BOSCH
Invented for life

Efficient air conditioning in commercial buildings

VRF Air Conditioning Systems

Bosch Climate 5000 VRF

Also a powerful partner in the world of air conditioning: Bosch.

Discover new opportunities: Bosch is now offering not only heating, hot water and ventilation solutions, but also VRF (Variable Refrigerant Flow) systems for efficient air conditioning in commercial buildings. This opens up attractive prospects for you and even greater benefits from the expertise of Bosch.

Ideal room climate at the touch of a button

Thanks to variable refrigerant flow technology, the new Bosch VRF air conditioning systems are convenient and save valuable energy at the same time. They adapt their performance to current demand and therefore also work with outstanding efficiency under partial load. The systems consist of outdoor units and several inside units and can be utilised for both cooling and heating. These new solutions from Bosch therefore play a decisive role in ensuring that people in all areas of large buildings enjoy a comfortable climate, independent of the seasons of the year.

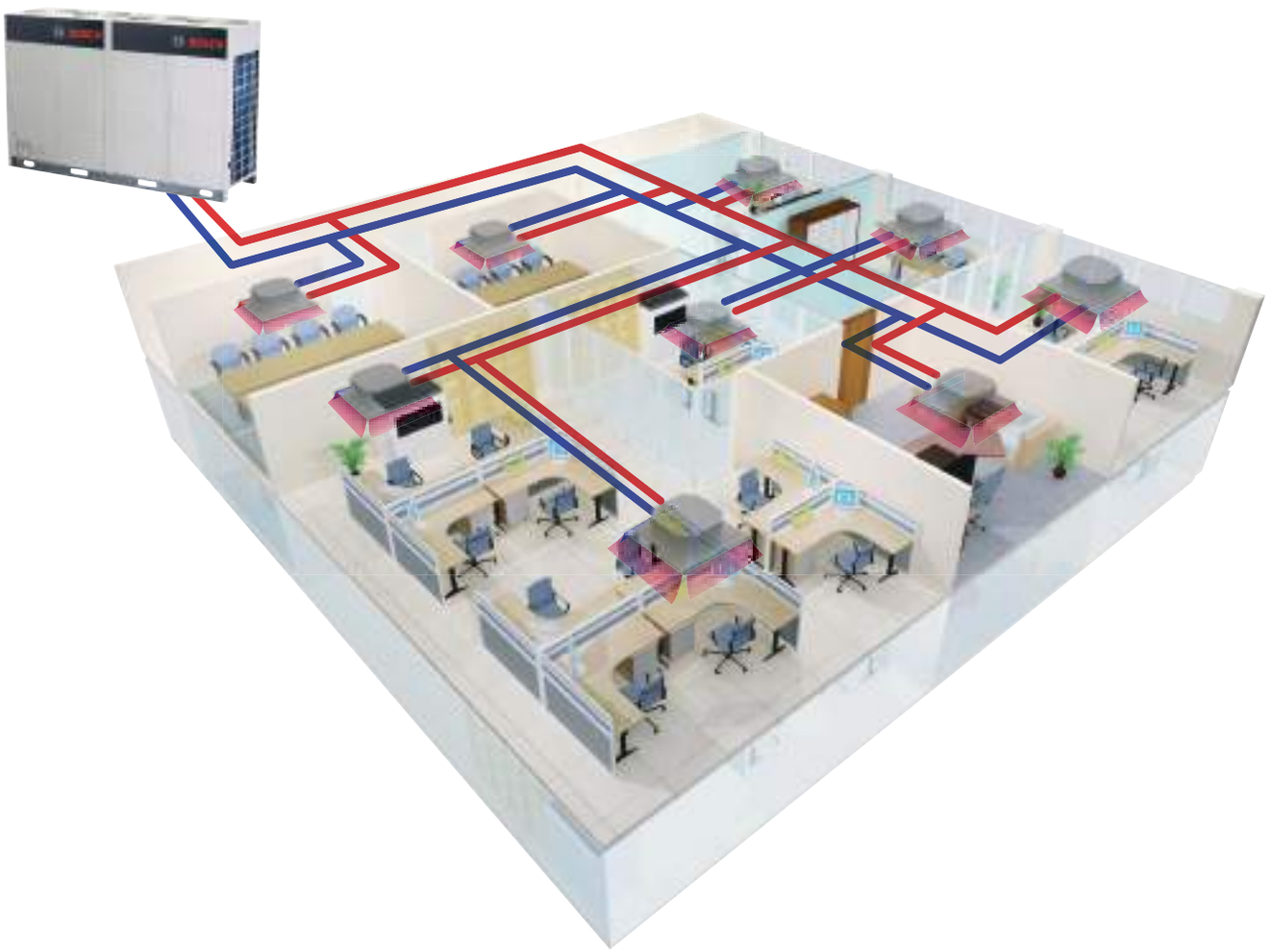
Efficiency from a single provider

If you are looking for an industrial boiler, a combined heat and power system or high-efficiency VRF air conditioning, Bosch has a multitude of solutions to meet your precise needs. But that's not all: Bosch also realises customised package solutions with perfectly harmonised components and technology from one single provider. This means that you can comprehensively exploit all existing efficiency potentials. The result: your energy costs are permanently kept at a low level and you make a sustainable contribution to protecting the environment.

