Contact your local SANYO distributor for brochures on all other ranges of air conditioning and heating solutions

GAS DRIVEN VRF

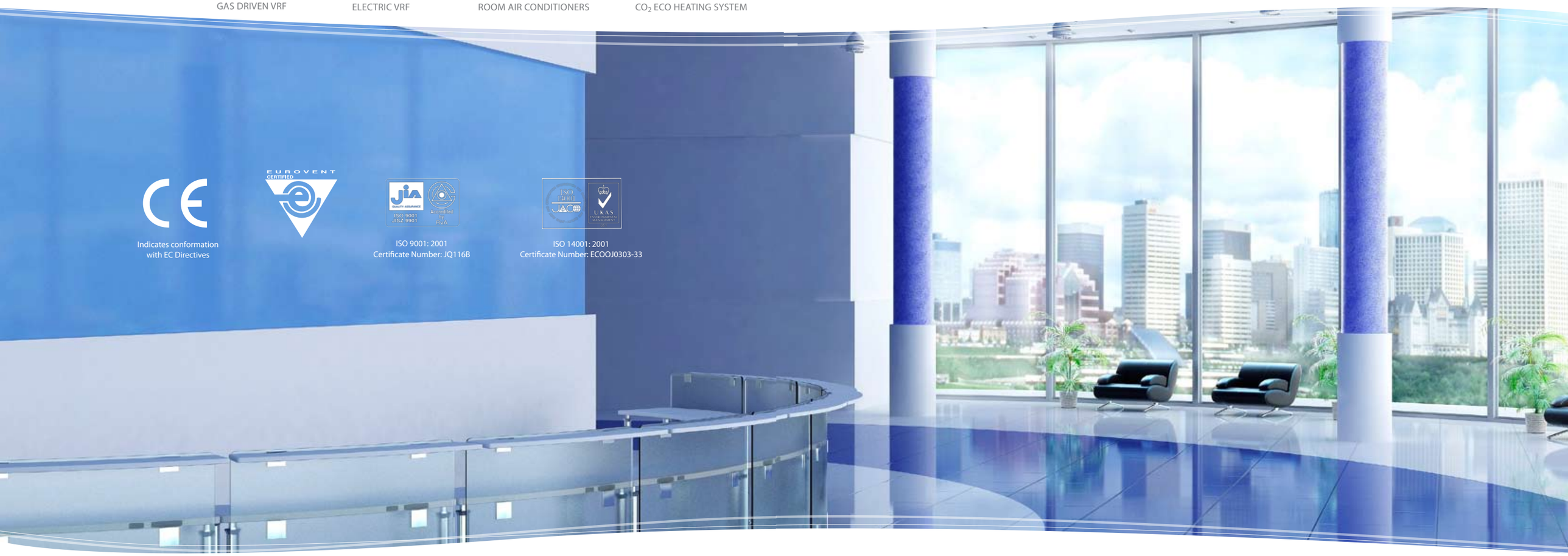
ELECTRIC VRF

ROOM AIR CONDITIONERS

CO_2 ECO HEATING SYSTEM

Think GAIA
For Life and the Earth

SANYO



Indicates conformation with EC Directives

ISO 9001: 2001
Certificate Number: JQ116B

ISO 14001: 2001
Certificate Number: ECOOJ0303-33

SANYO reserves the right to make any variation in specification to the equipment described or to withdraw or replace products without prior notification or public announcement. All descriptions, illustrations, drawings and specifications in this publication are given in good faith, but are intended to present only general particulars and shall not form any part of the contract. For full installation details, please contact your SANYO distributor.

Rating Conditions
The cooling and heating capacities are based on the following conditions:
Cooling: Indoor temperature 27˚C DB/19˚C WB, Outdoor temperature 35˚C DB/24˚ C WB.
Heating: Indoor temperature 20˚C DB, Outdoor Temperature 7˚C DB 6˚C WB.

Printed using paper produced from 50% recycled material and 50% from sustainable forestry.

www.sanyoaircon.com

SANYO Air Conditioners. The natural choice.

SANYO

ECOi_VRF_V1_2009

Electric VRF

ELECTRIC VRF
GAS DRIVEN VRF
COMMERCIAL SPLIT SYSTEMS
ROOM AIR CONDITIONERS
HEATING SOLUTIONS

SANYO Air Conditioners. The natural choice.

R410A INVERTER Air Conditioner

Since its formation in 1958, SANYO Air Conditioners has been at the forefront of innovation with its market-leading research and development program. From the world's first heat pump air conditioner in 1960 to the first 3 pipe VRF system in 1989, SANYO continues to deliver leading technology combined with the reliability and customer service that you would expect from a global brand like SANYO.

Benefits

Ease of installation

R410A has a higher operating pressure with a lower pressure loss than previous refrigerants. This enables smaller pipe sizes to be used and allows reduced refrigerant charges.

Simple to design

SANYO recognise that designing, selecting and preparing a professional VRF quotation can be a time consuming and costly process, especially as it is often also a speculative exercise. So we have designed proprietary software which is quick and easy to use and produces a full schematic layout of pipework and controls, as well as a full materials list and performance data.

Easy to position

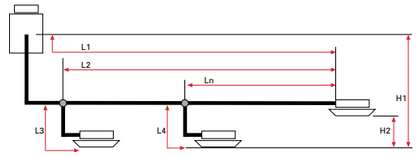
The compact design of the ECOi outdoor units means that they fit into a standard lift and are easy to handle and position when on site. The small footprint and modular appearance of the units ensure a cohesive appearance to an installation.

Off-coil temperature control

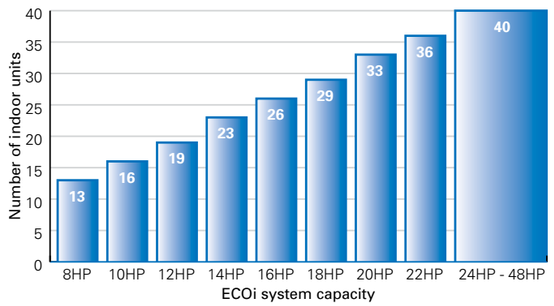
SANYO ducted units offer the unique advantage of being able to offer off-coil temperature coil as standard. This allows designers to select units using an off coil temperature between 7°C and 22°C. This allows room environments to be cooled without subjecting its occupants to cold drafts or uncomfortable conditions. This is achieved without any extra controls or wiring to each unit.

Wide selection and connectability

With 15 indoor model styles available, ECOi systems are the ideal choice for multiple small capacity indoor unit installations, with the ability to connect up to 40 indoor units to systems of 24HP or greater.



Flexible pipe length



Category	Item	Description		Max length (m)
Allowable pipework length	L1	Maximum pipe run in one direction	Actual length	150
			Equivalent length	175
	L2-L3	Difference between maximum length and minimum length from the first distribution joint		40
	L3 L4 Ln	Maximum length of each distribution joint		30
	L1+L3+L4	Maximum total pipe run length		300
Allowable height difference	H1	When outdoor unit installed higher		50
		When outdoor unit installed lower		40
	H2	Maximum difference between indoor units		15

UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

Easy to control

A wide variety of control options are available to ensure that the ECOi system provides the user with the degree of control that they desire, from simple room controllers through to state of the art BMS controls.

