

Electric
VRF



New ECOi Electric 2 and 3 pipe VRF systems

2006/7 Range



R410A

ECOi – the next generation of 2 and 3 pipe electric

SANYO is justifiably proud of being renowned for developing unique technologies, offering superior products and delivering quality services. Since its formation back in 1958, SANYO Air Conditioners has enjoyed a number of 'world firsts', from introducing the world's first heat pump air conditioners in 1960, to introducing simultaneous heating & cooling GHPVRF to Europe in 2005. Positive proof that SANYO is, and is committed to remain, at the cutting edge of product innovation and forward-thinking dynamism.

SANYO introduced the company's first 3-pipe VRF system back in 1989 and this, together with our continuous programme of research and development has ensured that our products remain at the very forefront of innovation. 2006/7 sees the launch of many exciting new products including the latest generation of Electric VRF - the ECOi Multi Series.



Available in 2 pipe heat pump and 3 pipe heat recovery versions, the ECOi range combines advanced design, cutting edge technologies and R410A refrigerant to produce the most energy efficient and cost effective systems to date.

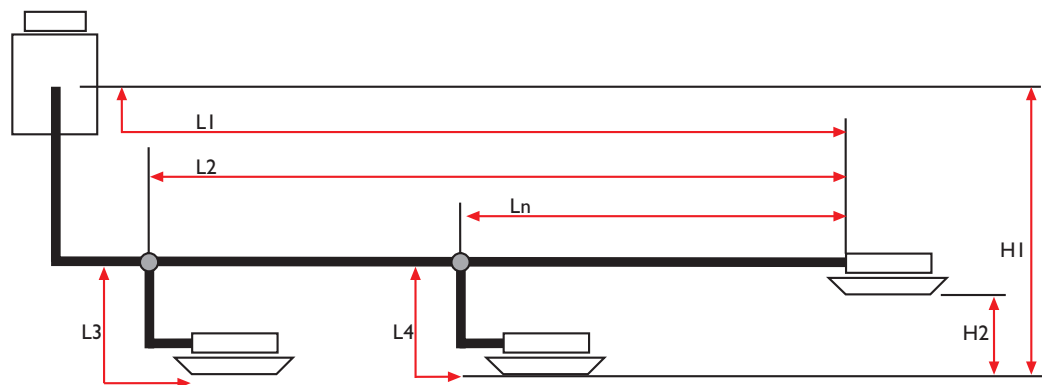
With a wider range of outdoor units, indoor units and control options than ever before, it is easy to see why choosing SANYO ECOi is a good decision all round.

Easy to justify... a good decision all round

- Smaller pipework, lower material costs
- Easy to maintain
- High efficiency
- Reduced life cycle costs

Easy to install... smaller pipework with longer runs

R410A has a higher operating pressure with a lower pressure loss than previous refrigerants. This enables smaller pipe sizes to be used, which take up less space in risers and also lead to reduced material costs.

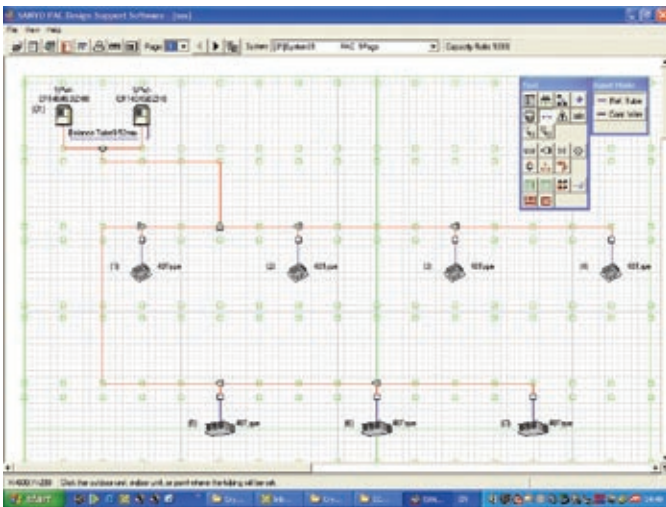


Category	Item	Description		Max length (m)
Allowable pipework length	L1	Maximum pipe run	Actual length	150
			Equivalent length	175
	L2-L3	Difference between maximum length and minimum length from the first distribution joint	40	
	L3 L4 Ln	Maximum length of each distribution joint	30	
	L1+L3+L4	Maximum 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

VRF systems

Easy to design... simple design software

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. We have therefore 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. We cannot guarantee you securing the project, but we can certainly help you give it your best shot!



