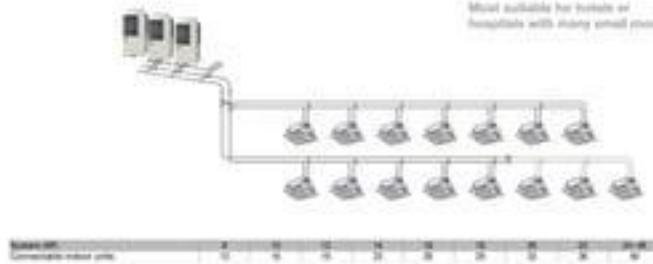


Noise reduction has been realized by using of large-diameter plastic tube and low-loss plastic grille.

- A silent function has been provided, making possible a further reduction of 3 dB (A).
- The outdoor fan speed can be varied only after switching to silent mode from the outdoor remote control unit.

The total capacity cannot be performed in silent mode.

## Increased max. number of connectable indoor units



## **Variable Refrigerant Flow products**

100

100-  
103-

"ECO i" 3-way series  
inverter type

SPW-CR704GDZH8 • SPW-CR904GDZH8 • SPW-CR1154GDZH8  
SPW-CR1304GDZH8 • SPW-CR1404GDZH8

Power Range from 22.4 kW to 135 kW

For more information about the study, contact Dr. Michael J. Hwang at (319) 356-4000 or email at [mhwang@uiowa.edu](mailto:mhwang@uiowa.edu).

For more information about the authors, or to receive a copy of the full report, please contact the Office of the Secretary, U.S. Department of Energy, Washington, D.C. 20585.

<b>Maximum young weight:</b>		<b>Minimum adult young weight:</b>	100-110
<b>Maximum LF of collected adult weight:</b>	40-47	<b>Maximum mass difference (one individual adult vs. one yearling):</b>	30-35%
<b>Maximum number of consecutive, larger sets:</b>	30	<b>Minimum total young weight:</b>	500

**Training conditions** *(see also section on training conditions)*

Journal of Nonlinear Science 2011, 21(6) DOI 10.1007/s00332-011-9141-4



Schmandt-Wilson K29



40K-012756000  
40K-012756000

Sellerwood Valley  
Community



PHOTOGRAPH BY JEFFREY M. STONE

The ECO-i 3 Way Series have five DC Inverter outdoor units from 8 HP to 18 HP as basic models and by combination of up to three units, an air-conditioning capacity of 8 HP to 48 HP can be set according to user requirements.

- Simultaneous cooling or heating operation for up to 40 indoor units
  - Conforms to CS/CS-III as the top class in the industry
  - Realization of the smallest installation space, top class in the industry
  - Rotation operation function and function to prevent condensation

These writers are from [http://www.wiki.org](#)

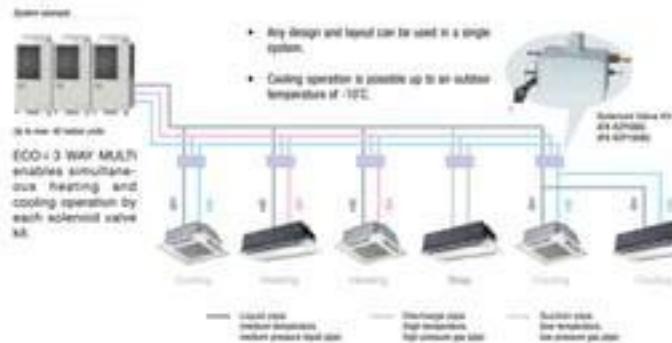


# Variable Refrigerant Flow products

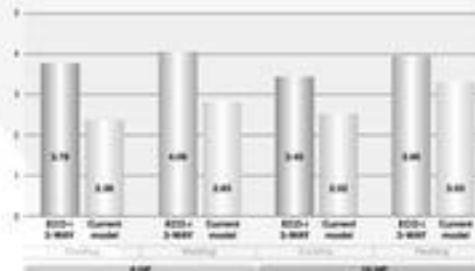
eco-i  
W.F. series

"eco-i" 3-way series  
inverter type

Fully-automatic simultaneous Cooling/Heating operation and heat recovery



Excellent energy saving



The operation efficiency has been improved by using the highly efficient new refrigerant R410A and a DC inverter compressor as well as a new DC fan motor, improvement of the air speed distribution by changing the design of the heat exchanger from 2-direction suction to 4-direction suction and by using a low-loss wire guard for the fan part.

## The advanced technology of ECO-i 3-WAY MULTI



**Outdoor unit basic layout modified by a study of the space usage**  
Optimization of the heat exchanger  
Hangers with a diameter of 2 mm are used for the heat exchanger and the radiation area has been increased. In addition, the air speed distribution has been improved by 4-direction suction and the COP has also been improved.

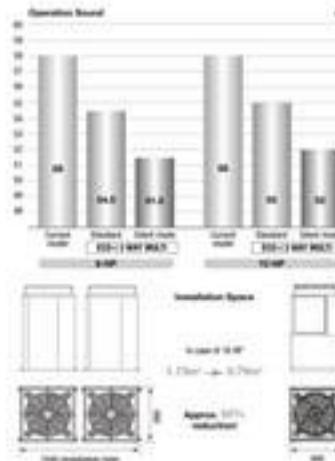
**Improvement of the heat exchanger**  
In addition to the development of a new DC fan motor with high output and high efficiency, the output loss has been reduced by reducing the resistance of the fan guard. It contributes greatly to COP increasing.

**Improved operating efficiency**  
Review of the layout of the structural parts  
Noise reduction has been realized by arranging the compressor in a special machine room at the bottom.

**Close side-by-side installation is possible**  
The mounting fitting for the outdoor unit has been changed to front and back, so that the unit can be installed side by side with just 100 mm between units and reduction of the installation space has been realized.

**The constant-speed compressor adopts a high-performance inverter high-pressure scroll**  
In comparison with the conventional low-pressure scroll, the oil behavior is stabilized, COP is improved and the reliability is also improved.

Smallest installation space in the industry!  
Further reduction of the operating sound



The four DC inverter types from 8 HP to 16 HP have been unified to the same outer dimensions by using a two-tier construction with the compressor and other structural parts at the lower part of the outdoor unit and the heat exchanger at the upper part of the outdoor unit. In this way, the smallest installation space in the industry and low operating sound have been realized.

# Variable Refrigerant Flow

## Gas Heat Pump 2 way

ECO G  
Standard

SGP-E70K1GU2 • SGP-E90K1GU2 • SGP-E120K1GU2W  
SGP-E150K1GU2W • SGP-E190K1GU2W • SGP-E240K1GU2W

Power Range from 22.4 kW to 71 kW



SGP-E\_GU2 SGP-E\_GU2W

- Prevent global warming  
(Lowers CO<sub>2</sub> emission standard)
- Up to 40% reduction of nitrogen oxide  
(NOx) emission
- Reduced gas consumption

The Sanyo GHP uses HFC-type refrigerant and clean-burning natural gas for high-efficiency operation. Since it is designed to work with existing piping, the Sanyo GHP offers an easy way to maximize that is economical to run and maintain.

- Reduced electric power consumption
- Outstanding durability for greater economical efficiency
- Outdoor unit has reduced noise and vibration

Model name Capacity	A		B		C		D		E		F	
	Supply Capacity	Supply Current										
SGP-E70K1GU2	22.4	0.7	22.4	0.7	22.4	0.7	22.4	0.7	22.4	0.7	22.4	0.7
SGP-E90K1GU2	27.0	0.8	27.0	0.8	27.0	0.8	27.0	0.8	27.0	0.8	27.0	0.8
SGP-E120K1GU2W	35.5	1.0	35.5	1.0	35.5	1.0	35.5	1.0	35.5	1.0	35.5	1.0
SGP-E150K1GU2W	44.0	1.2	44.0	1.2	44.0	1.2	44.0	1.2	44.0	1.2	44.0	1.2
SGP-E190K1GU2W	52.5	1.4	52.5	1.4	52.5	1.4	52.5	1.4	52.5	1.4	52.5	1.4
SGP-E240K1GU2W	61.0	1.6	61.0	1.6	61.0	1.6	61.0	1.6	61.0	1.6	61.0	1.6

Rating conditions:  
Cooling indoor air temperature 27°C/19°C WB; Outdoor air temperature 30°C/28°C/14°C WB;  
Heating indoor air temperature 20°C/16°C; Outdoor air temperature 7°C/5°C/14°C WB

1.0 m/s air flow, 0.6 m<sup>2</sup> insulation surface, light load at 40°C outdoor air temperature and under normal conditions

Indoor coil heat loss		
For indoor units	Model name	Indoor coil heat loss
SGP-E70K1GU2	SGP-E70K1GU2	-12.1 kW
SGP-E90K1GU2	SGP-E90K1GU2	-15.1 kW
SGP-E120K1GU2W	SGP-E120K1GU2W	-19.1 kW
SGP-E150K1GU2W	SGP-E150K1GU2W	-23.1 kW
SGP-E190K1GU2W	SGP-E190K1GU2W	-26.1 kW
SGP-E240K1GU2W	SGP-E240K1GU2W	-30.1 kW

B410A

# Gas Heat Pump 3 way

ECO G  
Standard

SGP-EZ190K1GU2

Power Range 56.0 kW

Solenoid Valve Kit



ATK-R2P56BG  
ATK-R2P160BG

Solenoid Valve  
Controller



ACC-3WAY-AG

New



SGP-EZ190K1GU2

Sanyo 3-Way GHP is ideal for the following applications:

- Office buildings with different room temperatures due to the different amount of sunlight received
- Up to 28 indoor units connectable to one outdoor unit
- Buildings with computer/business equipment rooms requiring year-round cooling

#### Indoor piping length

Model name		0.10~0.20~0.30~0.35	0.20~0.30~0.40~0.50	0.30~0.40~0.50~0.60
SGP-E70K1GU2	SGP-E90K1GU2	SGP-E120K1GU2W	SGP-E150K1GU2W	SGP-E190K1GU2W
SGP-E70K1GU2	SGP-E90K1GU2	SGP-E120K1GU2W	SGP-E150K1GU2W	SGP-E190K1GU2W
SGP-E70K1GU2	SGP-E90K1GU2	SGP-E120K1GU2W	SGP-E150K1GU2W	SGP-E190K1GU2W
SGP-E70K1GU2	SGP-E90K1GU2	SGP-E120K1GU2W	SGP-E150K1GU2W	SGP-E190K1GU2W

#### Minimum piping length

Model name: SGP-EZ190K1GU2  
Capacity: 56.0 kW  
Indoor coil heat loss: 20.0 kW

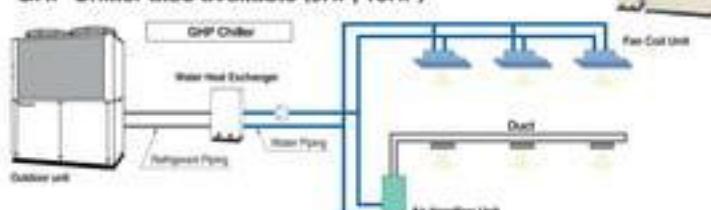
Minimum piping length: 10.0 m (including height difference of 10.0 m)

Indoor coil heat loss: 20.0 kW

## **Variable Refrigerant Flow GHP Chillers**

## **System mixing flexibility**

GHP Chiller also available (9HP, 18HP)



Meeting of a wide range of temperature needs for all kinds of industrial fields from air-conditioning to food processing to the replacement of existing boiler and other systems.