Simple to commission

Simple set-up procedure including automatic addressing of connected indoor units. Configuration settings can be made from an outdoor unit or via a remote controller.

Accurate capacity control

To ensure that the compressor capacity is matched to building load as accurately and efficiently as possible, SANYO has designed its range of 2 and 3 way ECOi systems to operate with DC inverter and high-efficiency fixed speed compressors. The system selects the most efficient compressor to operate by dynamically monitoring the building load and choosing the best compressor combination to run.

Easy to maintain

Each system allows the use of prognostic and diagnostic controls routines, from refrigerant charge control through to complex fault code diagnostics, all designed to reduce the speed of maintenance calls and unit down time.

Lower running and life cycle costs

SANYO ECOi VRF systems are amongst the most efficient VRF systems on the market, offering COPs in excess of 4.0 at full load conditions. The system is also designed to make sure that we reduce the running cost of each system by using our unique road map control routine to ensure that the most efficient combination of compressors are running at any one time. Improved defrost sequencing also reduces running cost by defrosting each outdoor coil in turn when conditions allow.

UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

Unique SANYO benefits

SANYO-Installation cost saving design

Solenoid Valve Box

Industry's Smallest – 147mm High

- Brazed connections
- Requires only 1 Fixing for mounting
- No transmission wiring at SVK
- No mains power wiring at SVK
- Comes inclusive with lead connection to indoor unit

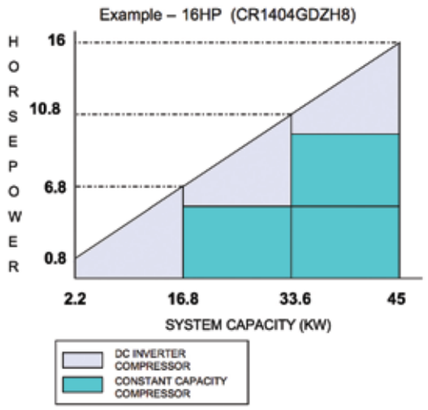
Saves the cost of local isolators and additional electrical wiring

SANYO-Intelligent on site learning

Compressor Road Map Control

- Measures the average saturated suction temperature from the fan coil units
- Measures the suction pressure and temperature entering the outdoor unit
- Calculates the best combination of compressors to run
- Targets inverter compressor at 30 – 80% (most efficient)

Reduces the running cost of the system

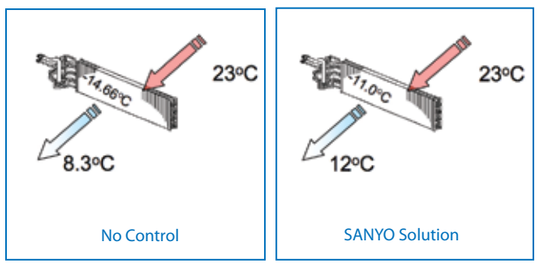


SANYO-Comfort control

Air Discharge Temperature Control

- Available on U indoor ducted units
- Discharge air at below 10°C is uncomfortable and can cause draughts due to cold air dumping
- Air off temperature can be controlled between 7°C - 22°C

Guaranteed user comfort



Refrigerant Volume "self check" procedure

ECOi 2 & 3WAY systems have an inbuilt self judgement mode to indicate the present system refrigerant volume.

From the outdoor unit you can start the self judgement mode, after completion (approx 30mins) the LED display's the results.

It ensures unit efficiency, avoids refrigerant wastage and assists with F-Gas complince.

	LED 1	LED 2
Judgment mode	Blinking	Blinking
Normal	ON	ON
Insufficient gas	Blinking	OFF
Overcharge	OFF	Blinking
Judgment not possible	Blinking alternately	

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Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

New PAC2 System Design Software

Designing a system for VRF (ECOi and GHP) and PACi Commercial Split Systems has never been easier

SANYO has identified the importance of ever-increasing demands for fast and accurate responses to customer requests in our industry. More and more emphasis is being placed upon energy-efficiency in our marketplace. The ability to calculate cooling/heating loads and produce information of actual design conditions is a major advantage to any architect, consultant, contractor or end user.

SANYO understands the ever-changing and demanding industry we are in and we are pleased to announce the launch of the next generation of our system design software program. The new advanced PAC2 system design software has been customised to make any selection and design process as quick and easy as possible. The software features a version of AC Calc Lite. This allows small building loadings to be accurately calculated and directly imported into the PAC2 software.

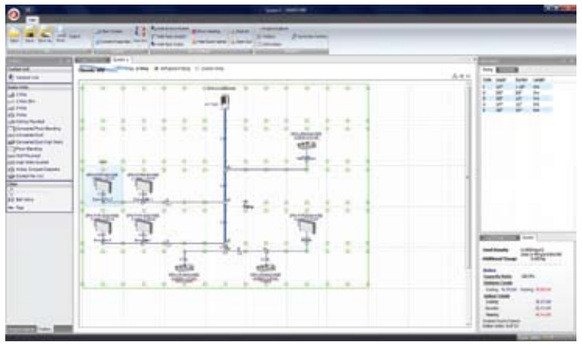
The design package utilises system wizards and import tools to enable both simple and complex systems to be created. In addition, the system will allow outdoor and indoor units to be dragged and dropped on an interactive desktop. This allows users to create everything from realistic floor plans with detailed piping and wiring schematics to send out with quotations, through to installation guidance drawings.

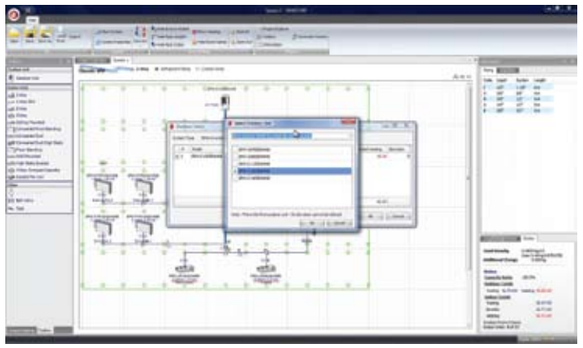
The new PAC2 system software can be used for all SANYO ECOi, GHP and PACi systems.

Features include:

- AC Calc Lite (included in the package)
- Easy to use system wizards
- Auto piping and wiring features
- Converted duties for conditions and pipework
- Auto CAD (DXF) export
- Detailed wiring and pipework diagram

The new PAC2 system software can be used for all SANYO ECOi, GHP and PACi systems.





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Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

ECOi Mini 4-6HP 2 Way Inverter Heat Pump VRF Systems

SANYO's policy of product development continues with the expansion of the ECOi Mini, the 2 pipe heat pump small VRF system specifically designed for the European market.

Offering between 11kW and 16kW cooling capacity in 3 sizes and up to 9 indoor units connected, the ECOi Mini sets new standards of performance and flexibility.

Utilising R410A and DC inverter technology, SANYO offers VRF to a new and growing market.

Forming a new key part of the SANYO VRF line up, the ECOi Mini is compatible with the same indoor units and controls of the electric and gas powered VRF range.