The future: made by Bosch

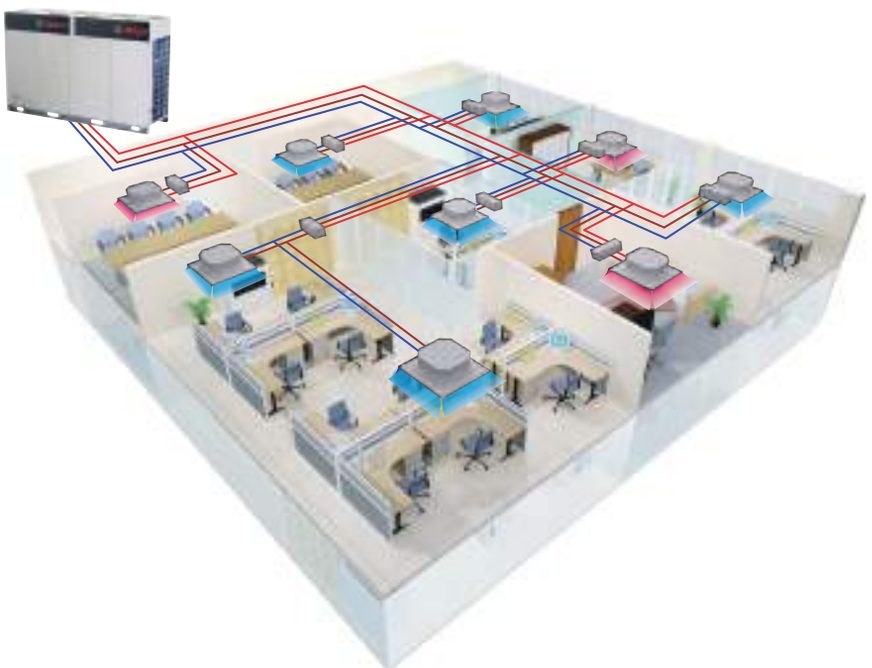
Bosch enjoys a worldwide reputation for highest-quality products and services. Global organisation and production standards guarantee uncontested approval and problem-free operation of your largescale systems from Bosch. Thanks to the enormous importance and long tradition of innovation, you benefit from the unique, pioneering spirit of Bosch engineering and technology. Advanced technology and the high quality of your new VRF system from Bosch thus ensure long-term fulfilment of its users' expectations.

Bosch Climate 5000 VRF



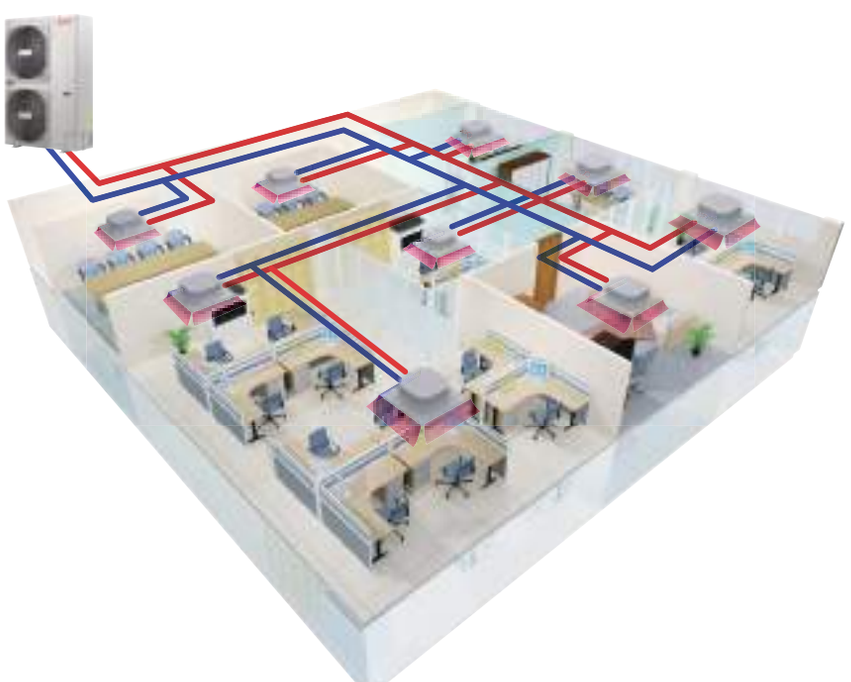
SDCI Series – All DC Inverter Heat Pump

- Heat Pump (Cooling + Heating) VRF air conditioning system
- All DC inverter technology with all DC inverter compressors and all DC fan motors makes high energy efficiency
- Up to 64 indoor units can be operated in one system
- Extensive capacity range from 8 HP to 72 HP in 2 HP intervals, meets all customer needs