Reporting position	Rating	Rating distribution	Rating distribution
Overall satisfaction with the discharge visit	Good (75%)	Good (75%)	Good (75%)
How discharged and advised	Good (75%)	Good (75%)	Good (75%)

- **Reduced installation cost and circulating pump power**  
The water heat exchanger is a split-type, which reduces installation costs and allows the use of a less powerful circulating pump.



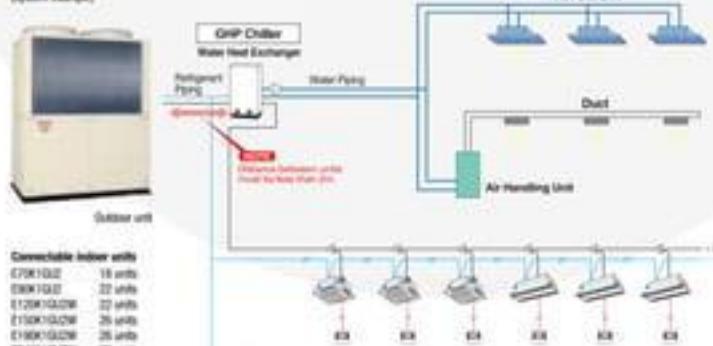
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- Combined with a water heat exchanger unit, the SANYO GHP can create a feasible system, the ideal replacement to existing chiller and boiler system.

- + The GHP Multi System can have an indoor unit plus a GHP chiller. When the two systems are operated independently an outdoor unit with a 200% capacity can be connected.

### **Chemotherapy**



Note: The results of running of software and devices on the auto load passenger's needs. The auto-pilot is well isolated in the regular traffic environment. For automated navigation function, the maximum accuracy is 100%. Please review details of the current status of vehicle.

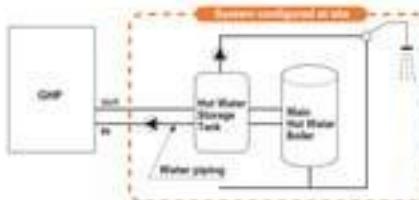
#### Hot Water Supply Function

SGP-E120, 150, 190, 240 K1GU2W

#### **System Advantages**

The energy exceeding heat, which is normally wasted into the atmosphere, is recovered by means of the heat exchanger and effectively used as hot water, as the GHP Chiller acts as a sub-boiler that minimizes the load on the customer main hot water system.

Water heating capacity	produces 75°C hot water
Hot water piping allowable pressure	0.158Psi
Hot water circulation rate	2.1 - 3.8 m/min
Hot water valve size	1/2"
Water meter size	1/2"



SUP-E K10WZ

## Variable Refrigerant Flow products

## Indoor units

#### Semi Concealed 4-way air discharge

SPW-XDR74GXH56 • SPW-XDR94GXH56 • SPW-XDR124GXH56  
SPW-XDR164GXH56 • SPW-XDR184GXH56 • SPW-XDR254GXH56  
SPW-XDR364GXH56 • SPW-XDR484GXH56 • SPW-XDR604GXH56

Power Range from 2.2 kW to 16.0 kW

Performance	Value (kW)	SPW-1000000	SPW-1000000	SPW-1000000	SPW-1000000	SPW-1000000	
		Starting	Running	Starting	Running	Starting	Running
Input Power	400	1.20	0.90	1.20	0.90	1.20	0.90
Efficiency	90%	90%	90%	90%	90%	90%	90%
<b>Electrical Rating</b>							
Phase Frequency	1-Phase (50 Hz)	T-Phase (50 Hz)					
Voltage (VAC)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Power (kW)	1	1	1	1	1	1	1
Power (kVA)	1.20	0.90	1.20	0.90	1.20	0.90	1.20
Current (A)	2.00	1.50	2.00	1.50	2.00	1.50	2.00
<b>Features</b>							
Rated Power	200/210/220	200/210/220	200/210/220	200/210/220	200/210/220	200/210/220	200/210/220
Max Power	240/250/260	240/250/260	240/250/260	240/250/260	240/250/260	240/250/260	240/250/260
Net Job Temperature (F)	100	100	100	100	100	100	100
<b>Dimensions &amp; Weight</b>							
Width (mm)	100	100	100	100	100	100	100
Height (mm)	100	100	100	100	100	100	100
Depth (mm)	100	100	100	100	100	100	100
Net weight (kg)	20	20	20	20	20	20	20
Gross weight (kg)	25	25	25	25	25	25	25
Front width	100	100	100	100	100	100	100
Front depth	100	100	100	100	100	100	100

Model No.	Order Type	SPW-1000000000		SPW-1000000000		SPW-1000000000		SPW-1000000000	
		Dating	Shipping	Dating	Shipping	Dating	Shipping	Dating	Shipping
Performance									
Baseline	100	C-30	B-1	C-30	C-14	C-14	C-13	C-30	C-13
Re-resolution									
Re-resolution	1000000000	999		1000		1000		1000	
Technical Rating									
Performance									
Baseline rating	1	1 month(s) 1 day(s)							
Baseline rating (diff)	1	22h-23h (24)		22h-23h (24)		22h-23h (24)		22h-23h (24)	
Running average	2	0.97	0.93	0.98	0.98	0.97	0.93	0.98	0.97
Mean deviation	0	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Baseline									
Baseline rating	1000000000	1000000000		1000000000		1000000000		1000000000	
Baseline rating (diff)	1000000000	1000000000		1000000000		1000000000		1000000000	
Re-resolution									
Re-resolution	1000000000	1000000000		1000000000		1000000000		1000000000	
Dimensions & Weight									
Motor size (mm)	100	200 x 100 x 100							
Motor weight (kg)	10	1000 g		1000 g		1000 g		1000 g	
Power (W)	100	100 W		100 W		100 W		100 W	
Max RPM (min⁻¹)	10000	10000 min⁻¹		10000 min⁻¹		10000 min⁻¹		10000 min⁻¹	
Max torque (N·m)	10	10 N·m		10 N·m		10 N·m		10 N·m	
Max current (A)	10	10 A		10 A		10 A		10 A	
Max voltage (V)	10	10 V		10 V		10 V		10 V	
Max weight	10	10 g		10 g		10 g		10 g	

**Reading conditions**  
Reading material: *Deutsche Presse-Agentur* (DPA) (1994-1997), *Welt am Sonntag* (WA) (1994-1997), *Die Zeit* (1994-1997), *Frankfurter Allgemeine Zeitung* (FAZ) (1994-1997)



#### Option remote controller



Pre-ADAG-01



SPW-XDR..GXH56/B



CMS-HF1404G +  
CMS-GG1404G  
impacts

- Grille fans and heat exchanger fins with new shapes are adopted and the operating sound could be reduced by max 8 dB (A).
  - Wide reduction of the power consumption by adoption of newly developed DC fan motors with variable speed, new heat exchangers
  - Easy fine adjustment of the body suspension height.
  - Discharge opening and flap with new shape
  - Light, thin and attractive design with easy installation
  - A drain height of approximately 80 cm from the cooling surface
  - Easy servicing of the drain pan

# Variable Refrigerant Flow

## Semi Concealed 4-way air discharge

SPW-XMR74EXH56 • SPW-XMR94EXH56 • SPW-XMR124EXH56  
SPW-XMR164EXH56 • SPW-XMR184EXH56

Power Range from 2.2 kW to 5.6 kW



Option remote controller

Panel



PNR-XM13NEHA

SPW-XMR...EXH56(B)

- New dimensions 60 x 60 cm suitable for European undercabinet standards
- Three-speed centrifugal fan
- Anti-mould and anti-bacteria washable filters
- Low operating sound
- Night set back capability

## Semi Concealed 2-way air discharge

SPW-SR74GXH56 • SPW-SR94GXH56 • SPW-SR124GXH56  
SPW-SR164GXH56 • SPW-SR184GXH56 • SPW-SR254GXH56

Power Range from 2.2 kW to 7.3 kW



Option remote controller

Panel



PNR-S150GHANB  
PNR-S150GHANB  
PNR-S250GHANB  
PNR-S250GHANB

SPW-SR...GXH56(B)

- Realization of thin, compact and light units
- Silent design
- Realization of most suitable air flow for heating and cooling
- Excellent installation performance
- Adoption of a power up-down pump
- Simple maintenance

Model No.		Input kW		SPW-XMR050EXH56		SPW-XMR074EXH56		SPW-XMR094EXH56		SPW-XMR124EXH56		SPW-XMR164EXH56		SPW-XMR184EXH56	
		Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
<b>Dimensions</b>															
Phase	Single	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase
Voltage rating	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
Current rating	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Frequency	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Power source	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Power source frequency	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Dimensions & Weight															
Width (mm)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Height (mm)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth (mm)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net weight (kg)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Gross weight (kg)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Dimensions stated in mm unless otherwise indicated.

**Rating conditions:**  
Cooling indoor air temperature 27°C DB/25°C WB; Indoor air temperature 20°C DB/19°C WB  
Heating indoor air temperature 20°C DB; Outdoor air temperature 7°C DB/5°C WB

Model No.		Input kW		SPW-SR050GXH56		SPW-SR074GXH56		SPW-SR094GXH56		SPW-SR124GXH56		SPW-SR164GXH56		SPW-SR184GXH56	
		Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating	Cooling	Heating
<b>Dimensions</b>															
Phase	Single	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase	1 phase
Voltage rating	230	230	230	230	230	230	230	230	230	230	230	230	230	230	230
Current rating	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Frequency	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Power source	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC
Power source frequency	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
Dimensions & Weight															
Width (mm)	600	600	600	600	600	600	600	600	600	600	600	600	600	600	600
Height (mm)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Depth (mm)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net weight (kg)	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Gross weight (kg)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Dimensions stated in mm unless otherwise indicated.