Features at a glance

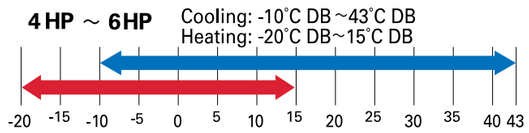
- Single phase or three phase power supply
- One AMP start current
- DC inverter technology combined with R410A for excellent efficiency
- COP of up to 4.34
- Diversity ratio 50-130%
- 150m pipe runs
- Cooling operation to -10°C
- Full range of indoor units and control options
- Compact outdoor unit 1230x940x340mm

Highest COPs - lowest running costs

HP	4	5	6
EER Cooling	4.06	3.66	3.39
COP Heating	4.34	4.10	3.84

Wide operating range

The operating range for heating operation is to -20°C, the cooling range is to -10°C. The remote controller temperature setting offers a range from 16°C to 30°C.



HP				4	5	6
Model name				SPW-CR365GXH56B/SPW-CR365GXH8B	SPW-CR485GXH56B/SPW-CR485GXH8B	SPW-CR605GXH56B/SPW-CR605GXH8B
Power supply				230V, 1 phase, 50/60Hz/400, 3 phase, 50/60Hz		
Cooling capacity		kW		11.20	14.00	15.50
Heating capacity		kW		12.50	16.00	17.60
EER Cooling				4.06	3.66	3.39
COP Heating				4.34	4.10	3.84
Electric rating	Cooling	Running amperes	A	14.1/4.34	19.6/6.02	23.4/7.18
		Power input	kW	2.76	3.83	4.57
	Heating	Running amperes	A	14.7/4.52	19.9/6.13	23.4/7.19
		Power input	kW	2.88	3.90	4.58
Recommended fuse size (motor rated)		1ph 3ph		25/16	32/16	
Dimensions (H/W/D)		mm		1,230x940x340		
Net weight		kg		104		
Air circulation		m^3/min		100		
Refrigerant amount at shipment		kg		3.5		
Piping connection		Gas	Inches (mm)	5/8 (15.88)		3/4 (19.05)
		Liquid	Inches (mm)	3/8 (9.52)		
Operating sound normal mode		dB(A)		51.0		52.0
Operating sound quiet mode				48.0		49.0
Ambient temperature operating range		Cooling		-10°C DB +43°C DB		
		Heating		-20°C DB +15°C DB		
Maximum number of indoor units				6	8	9

* Condenser actual pipe connections may vary from above pipe connections shown, please refer to technical manuals for full details.
* Please refer to tube sizing charts for pipe selections and pipe length parameters.

UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

ECOi 2 Way - features at a glance

R410A INVERTER Air Conditioner

ECOi 2 Way is a high-performance heat pump system with excellent energy-saving features, designed for creating a comfortable environment when either heating or cooling is required.

- Heat pump systems offer heating or cooling
- Single footprint size for all unit capacities
- DC inverter technology combined with R410A for excellent efficiency
- System configuration from 8HP to 48HP
- Diversity ratio 50-130%
- Industry low outdoor unit sound levels: from 54.5dB(A)
- Quiet mode offers a further 3dB(A) reduction
- Extended pipe runs of up to 150m
- COPs up to 4.10
- Heating capacity to -20°C
- Connectability of 40 indoor units from 24HP upwards
- Units available from 8-16HP as single units

Extended compressor life

The compressor running time is monitored and optimised by a microcomputer to ensure that there is no imbalance in the operation times of compressors on the same refrigerant circuit.

Save on piping cost

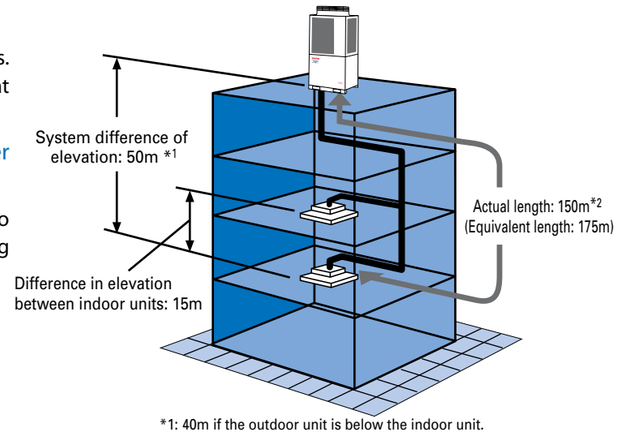
R410A with low pressure loss enables smaller pipe sizes. This means reduced piping space, improved workability at the site and reduced piping material costs.

Extended operating range - better output at lower temperatures

The operating range for heating has been extended to -15°C. The remote controller temperature setting for heating operation has also been extended from 16°C to 30°C.

Longer piping means greater installation area

Reducing the refrigerant volume by reducing piping size has extended the piping actual length to 150m (175m equivalent piping length).



*1: 40m if the outdoor unit is below the indoor unit.
*2: Total length of pipe: no more than 300m

Higher COPs - lower running costs

HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
EER Cooling	3.74	3.54	3.50	3.45	3.38	3.63	3.54	3.51	3.49	3.44	3.43	3.41	3.38	3.50	3.47	3.47	3.45	3.42	3.43	3.40	3.38
COP Heating	4.10	4.10	3.91	3.91	3.79	4.06	4.06	3.97	3.96	3.88	3.84	3.85	3.79	4.00	3.94	3.89	3.91	3.86	3.83	3.83	3.79

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Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