System design software

Accurate capacity control

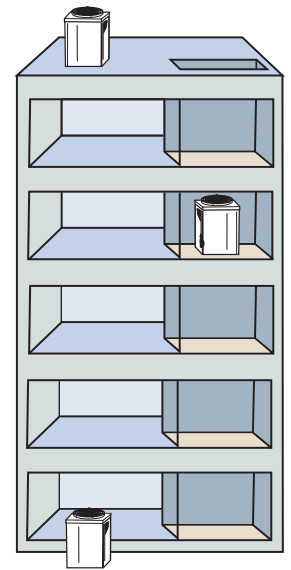
To ensure that the compressor capacity is matched to building load as accurately and efficiently as possible, Sanyo has designed its range of 2 and 3 Way ECOi systems to operate with DC inverter and high efficiency fixed speed compressors. The system selects the most efficient compressor to operate by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

Easy to commission... auto addressing

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

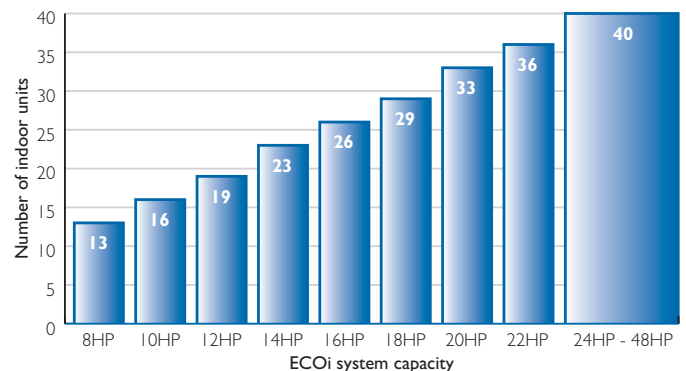
Easy to position... compact footprint

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 an attractive installation.



Easy to select...8HP to 48HP systems

With 15 indoor model styles available, ECOi systems are the ideal choice for multiple small capacity indoor unit installations as up to 40 indoor units can be connected to systems of 24HP and above.



Easy to control... variety of control options

There is a wide variety of control options available to ensure that the ECOi system provides the user with the degree of control that they desire. See back page for further details.

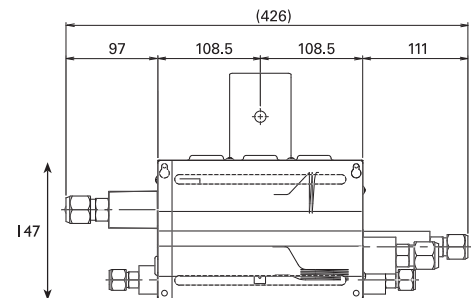
ECOi 3 Way - features at a glance

- 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)
- Silent mode offers a further 3dB(A) reduction
- Extended pipe runs of up to 150m
- COPs from 4.10
- Provides cooling down to -10°C ambient
- Connectability of 40 indoor units from 24HP upwards



Industry's smallest changeover boxes – less siting problems

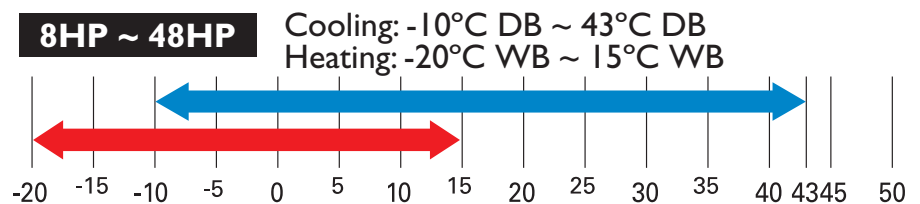
The SANYO solenoid valve kit is only 147mm high (without the removable bracket) and takes its power from the indoor unit saving the cost of an additional supply.



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.