**Rating conditions:**  
Cooling indoor air temperature 27°C DB/25°C WB; Indoor air temperature 20°C DB/19°C WB  
Heating indoor air temperature 20°C DB; Outdoor air temperature 7°C DB/5°C WB

# Variable Refrigerant Flow

## Semi Concealed 1-way air discharge

SPW-ADR74GXH56 • SPW-ADR94GXH56 • SPW-ADR124GXH56

Power Range from 2.2 kW to 3.6 kW



Option remote controller

Panel



PNR-AD124GXH56



SPW-ADR...GXH56(B)

- New development concept: low Sound, Light Weight and Compact
- Ideal for hotel and hospital applications
- Drain pump features 850mm height
- Ultra-light design, only 17kg for class 9 and class 12
- Automatic flap movement ensures optimum air distribution and ceiling protection
- Long life filter included
- Three-speed centrifugal fan by wired or wireless remote controller

## Semi Concealed Slim 1-way air discharge

SPW-LDR94GXH56 • SPW-LDR124GXH56  
SPW-LDR164GXH56 • SPW-LDR184GXH56  
SPW-LDR254GXH56

Power Range from 2.2 kW to 7.3 kW



Option remote controller

Panel



PNR-LD254GXH56



SPW-LDR...GXH56(B)

- Including high capacity to handle ceiling heights up to 4.2m
- Lightweight, compact and quiet
- 3 types of air-flow: down, down-front, front-only
- Smudge-free operation
- The hanging height of the unit can be easily adjusted
- Automatic flap movement ensures optimum air distribution
- Drain pump features 850mm height
- Three-speed centrifugal fan by wired or wireless remote controller

Model No.	Input kW	SPW-ADR94GXH56		SPW-ADR124GXH56		SPW-ADR164GXH56	
		Cooling	Heating	Cooling	Heating	Cooling	Heating
<b>Performance</b>							
Cooling	4.0	2.20	2.20	5.20	3.60	5.20	3.60
Heating	4.0	2.20	2.20	5.20	3.60	5.20	3.60
<b>Electrical Rating</b>							
Phase/Current	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A
Rating voltage	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Running current	0.4	0.20	0.20	0.5	0.30	0.5	0.30
<b>Dimensions &amp; Weight</b>							
Width x Depth	300 x 850	300 x 850	300 x 850	300 x 850	300 x 850	300 x 850	300 x 850
Unit weight	10	27	27	31	31	31	31
Unit height	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Total weight	10	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100

**Rating conditions:**  
Cooling: Indoor air temperature 27°C DB/24°C WB; Outdoor air temperature 35°C DB/24°C WB  
Heating: Indoor air temperature 15°C DB/14°C WB; Outdoor air temperature 7°C DB/6°C WB

Model No.	Input kW	SPW-ADR94GXH56		SPW-ADR124GXH56		SPW-ADR164GXH56	
		Cooling	Heating	Cooling	Heating	Cooling	Heating
<b>Performance</b>							
Cooling	4.0	2.20	2.20	5.20	3.60	5.20	3.60
Heating	4.0	2.20	2.20	5.20	3.60	5.20	3.60
<b>Electrical Rating</b>							
Phase/Current	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A	1 phase/5 A
Rating voltage	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Running current	0.4	0.20	0.20	0.5	0.30	0.5	0.30
<b>Dimensions &amp; Weight</b>							
Width x Depth	300 x 700	300 x 700	300 x 700	300 x 700	300 x 700	300 x 700	300 x 700
Unit weight	10	27	27	31	31	31	31
Total weight	10	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100	35 x 100 x 100

**Rating conditions:**  
Cooling: Indoor air temperature 27°C DB/24°C WB; Outdoor air temperature 35°C DB/24°C WB  
Heating: Indoor air temperature 15°C DB/14°C WB; Outdoor air temperature 7°C DB/6°C WB

# Variable Refrigerant Flow products

## Indoor units Concealed duct

SPW-UR74GXH56 • SPW-UR94GXH56 • SPW-UR124GXH56  
 SPW-UR164GXH56 • SPW-UR184GXH56 • SPW-UR254GXH56  
 SPW-UR364GXH56 • SPW-UR484GXH56

Power Range from 2.2 kW to 14.0 kW

Model No. Indoor Unit		SPW-UR74GXH56	SPW-UR94GXH56	SPW-UR124GXH56	SPW-UR164GXH56
<b>Performance</b>					
Heating	44 °C	1.00	1.00	1.00	1.00
Dehumidification	(kg/h) 4.00	0.80	1.00	1.00	1.00
External static pressure	(Pa) 200	0.0	0.0	0.0	0.0
Refrigerant charge (kg)	1.00	0.0	0.0	0.0	0.0
<b>Dimensions</b>					
Panel thickness	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm
Width x height (mm)	740 x 290 (290)	940 x 290 (290)	1240 x 290 (290)	1640 x 290 (290)	2540 x 290 (290)
Height (mm)	1.00	0.80	1.00	1.00	1.00
Depth (mm)	100	100	100	100	100
<b>Weights</b>					
Panel weight (kg)	40.00	40.00	40.00	40.00	40.00
Refrigerant weight (kg)	1.00	1.00	1.00	1.00	1.00
Total weight (kg)	41.00	41.00	41.00	41.00	41.00
Net weight (kg)	40.00	40.00	40.00	40.00	40.00

Specification subject to change without notice

Model No. Indoor Unit		SPW-UR94GXH56	SPW-UR124GXH56	SPW-UR164GXH56	SPW-UR254GXH56
<b>Performance</b>					
Heating	46 °C	1.00	1.00	1.00	1.00
Dehumidification	(kg/h) 4.00	0.80	1.00	1.00	1.00
External static pressure	(Pa) 200	0.0	0.0	0.0	0.0
Refrigerant charge (kg)	1.00	0.0	0.0	0.0	0.0
<b>Dimensions</b>					
Panel thickness	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm	1 piece/0.5 mm
Width x height (mm)	940 x 290 (290)	1240 x 290 (290)	1640 x 290 (290)	2540 x 290 (290)	2540 x 290 (290)
Height (mm)	1.00	0.80	1.00	1.00	1.00
Depth (mm)	100	100	100	100	100
<b>Weights</b>					
Panel weight (kg)	40.00	40.00	40.00	40.00	40.00
Refrigerant weight (kg)	1.00	1.00	1.00	1.00	1.00
Total weight (kg)	41.00	41.00	41.00	41.00	41.00
Net weight (kg)	40.00	40.00	40.00	40.00	40.00

Specification subject to change without notice

**Operating conditions**  
 Cooling indoor air temperature 27°C DB/27°C WB; Outdoor air temperature 30°C DB/24°C WB  
 Heating indoor air temperature 20°C DB/20°C WB; Outdoor air temperature 7°C DB/14°C WB



Option remote controller



SPW-UR...GXH56(B)

- Realized comfortable ambient by dispersed arrangement of discharge ports
- The static pressure outside the unit can be increased using a booster valve
- Discharge duct adapter flange included (2 x 200 for sizes 74-184, 3 x 200 for size 254, 4 x 200 for sizes 364, 484)
- Drain pump with increased power
- Easy maintenance by outer insulation of electric equipment box

# Variable Refrigerant Flow

## Concealed duct Slim

SPW-FUR74EXH56 • SPW-FUR94EXH56 • SPW-FUR124EXH56  
 SPW-FUR164EXH56 • SPW-FUR184EXH56 • SPW-FUR224EXH56

Power Range from 2.2 kW to 6.4 kW



Option remote controller

SPW-FUR...EXH56(B)

- Ultra-slim profile: 190 mm for all models
- Suitable for horizontal and vertical installation
- Ideal for hotel application with very thin false-ceiling
- Extremely silent: 26 dB(A) at low speed (Class 7.8.12)
- Anti-mould washable filters included
- Easy maintenance and service by air suction port
- Three-speed centrifugal fan by wired or wireless remote controller

SPW-UMR74EXH56 • SPW-UMR94EXH56 • SPW-UMR124EXH56  
 SPW-UMR164EXH56 • SPW-UMR184EXH56 • SPW-UMR224EXH56

Power Range from 2.2 kW to 6.4 kW



Option remote controller

SPW-UMR...EXH56(B)

- Integrated pump for condensate discharge
- Fresh air intake
- Reduced dimensions
- Anti-mould and anti-bacteria washable filters
- Three-speed centrifugal fan by remote control and feature to increase speed/pressure, using the booster function
- Night set back capability

Model No.		Input Unit		SPW-FUR074EXH56		SPW-FUR094EXH56		SPW-FUR124EXH56		SPW-FUR164EXH56		SPW-FUR184EXH56		SPW-FUR224EXH56	
Performance		Capacity kW		Cooling / Heating kW											
<b>Standard Rating</b>															
Power, Inverter	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V
Intake air temp. (A) Intake air temp. (B)	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C
Mounting height Max. (m)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Performance</b>															
Power, Inverter	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V
Intake air temp. (A) Intake air temp. (B)	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C
Mounting height Max. (m)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Dimensions &amp; Weight</b>															
Outer unit height Width x depth	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190
Net weight (kg)	10		10		10		10		10		10		10		10

Specifications subject to change without notice

**Rating conditions:**  
 Cooling: Indoor air temperature 27°C/20°C/17°C/14°C, Outdoor air temperature 35°C/25°C/21°C/18°C  
 Heating: Indoor air temperature 27°C/20°C/17°C/14°C, Outdoor air temperature 7°C/5°C/1°C/0°C

Model No.		Input Unit		SPW-UMR074EXH56		SPW-UMR094EXH56		SPW-UMR124EXH56		SPW-UMR164EXH56		SPW-UMR184EXH56		SPW-UMR224EXH56	
Performance		Capacity kW		Cooling / Heating kW											
<b>Standard Rating</b>															
Power, Inverter	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V
Intake air temp. (A) Intake air temp. (B)	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C
Mounting height Max. (m)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Performance</b>															
Power, Inverter	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V	1 phase 400V
Intake air temp. (A) Intake air temp. (B)	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C	20°C/20°C
Mounting height Max. (m)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
<b>Dimensions &amp; Weight</b>															
Outer unit height Width x depth	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190	400 x 200	190
Net weight (kg)	10		10		10		10		10		10		10		10

Specifications subject to change without notice

**Rating conditions:**  
 Cooling: Indoor air temperature 27°C/20°C/17°C/14°C, Outdoor air temperature 35°C/25°C/21°C/18°C  
 Heating: Indoor air temperature 27°C/20°C/17°C/14°C, Outdoor air temperature 7°C/5°C/1°C/0°C

## Variable Refrigerant Flow

#### **Concealed duct High Static Pressure**

SPW-DR254GXH56 • SPW-DR364GXH56 • SPW-DR484GXH56  
SPW-DR764GXH56 • SPW-DR964GXH56

Power Range from 7.3 kW to 28.0 kW



#### Option remote controller



SPW-DR254GXH56(B) SPW-DR764GXH56(B)  
SPW-DR364GXH56(B) SPW-DR964GXH56(B)  
SPW-DR184GXH56(B)



Bio Water 83

- High static pressure, low noise design
  - Rsp. valve kits required for zones T6 and M6
  - Ideal indoor unit blending with interior decoration

The author would like to thank

**Rating conditions**  
Rating method as recommended (77%) (86% vs 77% based on recommendations) (77%) (86% vs 77% based on recommendations)

## **Indoor units**

### **Ceiling mounted**

**SPW-TDR124GXH56 • SPW-TDR164GXH56 • SPW-TDR184GXH56  
SPW-TDR254GXH56 • SPW-TDR364GXH56 • SPW-TDR484GXH56**

Power Range from 3.6 kW to 14.0 kW



#### **Option remote controller**



SPW-TDR\_GXH581

- Newly developed DC fan motor with variable speed
  - Weight reduction for all models
  - New design with lower operating sound.
  - Realization of the most suitable air flow for heating and for cooling.
  - Further comfort improvement
  - Most suitable for long and narrow spaces
  - Low operating sound in top class of the industry.
  - Easy installation even in existing buildings

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**Rating conditions:** Cooling mode air temperature 17°C (60°F) 100% relative humidity at temperatures 65-90°F (18-32°C); heating mode air temperature 70-75°F (21-24°C) 100% relative humidity.