ECOi 2 Way Heat Pump VRF Inverter Systems

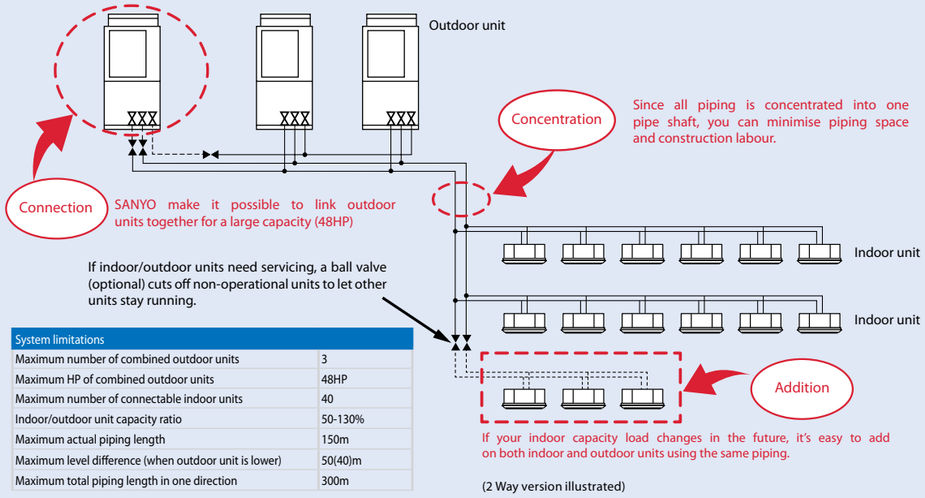
R410A

INVERTER Air Conditioner

HP				8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
Model				C0705DXHN8	C0905DXHN8	C1155DXHN8	C1305DXHN8	C1405DXHN8	10 C0905DXHN8 8 C0705DXHN8	10 C0905DXHN8 10 C0905DXHN8	12 C1155DXHN8 10 C0905DXHN8	14 C1305DXHN8 10 C0905DXHN8	16 C1405DXHN8 10 C0905DXHN8	16 C1405DXHN8 12 C1155DXHN8	16 C1405DXHN8 14 C1305DXHN8	16 C1405DXHN8 16 C1405DXHN8	14 C1305DXHN8 10 C0905DXHN8 10 C0905DXHN8	16 C1405DXHN8 10 C0905DXHN8 10 C0905DXHN8	16 C1405DXHN8 12 C1155DXHN8 10 C0905DXHN8	16 C1405DXHN8 14 C1305DXHN8 10 C0905DXHN8	16 C1405DXHN8 16 C1405DXHN8 10 C0905DXHN8	16 C1405DXHN8 16 C1405DXHN8 12 C1155DXHN8	16 C1405DXHN8 16 C1405DXHN8 14 C1305DXHN8	16 C1405DXHN8 16 C1405DXHN8 16 C1405DXHN8
Power supply				380/400/415V - 3 phase/50,60Hz																				
Cooling capacity			kW	22.40	28.00	33.50	40.00	45.00	50.40	56.00	61.50	68.00	73.00	78.50	85.00	90.00	96.00	101.00	107.00	113.00	118.00	124.00	130.00	135.00
Heating capacity			kW	25.00	31.50	37.50	45.00	50.00	56.50	63.00	69.00	76.50	81.50	87.50	95.00	100.00	108.00	113.00	119.00	127.00	132.00	138.00	145.00	150.00
EER Cooling			kW	3.74	3.54	3.50	3.45	3.38	3.63	3.54	3.51	3.49	3.44	3.43	3.41	3.38	3.50	3.47	3.47	3.45	3.42	3.43	3.40	3.38
COP Heating			kW	4.05	4.06	3.91	3.91	3.79	4.06	4.06	3.97	3.96	3.88	3.84	3.85	3.79	4.00	3.94	3.89	3.91	3.86	3.83	3.83	3.79
Electric rating	Cooling	Running amperes	A	10.1/9.6/9.3	13.3/12.7/12.2	16.2/15.4/14.8	20.0/19.0/18.3	23.0/21.8/21.0	23.4/22.3/21.5	26.6/25.4/24.4	29.5/28.1/27	33.3/31.7/30.5	36.3/34.5/33.2	39.2/37.2/35.8	43.0/40.8/39.3	46.0/43.6/42.0	46.6/44.4/42.7	49.6/47.2/45.4	52.5/49.9/48.0	56.3/53.5/51.5	59.3/56.3/54.2	62.2/59.0/56.8	66.0/62.6/60.3	69.0/65.4/63.0
		Power input	kW	5.99	7.90	9.58	11.60	13.30	13.90	15.80	17.50	19.50	21.20	22.90	24.90	26.60	27.40	29.10	30.80	32.80	34.50	36.20	38.20	39.90
	Heating	Running amperes	A	10.4/9.9/9.5	13.1/12.4/12.0	16.2/15.4/14.8	19.9/18.9/18.2	22.8/21.6/20.9	23.5/22.3/21.5	26.2/24.8/24.0	29.3/27.8/26.8	33.0/31.3/30.2	35.9/34.0/32.9	39.0/37.0/35.7	42.7/40.5/39.1	45.6/43.2/41.8	46.1/43.7/42.2	49.0/46.4/44.9	52.1/49.4/47.7	55.8/52.9/51.1	58.7/55.6/53.8	61.8/58.6/56.6	65.5/62.1/60.0	68.4/64.8/62.7
		Power input	kW	6.17	7.75	9.60	11.50	13.20	13.90	15.50	17.70	20.70	22.60	23.10	26.10	28.00	29.30	31.20	30.60	34.70	34.20	37.10	37.90	42.00
Recommended fuse sizes (motor rated)				32			40		32x2			1x40 1x32	1x40 1x32		2x40		2x32 1x40			1x32 2x40			3x40	
Dimensions (H/W/D)			mm	1887×890×890 (+60)					1887×1880×890 (+60)				1887×1880×890 (+60)				1887×2870×890 (+60)							
Net weight			kg	245	295		345		540	590		640	640		690		929			985			1035	
Air circulation			m^3/min	150	160	180	200	220	160+150	160+160	180+160	200+160	220+160	220+180	220+220		200+160+160	220+160+160	220+180+160	220+200+160	220+220+160	220+220+180	220+220+200	220+220+220
Piping connection	Gas	Inches (mm)		3/4 (19.05)	7/8 (22.22)	1 1/8 (28.58)							1 3/8 (34.92)				1 5/8 (41.27)							
	Liquid			3/8 (9.52)		1/2 (12.7)			5/8 (15.88)				3/4 (19.05)											
	Balance			1/4 (6.35)																				
Operating sound normal mode		dB(A)		54.5	55.0	56.0	60.0	61.0	58.0		58.5	61.5	62.0	62.5	63.5	64.0	62.5	63.0		64.5		65.0	65.5	66.0
Operating sound quiet mode				51.5	52.0	53.0	57.0	58.0	55.0		55.5	58.5	59.0	59.5	60.5	61.0	59.5	60.0		61.5		62.0	62.5	63.0
Ambient temperature operating range	Cooling			-10°C DB +43°C DB																				
	Heating			-20°C DB +15°C DB																				
Maximum number of indoor units				13	16	19	23	26	29	33	36	40												

* Condenser actual pipe connections may vary from above pipe connections shown, please refer to technical manuals for full details.
* Please refer to tube sizing charts for pipe selections and pipe length parameters.

System example for ECOi 2 Way

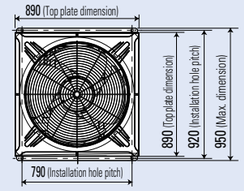


(2 Way version illustrated)

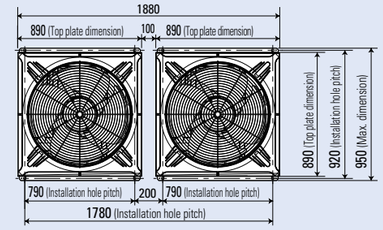
System limitations	
Maximum number of combined outdoor units	3
Maximum HP of combined outdoor units	48HP
Maximum number of connectable indoor units	40
Indoor/outdoor unit capacity ratio	50-130%
Maximum actual piping length	150m
Maximum level difference (when outdoor unit is lower)	50(40)m
Maximum total piping length in one direction	300m

Dimensions of unit combinations (ECOi 2 Way and 3 Way)

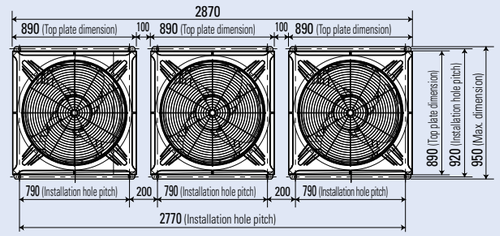
8 to 16 HP



18 to 32 HP



34 to 48 HP



UK Conditions: Cooling Indoor 23°C DB 50% RH Outdoor 30°C Heating Indoor 20°C Outdoor 0°C
Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

UK Conditions: Cooling Indoor 23°C DB 50% RH Outdoor 30°C Heating Indoor 20°C Outdoor 0°C
Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

ECOi 3 Way - features at a glance

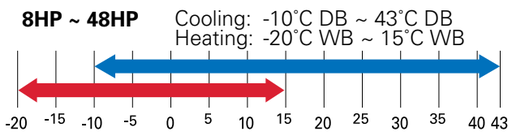
R410A INVERTER Air Conditioner

ECOi 3 Way is one of the most advanced VRF heat recovery systems available. Not only offering high-efficiency and performance for simultaneous heating and cooling, its sophisticated design makes installation and maintenance much easier.