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

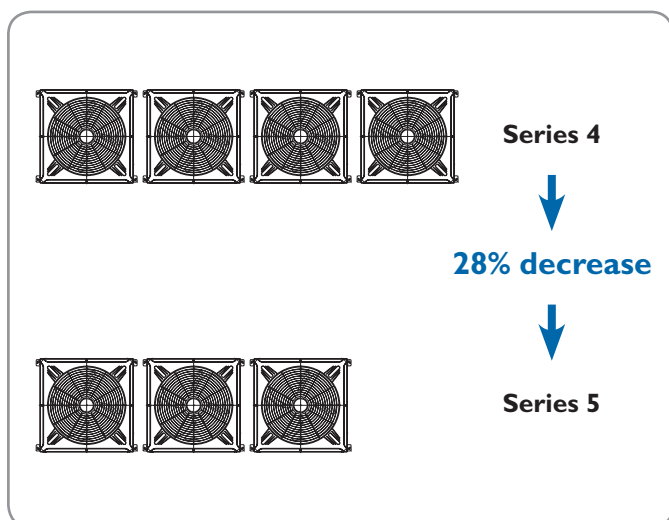
ECOi 2 Way - features at a glance

- Heat pump systems offer heating and 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)
- Silent mode offers a further 3dB(A) reduction
- Extended pipe runs of up to 150m
- COPs from 4.10
- Heating capacity to -20°C
- Connectivity of 40 indoor units from 24HP upwards
- Units available from 8-16HP as single units



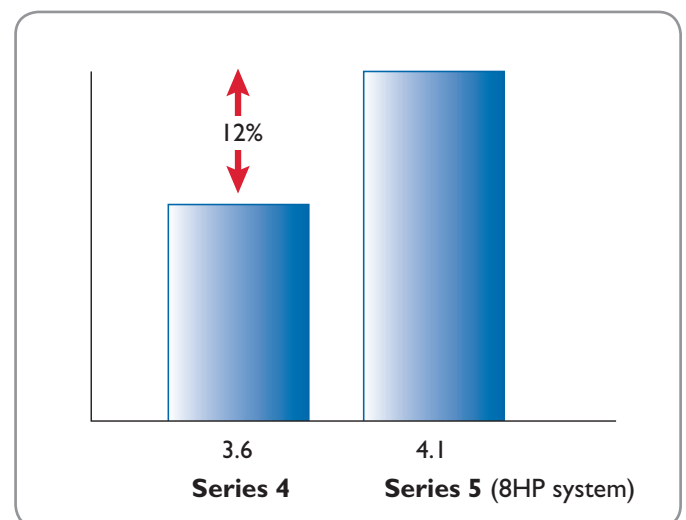
Reduced foot print

The new Series 5 ECOi 2 way has significantly reduced outdoor unit foot print. This has been achieved by reducing the number of condensing units from 4 to 3 on our 48HP system.



Increased performance

SANYO continues to raise the performance by introducing new heat exchanger designs. The new ECOi 2 way system has improved its COP by 12% - one of the highest COP's in the industry.





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

SANYO ECOi R410A Electric VRF Systems



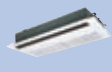



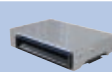
ECOi 3 Way Multi system outdoor units

									
HP (Combined systems)	8	10	12	14	16	18	20	22	24
Model	CR704GDZH8	CR904GDZH8	CR1154GDZH8	CR1304GDZH8	CR1404GDZH8	8 CR704GDZH8	10 CR904GDZH8	10 CR904GDZH8	10 CR904GDZH8
						10 CR904GDZH8	10 CR904GDZH8	12 CR1154GDZH8	14 CR1304GDZH8

ECOi 2 Way Multi system outdoor units

									
HP	8	10	12	14	16	18	20	22	24
Model	C0705DXH8	C0905DXH8	C1155DXH8	C1305DXH8	C1405DXH8	10 C0905DXH8	10 C0905DXH8	12 C1155DXH8	14 C1305DXH8
						8 C0705DXH8	10 C0905DXH8	10 C0905DXH8	10 C0905DXH8

Overview of compatible indoor units

Model size	74	94	124	164	184	224	254	364	484	604	764	964
Capacity 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
kW 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
 XDR 4 Way cassette		•	•	•	•		•	•	•	•		
 XMR 4 Way mini cassette	•	•	•	•	•							
 LDR Semi-concealed slim 1 Way cassette		•	•	•	•		•					
 ADR Semi-concealed 1 Way cassette	•	•	•									
 SR 2 Way blow cassette		•	•	•	•		•					
 UR Concealed Duct	•	•	•	•	•		•	•	•			
 FUR Concealed slim duct	•	•	•	•	•	•						