# Variable Refrigerant Flow

## Wall Mounted

SPW-KR74GXH56 • SPW-KR94GXH56 • SPW-KR124GXH56  
 SPW-KR164GXH56 • SPW-KR184GXH56 • SPW-KR254GXH56

Power Range from 2.2 kW to 7.3 kW



Option remote controller



SPW-KR...GXH56(B)

- Closed air discharge ports, when operation is stopped the flap closes completely to prevent the entry of dust and to keep the unit clean.
- Lighter and small units make the installation easy.
- Silent design.
- Smart colour and round-shape design with horizontal stripes.
- Piping outlet in three directions.
- Anti-mould filters are standard equipment.
- Removable front panel.
- Optional external electronic expansion valve kit ADK-SLPRK150AQB prevents noise in total rooms and bed rooms.

Model No.		Indoor Unit	SPW-KR74GXH56	SPW-KR94GXH56	SPW-KR124GXH56	SPW-KR164GXH56	SPW-KR184GXH56	SPW-KR254GXH56
Capacity	Wattage	(Watt)						
<b>Electrical Rating</b>								
Phase / Frequency	1 phase / 50Hz							
Voltage rating (kV)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Rating voltage	220	220	220	220	220	220	220	220
Current rating	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
<b>Performance</b>								
Power source heat	0.0001~0.45	0.0001~0.45	0.0001~0.75	0.0001~0.75	0.0001~0.75	0.0001~0.75	0.0001~0.75	0.0001~0.75
Power source heat	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45
Max. air flow rate (m³/h)	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000
<b>Dimensions &amp; Weight</b>								
Outer case (W×D×H)	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200
Net weight (kg)	40	40	42	42	42	42	42	42

Specification subject to change without notice

**Rating conditions:**  
 Cooling: Indoor air temperature 27°C DB/25°C WB, Outdoor air temperature 35°C DB/25°C WB  
 Heating: Indoor air temperature 20°C DB/19°C WB, Outdoor air temperature 7°C DB/6°C WB

# Indoor units

## Floor and floor/ceiling

SPW-FTR74EXH56 • SPW-FTR94EXH56 • SPW-FTR124EXH56  
 SPW-FTR164EXH56 • SPW-FTR184EXH56 • SPW-FTR224EXH56

Power Range from 2.2 kW to 6.1 kW



Option remote controller



SPW-FTR...EXH56(B)

- Three-speed centrifugal fan
- Anti-mould and anti-bacteria washable filters
- Low operating sound
- Night set back capability
- Infrared remote control with 24h digital timer and full features control and horizontal flap swinging or set on a fixed position

Model No.		Indoor Unit	SPW-FTR74EXH56	SPW-FTR94EXH56	SPW-FTR124EXH56	SPW-FTR164EXH56	SPW-FTR184EXH56	SPW-FTR224EXH56
Capacity	Wattage	(Watt)						
<b>Electrical Rating</b>								
Phase / Frequency	1 phase / 50Hz							
Voltage rating (kV)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Rating voltage	220	220	220	220	220	220	220	220
Current rating	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
<b>Performance</b>								
Power source heat	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45
Power source heat	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45	0.0001~0.45
Max. air flow rate (m³/h)	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000	2000~10000
<b>Dimensions &amp; Weight</b>								
Outer case (W×D×H)	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200	300 × 260 × 200
Net weight (kg)	40	40	42	42	42	42	42	42

**Rating conditions:**  
 Cooling: Indoor air temperature 27°C DB/25°C WB, Outdoor air temperature 35°C DB/25°C WB  
 Heating: Indoor air temperature 20°C DB/19°C WB, Outdoor air temperature 7°C DB/6°C WB

Specification subject to change without notice

# Variable Refrigerant Flow

## Concealed Floor standing

SPW-FMR74GXH56 • SPW-FMR94GXH56 • SPW-FMR124GXH56  
 SPW-FMR164GXH56 • SPW-FMR184GXH56 • SPW-FMR254GXH56

Power Range from 2.2 kW to 7.1 kW



Option remote controller



SPW-FMR..GXH56(B)

- Realization of perimeter air conditioning with high interior quality
- Large window space can be taken
- Effective perimeter handling is possible with simple work execution
- Easy installation

SPW-FR74GXH56 • SPW-FR94GXH56 • SPW-FR124GXH56  
 SPW-FR164GXH56 • SPW-FR184GXH56 • SPW-FR254GXH56

Power Range from 2.2 kW to 7.1 kW



Option remote controller



SPW-FR..GXH56(B)

- Realization of perimeter air conditioning with high interior quality
- Large window space can be taken
- Easy installation
- Effective perimeter handling is possible with simple work execution
- The wired remote controller can be easily installed in the body

Model No.		Model No.		SPW-FMR74GXH56		SPW-FMR94GXH56		SPW-FMR124GXH56		SPW-FMR164GXH56		SPW-FMR184GXH56		SPW-FMR254GXH56	
Performance		Performance		Cooling / Heating											
Capacity	(kW)	Capacity	(kW)	Cooling	Heating										
Air-cooled	4.0	4.0	4.0	100	32	100	32	100	32	100	32	100	32	100	32
Water-cooled															
Power (kW)	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90
Voltage (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Power consumption (W)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Power factor	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Current (A)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Phase current (A)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Power source (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Pressure source (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Net weight (kg)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net weight (kg)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Specifications subject to change without notice

**Operating conditions**  
 Cooling indoor air temperature 27°C DB/19°C WB, outdoor air temperature 30°C DB/19°C WB  
 Heating indoor air temperature 20°C DB/16°C WB, outdoor air temperature 0°C DB/15°C WB

Model No.		Model No.		SPW-FR74GXH56		SPW-FR94GXH56		SPW-FR124GXH56		SPW-FR164GXH56		SPW-FR184GXH56		SPW-FR254GXH56	
Performance		Performance		Cooling / Heating											
Capacity	(kW)	Capacity	(kW)	Cooling	Heating										
Air-cooled	4.0	4.0	4.0	100	32	100	32	100	32	100	32	100	32	100	32
Water-cooled															
Power (kW)	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90	1.0/0.95/0.90
Voltage (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Power consumption (W)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
Power factor	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Current (A)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Phase current (A)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Power source (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Pressure source (V)	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240	220/230/240
Net weight (kg)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Net weight (kg)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Specifications subject to change without notice

**Operating conditions**  
 Cooling indoor air temperature 27°C DB/19°C WB, outdoor air temperature 30°C DB/19°C WB  
 Heating indoor air temperature 20°C DB/16°C WB, outdoor air temperature 0°C DB/15°C WB

## **Variable Refrigerant Flow products**

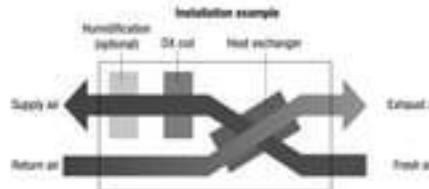
SPW-GU055XH • SPW-GU075XH • SPW-GU105XH

#### Total heat exchanger With DX coil

Power Range from 500 m<sup>3</sup>/h to 1000 m<sup>3</sup>/h

<b>System</b>	<b>Identifiable Assets</b>	<b>Liabilities</b>	<b>Equity</b>	<b>Total Assets</b>
Non-Assets	\$0.0	\$0.0	\$0.0	\$0.0
Non-Assets	\$0.0	\$0.0	\$0.0	\$0.0

**Heating conditions**  
Cooling rate at temperature (T°C) 200 to T°C 800 (heating at temperature T°C 200 to T°C 800)



#### **Option remote controller**

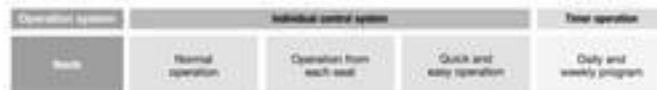


SPW-GU\_XH

A powerful fresh air incoming to match the right temperature and humidity indoor condition in medium-sized commercial space.

- Integration of heat recovery ventilation and DX coil technology for optimum air temperature control
  - The DX coil can be connected to all ECO&GRIP outdoor units
  - High efficiency on both temperature and humidity condition
  - Compact and quiet design
  - High static pressure available
  - Standard spigots ensure simple connection to ductwork
  - Easy-to-clean filter prevent mould or bacteria from occurring
  - Connectable to current ECO&GRIP control systems
  - Easy maintenance and service by putting installation of the electric box
  - Humidifier function available as option

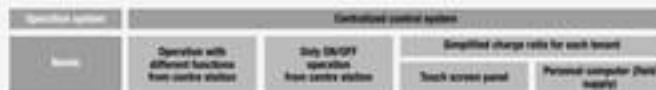
Sanyo control equipment meets the needs of variety of customers.



<b>External appearance</b>					<b>New</b>	
<b>For indoor units</b>	Timer word remote control	Wireless remote control	Simplified remote control	Schedule timer		
	<b>RCS-TW0002</b>	<b>RCS-TR0002</b> RCS-TR0003 RCS-TR0004 RCS-TR0005 RCS-TR0006	<b>RCS-RT0002</b>	<b>RKA-TW00402R</b>		
<b>No. of indoor units connected per controller</b>	1 group, 8 units	1 group, 8 units	1 group, 8 units	4 groups, max. 64 units		
<b>Expansion of use</b>	• Up to 2 units can be connected per group	• Up to 2 units can be connected per group	• Up to 2 units can be connected per group	• Power supply from the system controller • In case of no system controller possibility of connection to the T10 terminal of an indoor unit		
<b>Controllable indoor unit</b>	4 series indoor unit	4 series indoor unit	4 series indoor unit	2 series indoor unit & 4 series indoor unit		

<b>Function</b>	○	○	○	↔
Wind setting	○	○	○	↔
Fan speed setting	○	○	○	↔
Temperature setting	○	○	○	↔
Air flow direction	○	○	○	↔
Refrigerant monitoring	↔	↔	↔	↔
Humidity function	○	↔	↔	○

\*1: Available for 100V only. \*2: Special. \*3: Auto Adapter. \*4: Communication unit required.