- Simultaneous heating and cooling for total control
- Single footprint size for all unit capacities (8-16HP)
- DC inverter technology combined with R410A for excellent efficiency
- System configuration from 8HP to 48HP
- Diversity ratio 50-130%
- Sound levels: from 54.5dB(A)
- Quiet mode offers a further 3dB(A) reduction
- Extended pipe runs of up to 150m
- COPs to 4.1
- Provides cooling down to -10°C ambient
- Connectability of 40 indoor units from 24HP upwards

Extended operating range - better output at lower temperatures

The operating range for heating has been extended to -20°C. The remote controller temperature setting for heating operation has also been extended from 16°C to 30°C.



There is improved performance at lower ambient conditions due to SANYO's unique wrap-around outdoor unit coil design and active defrost management.

Higher COPs - lower running costs

HP	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48
EER Cooling	3.78	3.45	3.41	3.45	3.38	3.57	3.46	3.44	3.45	3.41	3.4	3.41	3.38	3.45	3.41	3.42	3.42	3.4	3.41	3.40	3.38
COP Heating	4.09	3.95	3.81	3.91	3.79	4.01	3.96	3.88	3.92	3.84	3.8	3.85	3.79	3.93	3.88	3.84	3.88	3.84	3.81	3.83	3.79

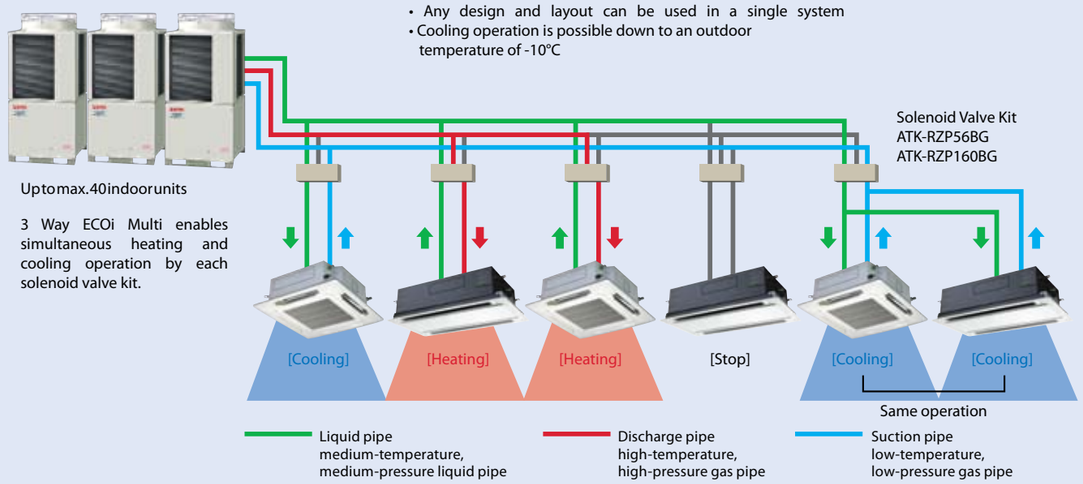
UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

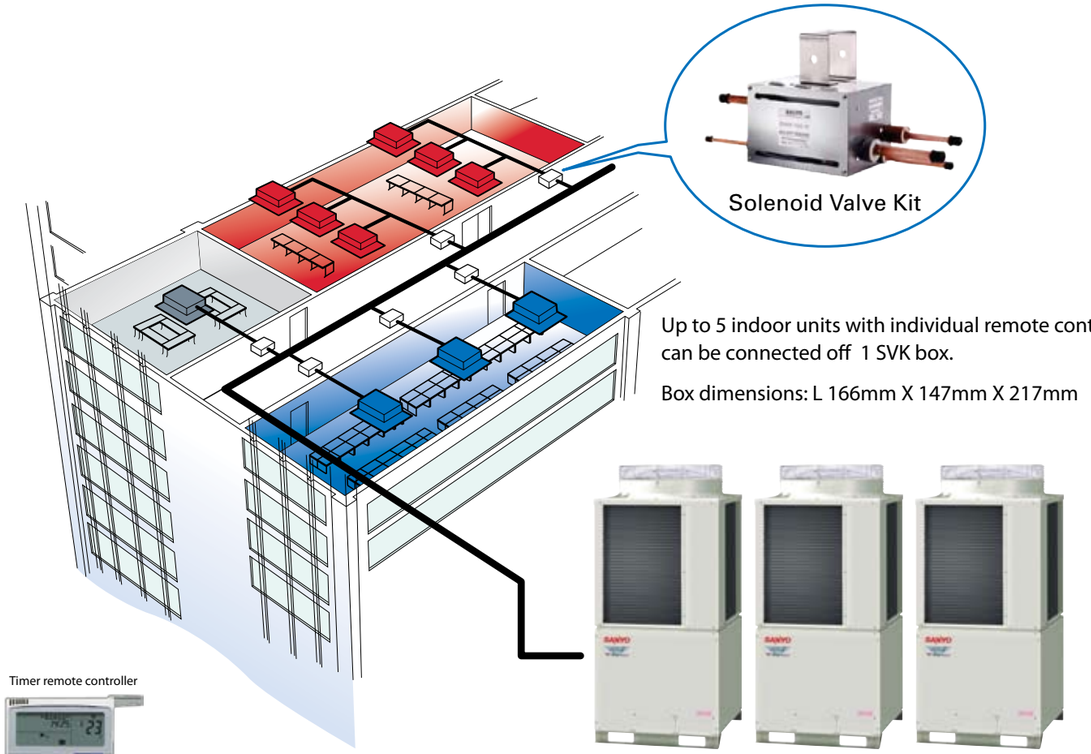
Solenoid Valve Kit

Fully-automatic simultaneous Cooling/Heating operation and heat recovery

System Example

- Any design and layout can be used in a single system
- Cooling operation is possible down to an outdoor temperature of -10°C





Up to 5 indoor units with individual remote control can be connected off 1 SVK box.