Full Range Overview



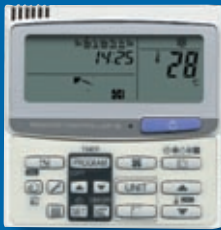
	26	28	30	32	34	36	38	40	42	44	46	48				
10	CR904GDZH8	12	CR1154GDZH8	14	CR1304GDZH8	16	CR1404GDZH8	10	CR904GDZH8	12	CR1154GDZH8	14	CR1304GDZH8	16	CR1404GDZH8	
16	CR1404GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	12	CR1154GDZH8	14	CR1304GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	
					14	CR1304GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	16	CR1404GDZH8	16	CR1404GDZH8



	26	28	30	32	34	36	38	40	42	44	46	48				
16	C1405DXH8	16	C1405DXH8	16	C1405DXH8	16	C1405DXH8	16	C1405DXH8	16	C1405DXH8	16	C1405DXH8			
10	C0905DXH8	12	C1155DXH8	14	C1305DXH8	16	C1405DXH8	10	C0905DXH8	12	C1155DXH8	14	C1305DXH8	16	C1405DXH8	
					10	C0905DXH8	10	C0905DXH8	10	C0905DXH8	12	C1155DXH8	14	C1305DXH8	16	C1405DXH8

Model size	74	94	124	164	184	224	254	364	484	604	764	964
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
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
 UMR Ducted units	•	•	•	•	•	•						
 DR High static pressure duct							•	•	•		•	•
 KR Wall mounted units	•	•	•	•	•		•					
 TDR Ceiling mounted units			•	•	•		•	•	•			
 FTR Floor and Floor/ Ceiling units	•	•	•	•	•	•						
 FMR Chassis units	•	•	•	•	•	•						
 FR Floor units	•	•	•	•	•	•						
 GU Heat recovery units		•		•	•							

Control options



Standard wired remote controller - RCS-TM80BG

SANYO realise that the best designed energy efficient solutions can be completely let down by misuse due to lack of information or user ignorance. Too often, significant energy is wasted as users alter the temperature on the controller to its lowest setting (18°C) if they are too hot and to the highest temperature (30°C) if they are too cold, rather than allowing a system to condition an area to the set point temperature.

To prevent this massive potential for energy wastage, the SANYO ECOi indoor unit's operating parameters can be altered or fixed, without cost, by adjusting the standard RCS-TM80BG remote controller. For example, the low point could be changed to 20°C and the high point fixed at 24°C, easily sufficient to provide comfort cooling, but immediately eliminating large temperature swings and the resultant wasteful energy consumption.

Mode change, deadbands and fan speed settings can also be changed to suit the individual application ensuring the desired conditions are maintained with the minimum use of energy.



Wireless remote controller

- Various model references
- 1 group, with a maximum of 8 units
- Up to 2 remote controllers can be connected per group of indoor units



On/off controller

- 16 groups, with a maximum of 64 units
- Up to 8 units (4 main units + 4 sub units) can be connected to one system
- Use without remote controller is possible



Simplified remote controller

- RCS-KR1AG
- 1 group, with a maximum of 8 units
- Up to 2 remote controllers can be connected per group of indoor unit



TouchScreen controller

- SHA-KT256AG
- 64 groups x 4 S-Net circuits with a maximum of 256 units
- Simple, user friendly touch screen operation



Schedule timer

- SHA-TM64AG
- 8 groups, with a maximum of 64 units
- Designed to match standard remote controller
- Power supply from the system controller
- When there is no system controller, connection is possible to the T10 terminal of an indoor unit



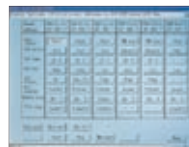
LonWorks interface

- SHA-LN16UG
- Communications converter for connecting LonWorks to the SANYO control network



System controller

- SHA-KC64AG
- 64 groups, with a maximum of 64 units
- Use without remote controller is possible
- Up to 5 system controllers can be connected to a single S-Net



AMY software

- Dedicated SANYO software can be loaded onto any Windows driven device
- Indoor usage can be monitored for individual billing
- Full control including time clocking can lead to savings on remote controllers

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.
Heating: Indoor temperature 20°C DB, Outdoor temperature 7°C DB.



Indicates conformance with EC Directives



ISO 9001:2001
Certificate Number: JQ116B



ISO 14001:2001
Certificate Number: ECOJ0303-33



SANYO

AIR CONDITIONERS

www.sanyoaircon.com