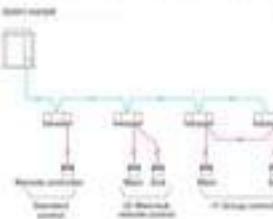


<b>External appearance</b>					<b>New</b>	
<b>For indoor units</b>	System controller	ON/OFF controller	Intelligent controller	Communication adapter		
	<b>SNA-KC10A02R</b>	<b>SNA-KC10A02R</b>	<b>SNA-KT20A02R</b>	<b>SNA-KT20A02R</b>		
<b>No. of indoor units connected per controller</b>	34 groups, max. 32 units	16 groups, max. 32 units	34 units x 4 systems, max. 256 units	12 systems, max. 128 units		
<b>Expansion of use</b>	• Up to 10 units can be connected per controller • Main controller and IT master unit + 1 sub unit connection is possible • Use without remote controller is impossible	• Up to 16 units of main units • Main controller and IT master unit + 1 sub unit connection is possible • Use without remote controller is impossible	• A communication Adapter (SNA-KA10RA02) must be installed for three or more systems			
<b>Controllable indoor unit</b>	2 series indoor unit & 4 series indoor unit	2 series indoor unit & 4 series indoor unit	2 series indoor unit & 4 series indoor unit	2 series indoor unit & 4 series indoor unit		

<b>Function</b>	○	○	○	○
Wind setting	○	↔	○	○
Fan speed setting	○	↔	○	○
Temperature setting	○	↔	○	○
Air flow direction	○ <sup>1</sup>	↔	○ <sup>1</sup>	○ <sup>1</sup>
Refrigerant monitoring	○	↔	○	○
Humidity function	↔	↔	○	○

\*1: Available for 100V only. \*2: Auto Adapter. \*3: Communication unit required.

## Remote controller (Wired remote controller/Wireless remote controller)



	Control contents	Part name, model No.	Quantity
<b>Standard control</b>	• Control of the various operations of the indoor unit by wired or wireless remote controller • Cooling or heating mode of the indoor unit is selected by first priority of the remote controller • Switching between remote controller sensor and body sensor is possible	• Wired remote controller RCS-KR000AG(B) RCS-KR000AL(B) RCS-KR000BL(B) RCS-KR000HL(B) RCS-KR000SL(B)	1 set/unit
<b>(1) Group control</b>	• Batch remote control of all indoor units • Operation of all indoor units in the same room • Up to 8 units can be connected • The sensor is the body sensor and thermostat setting is required in regard to the temperatures set in the remote controller is possible for each indoor unit	• Wired remote controller RCS-KR000AG(B)	1 set
<b>(2) Multizone remote control</b>	• Max. 2 remote controllers per indoor unit (these two remote controllers and sub-remote controller can be connected) • The button pressed last has priority • Thermostat setting is possible even with the sub-remote controller	• Main or Sub • Max. 2 remote controllers per indoor unit (these two remote controllers and sub-remote controller can be connected) RCS-KR000AG(B) RCS-KR000AL(B) RCS-KR000BL(B) RCS-KR000HL(B) RCS-KR000SL(B)	As RCS-KR000AG(B)

## Timer remote controller RCS-TM80BG

New



- Basic remote controller CR/CPF
- Operation mode (heating, cooling, heating, dry, auto, fan)
- Temperature setting (cooling/dry: 14–30 deg heating: 16–35 deg)
- Air volume adjustment (0% to 100%, auto)
- Air flow direction adjustment
- Time Function
  - 24-hour real time clock
  - Day of the week indicator
- Monthly Program Function
  - A maximum of 8 actions (not air programming per day)
- Setting Function
  - This function can prevent the room temperature from dropping or rising when the accountants are out for a long time
- Sleep Function
  - This function controls the room temperature for comfortable sleeping.
- Max. 8 indoor units can be controlled from one remote controller
- Remote control by main remote controller and sub-controller is possible
- Max. 3 remote controllers (main remote controller and sub-controller) can be installed for one indoor unit

## Wireless remote controller



- Ventilation independent operation is possible
  - When commercial ventilation fans or heat-exchange ventilation fans have been installed, this can be operated with this remote control (independent operation with the indoor unit is independent ventilation (CR/CPF))
  - Easy installation for the 3-way cassette type simply by replacing the cover part!
  - Timer setting is up to 24 hours (in steps: 30 minutes)
  - Remote control by main remote controller and sub-controller is possible
  - Max. 2 remote controllers (main remote controller and sub-controller) can be installed for one indoor unit
  - CR/CPF remote control by 3 indoor units and 8 indoor units are possible
  - When RCS-KR000AL(B) is used, wireless control becomes possible for all indoor units
  - When a remote receiver is set up in a different room, control from that room also becomes possible
  - Automatic operation by means of the emergency operation button is possible even when the remote controller has been lost or the batteries have been exhausted
  - In addition, there are other functions (air temperature setting, operation switching, wind direction/room setting, and so on)



## Simplified remote controller RCS-KR1AG(B)

### • 8 remote controller with simple functions and basic operation

- Suitable for open rooms or hotels where detailed functions are not required
- On/Off, operation mode switching, temperature setting, wind speed switching, wind direction setting, alarm displaying and remote controller self-diagnosis can be performed
- Multi-group control for up to 8 indoor units
- Remote control by main remote controller and sub-controller is possible with a simplified remote controller or a wired remote controller (up to two units)



## Schedule timer SHA-TM64AG(B)

- Air operation mode and temperature setting are not possible with the scheduled timer. It must be used together with a remote controller or intelligent controller. If being not provided with it, it does not have an address setting function. The control function of a system controller and/or a main unit can be used for address setting function.

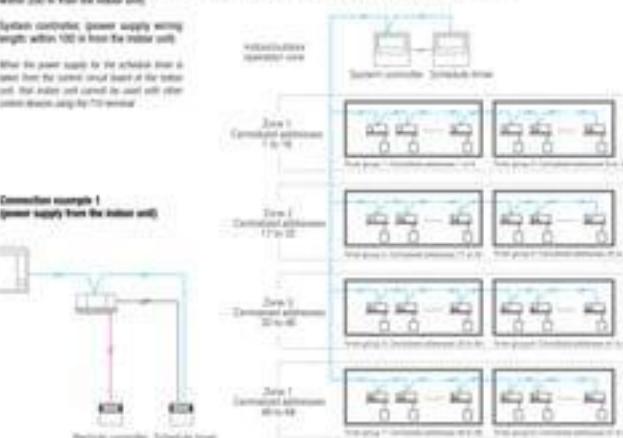
- Up to 80 groups (max. 64 indoor units) can be controlled divided into 8 timer groups

- Six program operations (operation/stop/local permission/local prohibition) per day can be set in a program for one week
  - One operation or stop, remote controller local permission or remote controller local prohibition and their respective combinations are possible (operation + local permission, stop + local prohibition, only local permission, etc.)
  - Local prohibition and the combination of the three items of temperature setting, room change and speed switching can be set at the time of installation

- A function for pausing the timer in case of national holidays has been added and timer operation also can be stopped for a long time

- By setting holidays or vacation day before one week, the timer can be paused only during that week
- Air timer settings can be stopped with the timer “OFF/ON” button (return to timer operation is made by pressing the button again)

### • Connection example 1 (power supply from the control controller)



## System controller SHA-KC64AG(B)



**Dimensions in mm:**  
104 (H) x 139 (W) x 21 (D) (excluding connectors)  
**Power supply:**  
AC 220~240 V  
- Remote input voltage range:  
20~250 V AC (200~250 V AC)  
- Power consumption:  
Max. 10 W (including power switch) or 25 W (without power switch) (at 220~240 V AC)

- A control mode corresponding to the zone conditions can be selected from 10 patterns.
- Operative mode:** Control covered mode or remote control mode can be selected.
- Control covered mode: The remote controller is connected to centralized control devices. Setting from a remote controller can be prohibited by prohibiting local operation from the system controller.
- Remote control mode: The remote controller is used as a remote controller. Setting from the system controller can be prohibited by prohibiting local operation from another control covered unit.)

### ⑥ Controlled unit number setting off mode or zone 1, 2, 3, 4 mode can be selected

- All motor off zone, or group zone can be selected.
- Zone 1, 2, 3, 4 mode setting is possible only for the remote units of zone 1, 2, 3, or 4.

- Individual control:** It is possible for max. 64 groups, 64 indoor units. Control of 64 indoor units (total 160 V zones), which zone can have up to 16 groups and each group can have up to 8 units.
- Control is possible for ON/OFF, operation mode, fan speed, air flow direction, zone return when used without a remote controller, operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition and so on.

- Individual:** 64 operations are possible also from the remote controller. However, the contents will be changed to 16 with operation limit the contents of the controller.

- Control 1:** One remote controller period is used for ON/OFF (all other operations are possible from the remote controller).

- Control 2:** The remote controller cannot be used for ON/OFF, mode change and temperature setting (all other operations are possible from the remote controller).

- Control 3:** The remote controller cannot be used for mode change or temperature setting change (all other operations are possible from the remote controller).

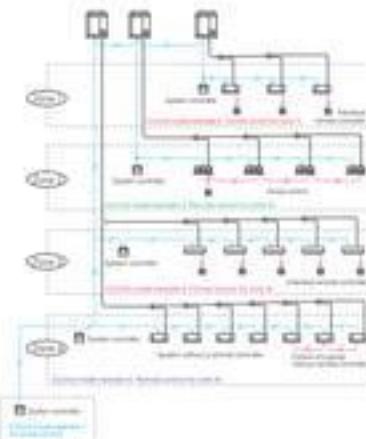
- Control 4:** The remote controller cannot be used for operation mode change (all other operations are possible from the remote controller).

### ⑦ Joint use with a remote controller or intelligent controller, a schedule timer and so on is possible

- (The maximum number of connectable system controllers is 10, including other control controllers on the same circuit.)
- In case of joint use with a wireless remote controller, there are limitations for the control items. Please use only with "Individual" and "Control 1".

- Joint of systems without a remote controller and of multi-unit systems:** In total of up to four units, it is possible.