Box dimensions: L 166mm X 147mm X 217mm

Timer remote controller

RCS-TM80BG

UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

ECOi 3 Way Heat Recovery VRF Inverter Systems

R410A

INVERTER Air Conditioner

HP (Combined systems)				8	10	12	14	16	18	20	22		24	26	28	30	32	34	36	38	40	42	44	46	48
Model				C0705DZH8	C0905DZH8	C1155DZH8	C1305DZH8	C1405DZH8	8 C0705DZH8	10 C0905DZH8	10 C0905DZH8		10 C0905DZH8	10 C0905DZH8	12 C1155DZH8	14 C1305DZH8	16 C1405DZH8	10 C0905DZH8	10 C0905DZH8	10 C0905DZH8	10 C0905DZH8	10 C0905DZH8	12 C1155DZH8	14 C1305DZH8	16 C1405DZH8
									10 C0905DZH8	10 C0905DZH8	12 C1155DZH8		14 C1305DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	10 C0905DZH8	10 C0905DZH8	12 C1155DZH8	14 C1305DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8
																		14 C1305DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8	16 C1405DZH8
Power supply				380/400/415V - 3phase/50Hz																					
Cooling capacity			kW	22.40	28.00	33.50	40.00	45.00	50.40	56.00	61.50		68.00	73.00	78.50	85.00	90.00	96.00	101.00	107.00	113.00	118.00	124.00	130.00	135.00
Heating capacity			kW	25.00	31.50	37.50	45.00	50.00	56.50	63.00	69.00		76.50	81.50	87.50	95.00	100.00	108.00	113.00	119.00	127.00	132.00	138.00	145.00	150.00
EER Cooling			kW	3.78	3.45	3.41	3.45	3.38	3.57	3.46	3.44		3.45	3.41	3.40	3.41	3.38	3.45	3.41	3.42	3.42	3.40	3.41	3.40	3.38
COP Heating			kW	4.09	3.95	3.81	3.91	3.79	4.01	3.96	3.88		3.92	3.84	3.80	3.85	3.79	3.93	3.88	3.84	3.88	3.84	3.81	3.83	3.79
Electric ratings	Cooling	Running amperes	A	10.0/9.5/9.2	13.7/13.0/12.6	16.6/15.7/15.2	20.0/19.0/18.3	23.0/21.8/21.0	23.8/22.6/21.8	27.3/26.0/25.0	30.2/28.7/27.7		33.6/31.9/30.8	36.5/34.7/33.5	39.4/37.5/36.1	43.0/40.8/39.4	45.9/43.6/42.1	47.5/45.1/43.5	50.5/48.0/46.3	53.0/51.0/49.0	57.0/54.0/52.0	60.0/57.0/55.0	63.0/60.0/58.0	66.0/63.0/60.0	69.0/65.0/63.0
		Power input	kW	5.93	8.12	9.82	11.59	13.31	14.10	16.20	17.90		19.70	21.40	23.10	24.90	26.60	27.80	29.60	31.30	33.00	34.70	36.40	38.20	39.90
	Heating	Running amperes	A	10.3/9.8/9.4	13.5/12.8/12.3	16.6/15.8/15.2	19.9/18.9/18.2	22.8/21.6/20.9	23.9/22.6/21.8	26.8/25.5/24.6	30.0/28.5/27.5		33.3/31.6/30.5	36.2/34.4/33.1	39.3/37.3/36.0	42.6/40.5/39.0	45.6/43.3/41.7	46.9/44.6/43.0	49.7/47.2/45.5	53.0/50.0/48.0	56.0/54.0/52.0	59.0/56.0/54.0	63.0/59.0/57.0	65.0/62.0/60.0	68.0/65.0/63.0
		Power input	kW	6.11	7.97	9.84	11.51	13.19	14.10	15.90	17.80		19.50	21.20	23.30	24.70	26.40	27.50	29.10	31.00	32.70	34.40	36.20	37.90	39.60
Recommended fuse sizes (motor rated)				32			40		32x2				1x40 1x32			2x40			2x32 1x40			1x32 2x40			3x40
Dimensions		(H/W/D)	mm	1,887x890x890 (+60)					1,887x1,880x890 (+60)				1,887x1,880x890 (+60)					1887x2870x890 (+60)							
Net weight			kg	290			340		580				630			680		920			970			1020	
Airflow			m³/min	150	160	180	200	220	150+160	160+160	160+180		160+200	160+220	180+220	200+220	220+220	160+160+200	160+160+220	160+180+220	160+200+220	160+220+220	180+220+220	200+220+220	220+220+220
Piping connection	Gas	Inches (mm)		3/4 (19.05)	7/8 (22.22)	1 1/8 (28.58)							1 3/8 (34.92)					1 5/8 (41.27)							
	Discharge			5/8 (15.88)	3/4 (19.05)	7/8 (22.22)							1 1/8 (28.58)					1 3/8 (34.92)							
	Liquid			3/8 (9.52)		1/2 (12.7)			5/8 (15.88)				3/4 (19.05)												
	Balance			3/8 (9.52)																					
Operating sound normal mode			dB(A)	54.5	55.0	56.0	60.0	61.0	57.8	58.0	58.5		57.8	60.1	60.4	61.0	61.5	60.8	61.3	61.5	62.0	62.4	62.6	63.0	63.3
Operating sound quiet mode				51.5	52.0	53.0	57.0	58.0	54.8	55.0	55.5		54.8	57.1	57.4	58.0	58.5	57.8	58.3	58.5	59.0	59.4	59.6	60.0	60.3
Ambient temperature operating range	Cooling			-10°C DB +43°C DB																					
	Heating			-20°C DB +15°C DB																					
Maximum number of indoor units				13	16	19	23	26	29	33	36		40												

* Condenser actual pipe connections may vary from above pipe connections shown, please refer to technical manuals for full details.
* Please refer to tube sizing charts for pipe selections and pipe length parameters.

ATK-RZP56BG and ATK-RZP160BG

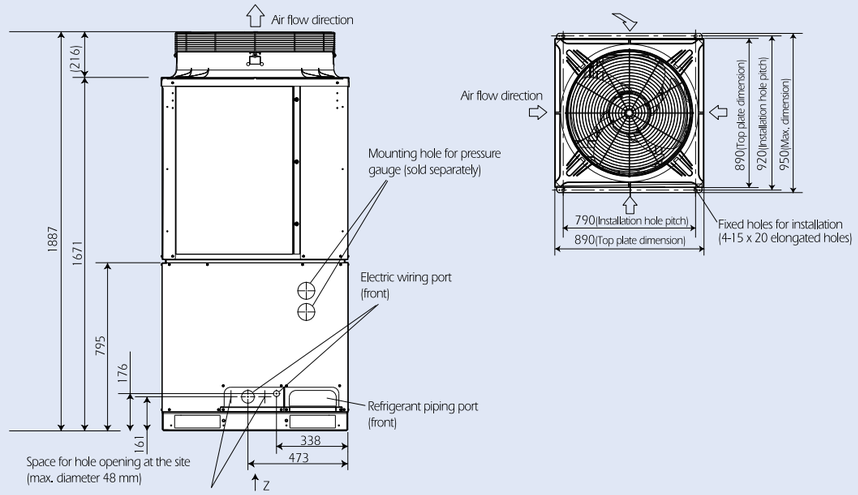
Industry's smallest changeover boxes - fewer locating problems

The SANYO solenoid valve kit is only 147mm high (without the removable bracket) and takes its power from the indoor unit, saving the cost of an additional supply.

- No additional power supply required
- Single mounting fix point
- 2 sizes avaliable (up to 5.6kW and 7.5 to 16kW)

Solenoid Valve Kit

Dimensions ECOi 2 Way and 3 Way (8-16 HP)



UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

UK Conditions: Cooling Indoor 23˚C DB 50% RH Outdoor 30˚C Heating Indoor 20˚C Outdoor 0˚C
Rating Conditions: Cooling Indoor 27˚C DB 19˚C WB Outdoor 35˚C DB 24˚C WB Heating Indoor 20˚C DB Outdoor 7˚C DB 6˚C WB

VRF Indoor Unit Range for ECOi and GHP

R410A

Wider operation

Comfortable auto-flap control

Self-diagnosing function

Automatic restart function for power failure

Automatic fan operation

Air Sweep

Mild dry

Built-in drain pump

Model size		7	9	12	16	18	22	25		36	48	60	76	96	Wireless remote control		Functions
Capacity kW	Cooling	2.2	2.8	3.6	4.5	5.6	6.4	7.3		10.6	14.0	16.0	22.4	28.0	Built-in infra red sensorl	Separately installed infra red sensor	
	Heating	2.5	3.2	4.2	5.0	6.3	7.0	8.0		11.4	16.0	18.0	25.0	31.5			
Capacity BTU/h	Cooling	7,500	9,600	12,000	15,000	19,000	22,000	25,000		36,000	47,800	54,600	76,400	95,500			
	Heating	8,500	11,000	14,000	17,000	21,000	24,000	27,000		39,000	54,600	61,500	85,300	107,500			
X Type Semi-Concealed Cassette		SPW-X075XH SPW-XDR74GXH56B Panel PNR-XD484GHAB	SPW-X095XH SPW-XDR94GXH56B Panel PNR-XD484GHAB	SPW-X125XH SPW-XDR124GXH56B Panel PNR-XD484GHAB	SPW-X165XH SPW-XDR164GXH56B Panel PNR-XD484GHAB	SPW-X185XH SPW-XDR184GXH56B Panel PNR-XD484GHAB		SPW-X255XH SPW-XDR254GXH56B Panel PNR-XD484GHAB		SPW-X365XH SPW-XDR364GXH56B Panel PNR-XD484GHAB	SPW-X485XH SPW-XDR484GXH56B Panel PNR-XD484GHAB	SPW-X605XH SPW-XDR604GXH56B Panel PNR-XD484GHAB			•		
XM Type Semi-Concealed		SPW-XM075XH Panel PNR-XM185	SPW-XM095XH Panel PNR-XM185	SPW-XM125XH Panel PNR-XM185	SPW-XM165XH Panel PNR-XM185	SPW-XM185XH Panel PNR-XM185									•	•	
US Type Concealed Duct		SPW-US075XH	SPW-US095XH	SPW-US125XH	SPW-US165XH	SPW-US185XH										•	
U Type Concealed Duct		SPW-U075XH SPW-UR74GXH56B	SPW-U095XH SPW-UR94GXH56B	SPW-U125XH SPW-UR124GXH56B	SPW-U165XH SPW-UR164GXH56B	SPW-U185XH SPW-UR184GXH56B		SPW-U255XH SPW-UR254GXH56B		SPW-U365XH SPW-UR364GXH56B	SPW-U485XH SPW-UR484GXH56B	SPW-U605XH SPW-UR604GXH56B				•	
DR Type Concealed Duct	25,48 type / 76,96 type							SPW-DR254GXH56B		SPW-DR364GX-H56B	SPW-DR484GX-H56B		SPW-DR764GXH56B	SPW-DR964GXH56B		•	
K Type Wall Mounted Unit		SPW-K075XH	SPW-K095XH	SPW-K125XH											•	•	
KR Type Wall Mounted Unit					SPW-KR164GXH56B	SPW-KR184GXH56B		SPW-KR254GXH56B							•	•	
T Type Ceiling-Mounted Unit				SPW-T125XH SPW-TDR124GXH56B	SPW-T165XH SPW-TDR164GXH56B	SPW-T185XH SPW-TDR184GXH56B		SPW-T225XH SPW-TDR254GXH56B		SPW-T365XH SPW-TDR364GXH56B	SPW-T485XH SPW-TDR484GXH56B				•	•	
FTR Type Floor/Ceiling Mounted Units		SPW-FTR74EXH56B	SPW-FTR94EXH56B	SPW-FTR124EXH56B	SPW-FTR164EXH56B	SPW-FTR184EXH56B	SPW-FTR224EXH56B								•	•	
FUR Type Floor/Ceiling Slim Concealed Duct		SPW-FUR74EXH56B	SPW-FUR94EXH56B	SPW-FUR124EXH56B	SPW-FUR164EXH56B	SPW-FUR184EXH56B	SPW-FUR224EXH56B									•	
FR Type Floor Standing Unit		SPW-FR74GXH56B	SPW-FR94GXH56B	SPW-FR124GXH56B	SPW-FR164GXH56B	SPW-FR184GXH56B		SPW-FR254GXH56B								•	
FMR Type Concealed Floor Standing Unit		SPW-FMR74GXH56B	SPW-FMR94GXH56B	SPW-FMR124GXH56B	SPW-FMR164GXH56B	SPW-FMR184GXH56B		SPW-FMR254GXH56B								•	
ADR Type Semi-Concealed Cassette 1-Way Air Discharge		SPW-ADR74GXH56B Panel PNR-AD124GHB	SPW-ADR94GXH56B Panel PNR-AD124GHB	SPW-ADR124GXH56B Panel PNR-AD124GHB											•	•	
SR Type Semi-Concealed Cassette 2-Way Air Discharge		SPW-SR74GXH56B Panel PNR-S124GHB	SR94GXH56B Panel PNR-S124GHB	SR124GXH56B Panel PNR-S124GHB	SR164GXH56B, Panel PNR-S124GHB	SR184GXH56B Panel PNR-S124GHB		SPW-SR254GXH56B Panel PNR-S253GHANB							•	•	
LDR Type Semi-Concealed Slim Cassette			SPW-LDR94GXH56B Panel PNR-LD254GHAB	SPW-LDR124GXH56B Panel PNR-LD254GHAB	SPW-LDR164GXH56B Panel PNR-LD254GHAB	SPW-LDR184GXH56B Panel PNR-LD254GHAB		SPW-LDR254GXH56B Panel PNR-LD254GHAB							•	•	
GU Type Total Heat Exchanger			SPW-GU055XH		SPW-GU075XH	SPW-GU105XH										•	

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

Room Control Systems Overview

A wide variety of control options to meet the requirements of different customers.