### ⑧ Connection example



	Controlled mode	Remote control mode
All modes	64-control system	64-control system
Zone 1 modes	64-control system	64-control system
Zone 2 modes	64-control system	64-control system
Zone 3 modes	64-control system	64-control system
Zone 4 modes	64-control system	64-control system
Zone 1-4 modes	64-control system	64-control system



**Dimensions in mm:**  
194 (H) x 202 (W) x 25 (D)

**Power supply:**  
AC 220~240 V (50~60 Hz)  
- Remote input voltage range:  
20~250 V AC (200~250 V AC)  
- Power consumption:  
Max. 10 W (including power switch) or 25 W (without power switch) (at 220~240 V AC)

**Wire length:**  
1m for each system  
(Only for connecting to the panel)

## Intelligent controller SHA-KT256AG(B)

- Max. 256 indoor units (4 systems x 64 units) can be controlled. In case of three or more systems, a communication adaptor (SHA-KA128AG) must be installed on the outside.

- Operation is possible on branch, in zone units, in branch units and in group units.

- ON/OFF, operation mode setting, temperature setting, for speed, air flow direction, zone return when used without a remote controller, operation monitoring, alarm monitoring, ventilation, remote controller local operation prohibition and so on.

- A system without a remote controller is possible. Joint use with a remote controller or a system controller and so on also is possible.

- Use of a schedule timer and holiday setting also can be done.

- Proportional distribution of the air-conditioning energy is possible.

In case of joint use with a wireless remote control panel, there are restrictions for the control items. Please use only with "Proportion" and "Proportion 1".

### ⑨ Limitation contents for prohibited operation

Prohibition means limitation of the operation contents from the remote controller.

It is also possible to change the prohibition items.

### ⑩ Operation contents

- Individual:** There is no limitation for the operation of the remote controller. However, the contents will be changed to operated but in the contents of the controller (Last previous priority).
- Prohibition 1:** The remote controller cannot be used for ON/OFF (all other operations are possible from the remote controller).
- Prohibition 2:** The remote controller cannot be used for ON/OFF, operation mode change and temperature setting (all other operations are possible from the remote controller).
- Prohibition 3:** The remote controller cannot be used for mode change or temperature setting change (all other operations are possible from the remote controller).
- Prohibition 4:** The remote controller cannot be used for operation mode change (all other operations are possible from the remote controller).



## Communication adaptor RCS-KA128AG(B)



**Dimensions in mm:**  
200 (H) x 157 (W) x 45 (D)

**Power supply:**  
AC 120~240 V (50~60 Hz)

- Required to connect three or more linked wiring systems (interlocked operation mode) to the intelligent controller.

- Also required for connection of the BMS software.

- Two linked wiring systems can be connected to one SHA-KA128AG but Max. 4 systems can be connected for the entire intelligent controller.

In this or not set system design, it should be installed before or in the control panel.

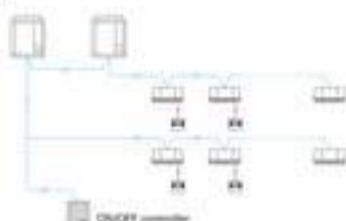
## ON/OFF controller SHA-KC16KAG(B)



Dimensions in mm  
117 x 120 x 412 = 12.000 mm<sup>3</sup> (approximate dimension)

- 16 groups of indoor units can be controlled.
- Collective control and individual group (soft) control can also be performed.
- Up to 8 UNIPT controllers (4 zones, 4 load) can be installed in one link system.
- The operating status can be determined immediately.
- An operation mode and temperature settings are not possible with the UNIPT controller. A zone can be set together with a remote controller or system controller.

### System example



## Remote sensor ART-K45AG(B)



- This is a remote sensor which can be used with 4 series indoor unit. Please use it to detect the room temperature when no remote controller sensor or body sensor is used (correspondence to a system without a remote controller is provided).
- For joint use with a remote control switch, use the remote control switch as main remote controller.

## Signal output board ACC-SG-AG(B)



- Extract, heating, cooling and thermostatic (H) signal can be put out in the same.
- Signal type (2 types): Voltage specification, non-voltage specification.



## Seri-Para I/O Unit for 16 groups indoor unit ACC-SP16TAG(B)

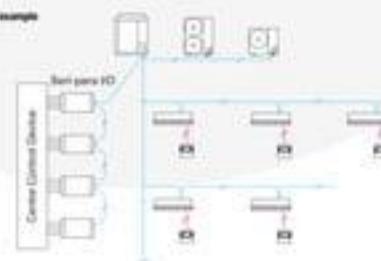
**Input**

1. ON/OFF Pulse DC 24 V
2. Local priority Command DC 24 V
3. Local setting Analog 0-10 V
4. AC/DC/SP1 Pulse DC 24 V
5. AC local priority 5. Emergency stop Continuous DC 24 V

**Output**

1. Occupancy/absence indicator sign
2. Room temp. Analog 0-4.096 mV
3. AC/DC/SP1

### System example



## Lon Works Interface SHA-LN16UG(B)

- This interface is a communication converter for connecting LonWorks to the Series air conditioner and (PAC - GMP) control network.
- From the bus connected to LonWorks, basic settings and status monitoring is possible for up to 16 groups of VRF units.

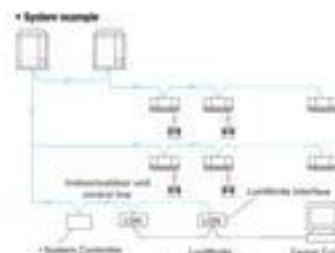
Functions	Setting for each group of indoor units
Setting from the LonWorks communicator	Setpoint, Temp. Setting, Operation mode, Setpoint + setpoint, Setpoint - setpoint, Setpoint + alarm, Setpoint - alarm, Status code with active alarm, Room temp., AC/VR ratio, Temperature interval setting, Minimum time seconds, No. Temperature

Setting for all units

AC/VR and status notification mode to the LonWorks communicator

Configuration properties

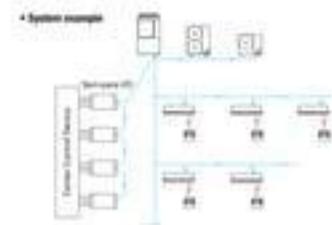
Setting for the following, when controller needed. See general setting, or direction setting, the user need.





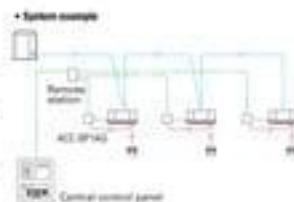
Seri-Para I/O unit for outdoor unit  
ACC-XSP4U1G(B)

- Power supply
- Input
- Output
- Analog input
- Digital input: 100V AC voltage, 10-20mA current signal
- Digital output: 100V AC voltage, 10mA current signal
- Analog output: 100V AC voltage, 10mA current signal
- Analog output: 0-10V DC voltage
- Analog output: 0-10mA current
- Analog output: 0-10V DC voltage
- Analog output: 0-10mA current



Seri-Para I/O unit for each indoor unit  
ACC-SP1AG(B)

- Control and status monitoring is possible for individual indoor units (7 groups)
- In addition to operation and stop, there is a digital input function for air speed, air direction, operation mode and demand
- Temperature setting and measurement of the indoor suction temperature can be performed from control monitoring
- The analog input for temperature setting is 0 to 10 V
- Power is supplied from the FTR terminal of the indoor unit. Separate power supply also is possible (in case of auxiliary temperature measurement.)

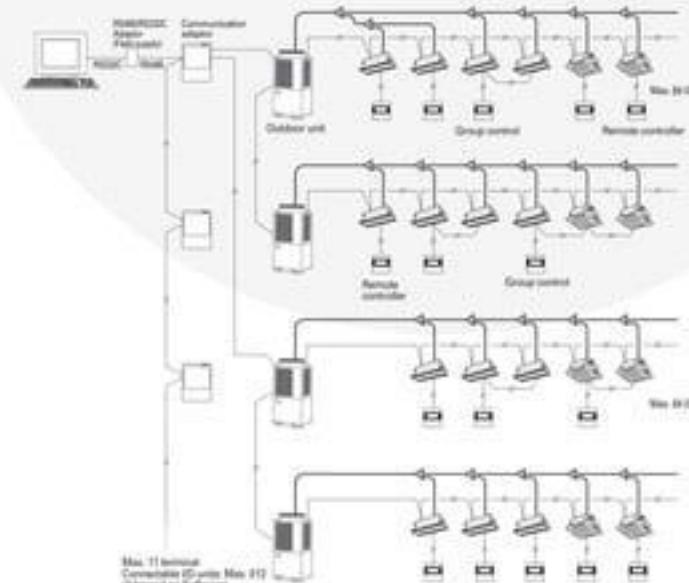


Interface adaptor SHA-KL4UG(B)



## AMY software

This software (AMY) is an air conditioner control system for buildings. By using the adaptor Kit, Amy adaptor and the link cable up to 16 systems can be connected for a maximum of 160 indoor units.



Software environment:  
Windows 2000,  
Windows NT 4.0 Service Pack 6  
or later

Browser:  
Microsoft Internet Explorer 4.0  
or later



\* When this first software is connected with communication adaptor, the setting of adaptor address and communication speed need to be changed.

### Functions

- Air and settings
- Load operation
- Whole change
- Room temperature setting
- Fan speed setting
- Plug setting
- Central control setting
- Filter logic Check
- Alarm reset

- Air and status
- Load step OFF status
- Operation status
- Room temperature
- Fan speed status
- Plug status
- Central control setting
- Filter logic status
- Central alarm/remote alarm
- Alarm code
- Charge calculation use



## SANYO

### SANYO Hydronic products a year-round comfort air-conditioning in any residential and commercial building

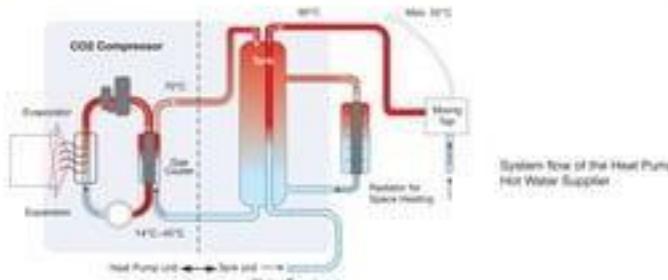
In the small and medium capacity range Sanyo offers a very large range of hydronic products to satisfy any Customer's demand and expectations. With CO<sub>2</sub> ECQs Sanyo reviewed the possibility of CO<sub>2</sub> natural refrigerant and verified its good performance in cold climates and its advantage in application to water heaters for the refrigeration cycle. Air-to-water chillers and heat pumps with built-in hydronic system make installation quick and easy and reduce installation space.

The elegant and compact design of the water terminal and fan-coil units ensure high performances and low noise level certified by Euronorm.

#### INDEX OF PRODUCTS:

- CO<sub>2</sub> heat pump hot water supplier pag. 122
- Water chillers 8-17 kW pag. 126
- Water chillers 20-40 kW pag. 127
- Water chillers 40-80 kW pag. 128
- Water chillers 80-160 kW pag. 129
- Water terminal units pag. 130
- Fan-coil units pag. 131

Sanyo CO<sub>2</sub> ECO is a system that effectively utilizes heat in the atmosphere.



Performance	Heat pump unit	Tank unit	SHP-TH22DDN	SHP-C45DHN
1) Heating capacity (input)	200		43.7/35	
2) Heating capacity (input)	900		3.7	
3) Heating capacity (input)	400		43.7/45	
4) Heating capacity (input)	900		3.7	
5) Heating capacity (input)	400		43.7/46	
6) Heating capacity (input)	900		1.8	
7) Heating capacity (input)	400		43.7/47	
Electrical Rating				
Power supply	Heat pump unit	2	220/240	220/240
	Tank unit	2		
Maximum current		2	43.7/3.4	23
Tank unit				
Tank capacity			200	
Maximum working pressure	kg/cm <sup>2</sup>		23	
Auxiliary electric heater capacity	200	2.0		
Dimensions	Net height	mm	1547 x 597 x 918	
	Depth	mm	1736 x 796 x 722	
	Shipment weight	kg	175.0 / 188.0	
Weight	Net/Shipping	kg		
Heat pump unit				
Temperature sensors	2		10.0 / 30	
Pressure sensor	1		40.0	
Compressor			EC rotary two stage compressor	
Dimensions	Net height	mm	600 x 590 x 200	
	Depth	mm	200 x 900 x 120	
	Shipment weight	kg	85.0 / 110.0	
Weight	Net/Shipping	kg		

Operating conditions:  
1) 10 °C, outdoor temp. -10 °C, tank temp. 60 °C,  
2) outdoor temp. 0 °C, tank temp. 60 °C  
Dimensions subject to slight weight increase



SHP-C45DIN SHP-TH22DDN/DHN

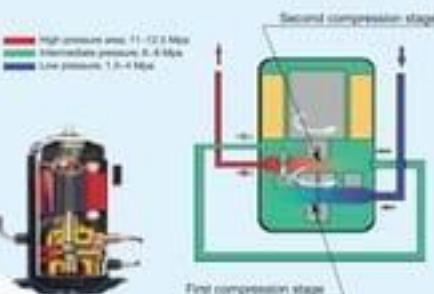
- Abundantly supply space heating and tap water
- DC rotary 2 stage compressor
- High reliability, high efficiency
- Freeze protection circuit
- The unique construction of water-to-refrigerant heat exchanger ensure improved efficiency

## Environmentally friendly

A natural refrigerant (CO<sub>2</sub>) heat pump hot water supplier that considers the global environment.

For its refrigerant, Sanyo "CO<sub>2</sub> ECO" uses heat energy derived from compressed CO<sub>2</sub>. Friendly to the ecosystem and our living environment, CO<sub>2</sub> is an atoxic natural refrigerant with Ozone-Destruction Potential "0" and Global Warming Potential "1".

Characteristics of Natural Refrigerant CO <sub>2</sub>			
Natural refrigerant	CO <sub>2</sub>	GWP	ODP
AFC	16104	0	1.00
HCFC	141	0	0.00
HFC	141	0	0.00

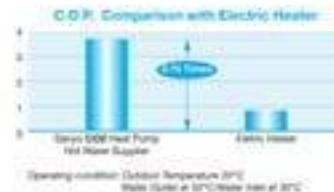


The world First CO<sub>2</sub> ECO  
2-stage Compression System

## Economical

The high-efficiency heat pump method enable its superior energy-conservation capability.

The coefficient of performance (COP) is 3.73 for Sanyo "CO<sub>2</sub> ECO" compared to 1 for electric heaters (standard condition).



## Low ambient operation

With Sanyo "CO<sub>2</sub> ECO", the heat pump operates continuously in the harsh condition of -20°C, maintaining its performance at no less than 4.0 kW. The consistent operation of the heat pump extremely low temperatures is made possible by the refrigerant circuit technology developed and refined by Sanyo.

The heat pump operation of many models using "HCFC or HFC" as the refrigerant can only withstand the ambient temperature up to approximately -10°C. Electric heaters are required for temperatures below this level, resulting in performance that is not high in efficiency.



Sanyo "CO<sub>2</sub> ECO" adopts the rotary 2-stage compressor, a creation of Sanyo original technology.

The outstanding performance of Sanyo's "2-stage compressor" supports the basic operation capability of "CO<sub>2</sub> ECO".

Resistant to high working pressure  
internal intermediate pressure system  
• easier to design shell (lower O.P.)

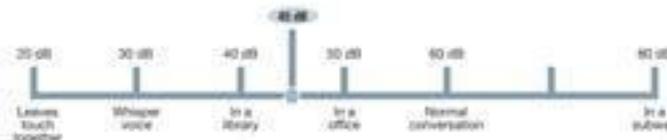
Resistant to large pressure difference  
2-stage compression system  
• high-reliability through load dispersion

- high efficiency (lower leakage loss)
- low vibration and low noise

High-efficiency and lightweight design  
2-stage compression system  
DC brushless motor and inverter drive  
• high efficiency intensive winding motor with high-power neodymium magnet

## Silent operation

With Sanyo "CO<sub>2</sub> ECO" the noise level during operation is 45 dB-A.

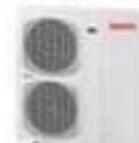


SCP-AR081E5/EH5 • SCP-AR081E8/EH8  
SCP-AR111E5 • SCP-AR111E8/EH8  
SCP-AR151E8/EH8 • SCP-AR171E8/EH8

Power Range from 6.0 kW to 16.8 kW



SCP-AR...E/EM



SCP-AR...E/EH

- High C.O.P.
- Friendly to the eco-system refrigerant R410A
- Pump and expansion vessel integrated
- Does not require the installation of a buffer tank (†)

Outer Unit Dimensions		SCP-AR081E5	SCP-AR081E8	SCP-AR111E5	SCP-AR111E8	SCP-AR151E8	SCP-AR171E8
Capacity	kg/h	8.7	8.7	12.5	12.5	16.2	16.2
Refrigerant pump	kg	0.8	1.0	1.0	1.0	1.2	1.2
COP at 25°C	kg/m³	3.1	3.0	3.2	3.2	3.4	3.4
Water flow	m³/h	0.08	0.12	0.14	0.14	0.18	0.20
Water pump head	m	0.5	0.5	0.5	0.5	0.5	0.5
Water power supply	W/kW	10	10	10	10	10	10
Polymer connection diameter	mm	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Pump header size	mm	DN15	DN15	DN20	DN20	DN25	DN25
Refrigerant header size	mm	DN12	DN12	DN16	DN16	DN20	DN20
Refrigerant header outlet height (†)	mm	100	100	100	100	100	100
<b>Dimensions &amp; Weight</b>		1000 x 400 x 300					
Width (mm)	mm	400	400	400	400	400	400
Height (mm)	mm	300	300	300	300	300	300

Outer Unit Dimensions		SCP-AR081E5	SCP-AR081E8	SCP-AR111E5	SCP-AR111E8	SCP-AR151E8	SCP-AR171E8
Capacity	kg/h	8.7	8.7	12.5	12.5	16.2	16.2
Refrigerant pump	kg	0.8	1.0	1.0	1.0	1.2	1.2
COP at 25°C	kg/m³	3.1	3.0	3.2	3.2	3.4	3.4
Water flow	m³/h	0.08	0.12	0.14	0.14	0.18	0.20
Water pump head	m	0.5	0.5	0.5	0.5	0.5	0.5
Water power supply	W/kW	10	10	10	10	10	10
Polymer connection diameter	mm	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Pump header size	mm	DN15	DN15	DN20	DN20	DN25	DN25
Refrigerant header size	mm	DN12	DN12	DN16	DN16	DN20	DN20
Refrigerant header outlet height (†)	mm	100	100	100	100	100	100
<b>Dimensions &amp; Weight</b>		1000 x 400 x 300					
Width (mm)	mm	400	400	400	400	400	400
Height (mm)	mm	300	300	300	300	300	300

(†) If system consists of the system as below, increase by multiplication of 2 (double tank or reservoir).

Specification subject to change without notice.

SCP-AR241EH8 • SCP-AR271EH8 • SCP-AR351EH8  
SCP-AR401EH8 • SCP-AR201E8 • SCP-AR251E8  
SCP-AR301E8 • SCP-AR401E8

Power Range from 20.8 kW to 39.0 kW



Outer Unit Dimensions		SCP-AR241EH8	SCP-AR271EH8	SCP-AR351EH8	SCP-AR401EH8
Capacity	kg/h	20.8	24.8	35.1	39.1
Refrigerant pump	kg	1.0	1.0	1.2	1.2
COP at 25°C	kg/m³	3.1	3.0	3.2	3.2
Water flow	m³/h	0.18	0.22	0.32	0.36
Water pump head	m	0.5	0.5	0.5	0.5
Water power supply	W/kW	10	10	10	10
Polymer connection diameter	mm	1/2"	1/2"	1/2"	1/2"
Pump header size	mm	DN15	DN15	DN20	DN20
Refrigerant header size	mm	DN12	DN12	DN16	DN16
Refrigerant header outlet height (†)	mm	100	100	100	100
<b>Dimensions &amp; Weight</b>		1000 x 600 x 300			
Width (mm)	mm	600	600	600	600
Height (mm)	mm	300	300	300	300

Outer Unit Dimensions		SCP-AR241EH8	SCP-AR271EH8	SCP-AR351EH8	SCP-AR401EH8
Capacity	kg/h	20.8	24.8	35.1	39.1
Refrigerant pump	kg	1.0	1.0	1.2	1.2
COP at 25°C	kg/m³	3.1	3.0	3.2	3.2
Water flow	m³/h	0.18	0.22	0.32	0.36
Water pump head	m	0.5	0.5	0.5	0.5
Water power supply	W/kW	10	10	10	10
Polymer connection diameter	mm	1/2"	1/2"	1/2"	1/2"
Pump header size	mm	DN15	DN15	DN20	DN20
Refrigerant header size	mm	DN12	DN12	DN16	DN16
Refrigerant header outlet height (†)	mm	100	100	100	100
<b>Dimensions &amp; Weight</b>		1000 x 600 x 300			
Width (mm)	mm	600	600	600	600
Height (mm)	mm	300	300	300	300

(†) If system consists of the system as below, increase by multiplication of 2 (double tank or reservoir).

Specification subject to change without notice.