Operation system	Individual control systems			Timer operation
Requirements	Normal operation	Operation from each seat	Simple operation	Daily and weekly programme
External appearance				
Type, model name	Timer wired remote controller RCS-TM80BG	Wireless remote controller RCS-SH80BG.WLB RCS-TH80BG.WLB RCS-BH80AG.WLB RCS-TRP80BG.WLB RCS-SH1BGB	Simplified remote controller RCS-KR1EG	Schedule timer SHA-TM64AGB
Number of indoor units which can be controlled	1 group, 8 units	1 group, 8 units	1 group, 8 units	64 groups, max. 64 units
Use limitations	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. When there is no system controller, connection is possible to the T10 terminal of an indoor unit.
Connectable indoor unit	4 series indoor unit	4 series indoor unit	4 series indoor unit	4 series indoor unit
Function				
ON/OFF	•	•	•	-
Mode setting	•	•	•	-
Fan speed setting	•	•	•	-
Temperature setting	• *1	• *1	• *1	-
Air flow direction	•	•	•	-
Permit/Prohibit switching	-	-	-	-
Weekly programme	•	-	-	•

*1 Setting is not possible when a remote control unit is present. (Use the remote control for setting.)

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

Centralised Control Systems Overview

Centralised control systems				
	Operation with various function from central station	Only ON/OFF operation from central station	Simplified charge ratio for each tenant	
			Touch screen panel	Personal computer (field supply)
External appearance			 Web application	
Type, model name	System controller SHA-KC64AGB	ON/OFF controller SHA-KC16KAGB	Intelligent controller SHA-KT256EG	Communication adaptor SHA-KA128AGB
Number of indoor units which can be controlled	64 groups, max. 64 units	16 groups, max. 64 units	64 units x 4 systems, max. 256 units	2 systems, max. 128 units
Use limitations	Up to 10 units can be connected to one system. Main unit/sub unit (1 main unit + 1 sub unit) connection is possible. Use without remote controller is possible.	Up to 8 units (4 main units + 4 sub units) can be connected to one system. Use without remote controller is impossible.	A communication adaptor (SHA-KA128AGB) must be installed for three or more systems.	Maximum 500 indoor units (128 per communication adaptor)
Connectable indoor unit	4 series indoor unit	4 series indoor unit	4 series indoor unit	4 series indoor unit
Function				
ON/OFF	•	•	•	•
Mode setting	•	-	•	•
Fan speed setting	•	-	•	•
Temperature setting	•	-	•	•
Air flow direction	• *1	-	• *1	• *1
Permit/Prohibit switching	•	•	•	•
Weekly programme	•	-	•	•

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

GU Type Heat Exchanger

SANYO's new heat recovery ventilation system allows total control via a system network whilst modulating the temperature and humidity of incoming air supply.

- Integration of heat recovery ventilation and DX coil technology for optimum air temperature control
- The DX coil can be connected to all ECO & GHP outdoor units
- Easy to clean filter
- Compact design
- Filter option
- 3 Way: Solenoid valve kit is required for each unit
- 2 Way: RAP kit is required for each unit

Controller Options

Timer remote controller

RCS-TM80BG

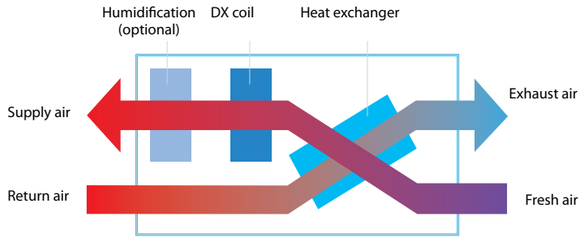
Wireless remote controller

RCS-BH80BG.WL

Simplified remote controller

RCS-KR1EG

Installation example



Indoor unit specifications

Model Name			SPW-GU055XH	SPW-GU075XH	SPW-GU105XH
Air circulation (H) m^3/h			500	750	1,000
Power source				220/230/240V, 1 phase - 50 Hz	
Fresh air load treatment capacity	UK Cooling	kW	5.3 (1.7)*1	8.2 (2.6)*1	10.7 (3.4)*1
	UK Heating	kW	6.5 (2.3)*1	9.8 (3.5)*1	12.6 (4.6)*1
Enthalpy exchange efficiency	UK Cooling	%		59	
	UK Heating	%		67	
Temp exchange efficiency				75	
Equivalent cooling capacity		kW	3.6	5.6	7.3
		BTU/h	12,000	19,000	25,000
Power input	Cooling	kW	0.532	0.737	0.798
	Heating	kW	0.532	0.737	0.798
Running current	Cooling	Amps	2.4	3.2	3.5
	Heating	Amps	2.4	3.2	3.5
Fan motor	Type			Sirocco fan	
	External static pressure-return air	Pa	183 (170)	221 (188)	135 (88)
	External static pressure-supply air	Pa	205 (182)	264 (218)	176 (137)
	Output	kW	0.28 (4P)x2	0.35 (4P)x2	
Sound pressure level (C/H)		db(A)	46 (Cooling), 47 (Heating)	47 (Cooling), 48 (Heating)	48 (Cooling), 49 (Heating)
Dimensions	Height	mm	425	450	
	Width	mm	1785	1903	
	Depth	mm	1000	1120	1220
Piping connections	Liquid (flare)	mm (inches)		6.35 (1/4)	
	Gas (flare)	mm (inches)		12.7 (1/2)	
	Drain piping			VP-25	
Connection duct diameter		mm	250		300
Net weight		kg	134	153	168

The values in ( ) for the external static pressure and operating sound are for use of booster cable. *1: Heat recovery capacity by heat exchanger. Data subject to change without notice.

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB

CFR Units

The CFR-PHE unit structure is constructed from Aluzink frame work and galvanised steel with 20 mm thick fire resistant acoustic insulation, reducing both weight and sound levels to a minimum. The system is supplied with ducted spigots which can be positioned either at the front or side of the unit to ease installation.

- High efficiency heat exchanger
- Easy to clean filters

The high efficiency low pressure loss total heat exchanger is made of specially treated paper to enable the unit to be as efficient as 76% during normal operation. This allows system to recover both latent and sensible heat.

Indoor unit specifications

Model CFR/ CFR-PHE		33	55	110	175	220
Nominal air flow *	m3/hr	300	620	920	1580	1850
External Static Pressure	pa	45	55	65	70	77
Sound Pressure **	dB(A)	43	51	50	53	52
Fans						
Power in	Watts	184	340	294	700	700
Absorbed power	A	0.75	1.8	2.2	4.4	4.8
Fan speeds	no	1			3	
Insulation Class		F				
Electrical supply	v/ph/htz	230/1/50				
Bioxigen Elements (PHE only)						
Number of elements		2 X C				2 X F
Electrical supply	v/ph/htz	230/1/50				
Power in	Watts	8	8	8	8	8
Filter		EU3				
Paper Heat Exchanger	CFR-PHE					
Temperature Efficiency heating ***		76%	74%	72%	68%	73%
Temperature Efficiency cooling ****		62%	60%	58%	54%	59%

* Nominal air flow
** Sound pressure 1.5 mts from the unit in free field
*** Data referred to -5°C 80% RH OAT room condition 20°C 50% RH

**** Data referred to 32°C 50% RH OAT room condition 26°C 50% RH

Rating Conditions: Cooling Indoor 27°C DB 19°C WB Outdoor 35°C DB 24°C WB Heating Indoor 20°C DB Outdoor 7°C DB 6°C WB