General conditions		Operating temp. Δt between air temperature + water temperature			
1. Operation at atmosphere	25°C	25°C	25°C	25°C	25°C
2. Cold water temperature	10°C	10°C	10°C	10°C	10°C
3. Cold water temperature	7°C	7°C	7°C	7°C	7°C

B407C

B407C

General conditions		Operating temp. Δt between air temperature + water temperature			
1. Operation at atmosphere	25°C	25°C	25°C	25°C	25°C
2. Cold water temperature	10°C	10°C	10°C	10°C	10°C
3. Cold water temperature	7°C	7°C	7°C	7°C	7°C

B407C

B407C

SCP-AR501EB/EHB • SCP-AR601EB/EHB • SCP-AR701EB/EHB  
SCP-AR801EB/EHB

SCP-AR951EB/EHB • SCP-AR1001EB/EHB • SCP-AR1401EB/HB  
SCP-AR1601EB/HB • SCP-AR1001EB • SCP-AR1251EB • SCP-AR1401EB

Power Range from 40.6 kW to 78.0 kW.



- High C.O.P.
- Friendly to the eco-system refrigerant R407C
- Built-in hydraulic module with pump, expansion tank, buffer tank.

Power Range from 80.8 kW to 140 kW.



- Ozone friendly R407C refrigerant
- High efficiency
- Built-in hydraulic module with pump, expansion tank and buffer tank.

Outer Unit Performance		SCP-AR501EB		SCP-AR601EB		SCP-AR701EB		SCP-AR801EB	
Capacity	Watt	Flow	Watt	Flow	Watt	Flow	Watt	Flow	
Refrigerant power	40.6	40.6	50.0	50.0	60.0	60.0	70.0	70.0	
ECO, G.C.P.	40.6	40.6	50.0	50.0	60.0	60.0	70.0	70.0	
Water flow	1.05	1.05	1.25	1.25	1.35	1.35	1.45	1.45	
Refrigerant pump head	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	
Water pump head	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	
Hydraulic connection diameter	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Pump sound level	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Pump sound level (A)	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Refrigerant sound level (A)	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Dimensions & Weight	1000 x 1000 x 1000								
Width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1000	1000	1000	1000	1000	1000	1000	1000	

Outer Unit Performance		SCP-AR951EB		SCP-AR1001EB		SCP-AR1401EB		SCP-AR1601EB	
Capacity	Watt	Flow	Watt	Flow	Watt	Flow	Watt	Flow	
Refrigerant power	80.8	80.8	90.0	90.0	100.0	100.0	120.0	120.0	
ECO, G.C.P.	80.8	80.8	90.0	90.0	100.0	100.0	120.0	120.0	
Water flow	1.25	1.25	1.35	1.35	1.45	1.45	1.65	1.65	
Refrigerant pump head	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	
Water pump head	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	
Hydraulic connection diameter	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Pump sound level	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Pump sound level (A)	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Refrigerant sound level (A)	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Dimensions & Weight	1000 x 1000 x 1000		1000 x 1000 x 1000		1000 x 1000 x 1000		1000 x 1000 x 1000		
Width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1000	1000	1000	1000	1000	1000	1000	1000	

Outer Unit Performance		SCP-AR501EB		SCP-AR601EB		SCP-AR701EB		SCP-AR801EB	
Capacity	Watt	Flow	Watt	Flow	Watt	Flow	Watt	Flow	
Refrigerant power	40.6	40.6	50.0	50.0	60.0	60.0	70.0	70.0	
ECO, G.C.P.	40.6	40.6	50.0	50.0	60.0	60.0	70.0	70.0	
Water flow	1.05	1.05	1.25	1.25	1.35	1.35	1.45	1.45	
Refrigerant pump head	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	
Water pump head	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.08	
Hydraulic connection diameter	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Pump sound level	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Pump sound level (A)	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Refrigerant sound level (A)	65.5	65.5	66.5	66.5	67.5	67.5	68.5	68.5	
Dimensions & Weight	1000 x 1000 x 1000								
Width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1000	1000	1000	1000	1000	1000	1000	1000	

Outer Unit Performance		SCP-AR951EB		SCP-AR1001EB		SCP-AR1401EB		SCP-AR1601EB	
Capacity	Watt	Flow	Watt	Flow	Watt	Flow	Watt	Flow	
Refrigerant power	80.8	80.8	90.0	90.0	100.0	100.0	120.0	120.0	
ECO, G.C.P.	80.8	80.8	90.0	90.0	100.0	100.0	120.0	120.0	
Water flow	1.25	1.25	1.35	1.35	1.45	1.45	1.65	1.65	
Refrigerant pump head	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	
Water pump head	0.06	0.06	0.07	0.07	0.08	0.08	0.09	0.09	
Hydraulic connection diameter	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"	
Pump sound level	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Pump sound level (A)	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Refrigerant sound level (A)	66.5	66.5	67.5	67.5	68.5	68.5	70.5	70.5	
Dimensions & Weight	1000 x 1000 x 1000		1000 x 1000 x 1000		1000 x 1000 x 1000		1000 x 1000 x 1000		
Width (mm)	1000	1000	1000	1000	1000	1000	1000	1000	
Height (mm)	1000	1000	1000	1000	1000	1000	1000	1000	

Specifications subject to change without notice

Specifications subject to change without notice

Electrical conditions		Operating conditions		Dimensions		Installation height		Sound pressure level	
A) Station air temperature	B) Cool water temperature	C) Station air temperature	D) Cool water temperature	E) Width	F) Height	G) Installation height	H) Width	I) Sound pressure level	J) Measuring distance
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m

Electrical conditions		Operating conditions		Dimensions		Installation height		Sound pressure level	
A) Station air temperature	B) Cool water temperature	C) Station air temperature	D) Cool water temperature	E) Width	F) Height	G) Installation height	H) Width	I) Sound pressure level	J) Measuring distance
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m
10°C	10°C	4.0°C to 35°C	5°C to 30°C	1000	1000	1000	1000	40 dB(A)	10 m

FW-X031EH5 • FW-X051EH5 • FW-X061EH5 • FW-X081EH5 • FW-X101EH5  
 FW-FT021EH5 • FW-FT031EH5 • FW-FT041EH5 • FW-K011EH5 • FW-K021EH5  
 FW-K031EH5 • FW-K041EH5

Power Range from 1.24 kW to 9.92 kW



60x60 X type



X type



K type



FT type

**New**

- Wide model range for 2-pipe and 4-pipe design system (4 type sizes 60x60 and 65x65)
- Suitable for any commercial buildings and even for hotels and residential applications
- K and FT also available with infrared remote controller

- Start operation ensures maximum comfort
- 3-way valve kit features precise temperature control in the room
- Chemical air filter standard included



VM type



HM type



VH type

- Very wide and complete line-up: centrifugal or cross flow fan, 2-pipe or 4-pipe design
- Decorative cabinet can easily match with any kind of rooms
- Easy to install and very simple maintenance

- Changeable air filter included
- Electronic controllers available for unit mounting and remote installation ensure precise control of the room temperature
- Large choice of accessories, either separately supplied or factory mounted

Performance						
	FW-031EH5	FW-051EH5	FW-061EH5	FW-081EH5	FW-101EH5	
Max power output	0.99kW					
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"					
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	
Performance						
	FW-031EH5 (FW-031EH5)		FW-051EH5 (FW-051EH5)		FW-061EH5 (FW-061EH5)	
Max power output	0.99kW		1.00/0.95	1.05/1.00	1.05/1.00	
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"		1/2"	1/2"	1/2"	
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	
Performance						
	FW-031EH5 (FW-031EH5)		FW-051EH5 (FW-051EH5)		FW-061EH5 (FW-061EH5)	
Max power output	0.99kW		1.00/0.95	1.05/1.00	1.05/1.00	
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"		1/2"	1/2"	1/2"	
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	

Specifications subject to change without notice

NORMAL CONDITIONS	
Operating Air Temperature	27°C/26°C/25°C/24°C
Operating Water Temperature	57°C
Flowing Air Temperature	27°C
Flowing Water Temperature	57°C
Flowing Air Temperature	27°C

FW-031EH5 • FW-051EH5 • FW-061EH5 • FW-081EH5 • FW-101EH5  
 FW-FT021EH5 • FW-FT031EH5 • FW-FT041EH5 • FW-K011EH5 • FW-K021EH5  
 FW-K031EH5 • FW-K041EH5

FW-031EH5 (FW-031EH5) • FW-051EH5 (FW-051EH5) • FW-061EH5 (FW-061EH5)  
 FW-081EH5 (FW-081EH5) • FW-101EH5 (FW-101EH5) • FW-FT021EH5 (FW-FT021EH5)  
 FW-FT031EH5 (FW-FT031EH5) • FW-FT041EH5 (FW-FT041EH5) • FW-K011EH5 (FW-K011EH5)  
 FW-K021EH5 (FW-K021EH5) • FW-K031EH5 (FW-K031EH5) • FW-K041EH5 (FW-K041EH5)

S-VMT/HMT/VHT151-251-351  
 S-VMC/HMC/VHC151-251-351-401-501-601-701

Power Range from 1.4 kW to 6.6 kW



VM type



HM type



VH type

- Very wide and complete line-up: centrifugal or cross flow fan, 2-pipe or 4-pipe design
- Decorative cabinet can easily match with any kind of rooms
- Easy to install and very simple maintenance

- Changeable air filter included
- Electronic controllers available for unit mounting and remote installation ensure precise control of the room temperature
- Large choice of accessories, either separately supplied or factory mounted

Performance						
	201-E	201-E	201-E	201-E	201-E	
Max power output	0.99kW					
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"					
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	
Performance						
	201-E (201-E)		201-E (201-E)		201-E (201-E)	
Max power output	0.99kW		1.00/0.95	1.05/1.00	1.05/1.00	
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"					
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	

Performance						
	201-E	201-E	201-E	201-E	201-E	
Max power output	0.99kW					
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"					
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	
Performance						
	201-E (201-E)		201-E (201-E)		201-E (201-E)	
Max power output	0.99kW		1.00/0.95	1.05/1.00	1.05/1.00	
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10	
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00	
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050	
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020	
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010	
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005	
Max. connection	1/2"					
Dimensions & Weights						
Width	370	450	540	640	740	
Height	110	110	110	110	110	
Depth	110	110	110	110	110	

Performance					
	201-E	201-E	201-E	201-E	201-E
Max power output	0.99kW				
Max cooling capacity	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00
Max heating capacity	MaxHeat® 100	1.05/1.05	1.10/1.10	1.10/1.10	1.10/1.10
Max flow	MaxHeat® 100	1.00/0.95	1.05/1.00	1.05/1.00	1.05/1.00
Max. pressure	MaxHeat® 100	0.050	0.050	0.050	0.050
Min. pressure	MaxHeat® 100	0.020	0.020	0.020	0.020
Max. pressure loss L/L	MaxHeat® 100	0.010	0.010	0.010	0.010
Min. pressure loss L/L	MaxHeat® 100	0.005	0.005	0.005	0.005
Max. connection	1/2"				
Dimensions & Weights					
Width	370	450	540	640	740
Height	110	110	110	110	110
Depth	110	110	110	110	110

### Note

## Note