RDCI Series – All DC Inverter Heat Recovery

- Simultaneous cooling and heating operation in one system
- Up to 64 indoor units can be operated in one system
- Extensive capacity range from 8 HP to 64 HP in 2 HP intervals, meets all customer requirement concerning small to large buildings
- Heat recovery is achieved by transferring extract heat from indoor units in cooling mode to areas requiring heating
- The SBOX equipment switches the system between cooling and heating modes



MDCI Series – Mini VRF Heat Pump

- Heat Pump (Cooling + Heating) VRF air conditioning system
- All DC inverter technology with all DC inverter compressors and all DC fan motors makes high energy efficiency
- Maximum 12 indoor units can be operated in one system
- Extensive capacity range from 8 kW to 26 kW, suitable for small offices, villas, shops, etc.

Product Lineup

SDCI Series – All DC Inverter Heat Pump VRF

Capacity Range	HP	8	10	12	14	16	18
	kW	25.2	28.0	33.5	40.0	45.0	50.0
Appearance							

RDCI Series – All DC Inverter Heat Recovery VRF

Capacity Range	HP	8	10	12	14	16
	kW	25.2	28.0	33.5	40.0	45.0
Appearance						

MDCI Series – Mini VRF Heat Pump

Capacity Range	kW	7	9	12	14	16	18	20	22	26
Appearance										

Contents

8 Overview
13 SDCI Series – All DC Inverter Heat Pump VRF
23 RDCI Series – All DC Inverter Heat Recovery VRF
33 MDCI Series – Mini VRF Heat Pump
43 Indoor Units Lineup
66 Control System
78 Central Control Software
86 System Selection & Design
87 Heat Recovery Ventilation Unit (HRV)
93 Joints

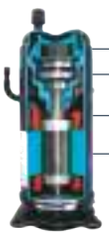
Bosch reserve the rights to change content at any time without prior notice.

Overview

Bosch Climate 5000 VRF has many key technologies which results in high improved performance.
You will find main technologies in the further pages which gives excellent cooling/heating performance, comfort, reliability and easy installation.

High efficiency DC inverter compressor

Bosch Climate 5000 VRF air conditioning system offers high class energy efficiency for cooling and heating by utilizing brushless DC compressor control, innovative designed heat exchanger and several high performance other parts. High efficiency DC inverter scroll compressor reduces power consumption by 25%.



New structure enhances mid-frequency performance
Specially designed scroll profile for R-410A

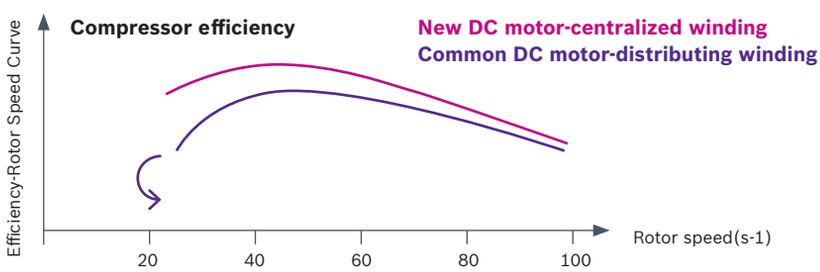
More compact, weight reduced by 50%

Advanced permanent magnet DC motor improves low-frequency band performance

Powerful magnets provide high torque and efficiency and achieve 70% reduction in volume.

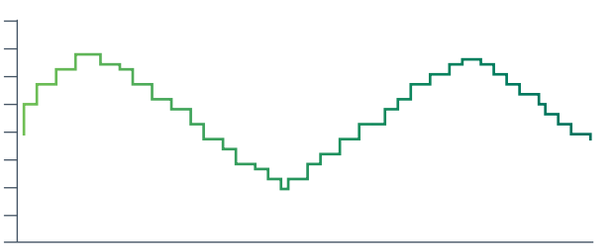
Centralizing winding

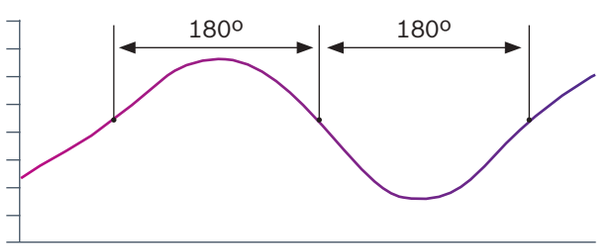
Distributing winding



Smooth 180° sine wave DC inverter

Adopting the 180° Sine Wave Inverter to smooth motor rotation greatly improves operating efficiency compared with traditional sawtooth wave.

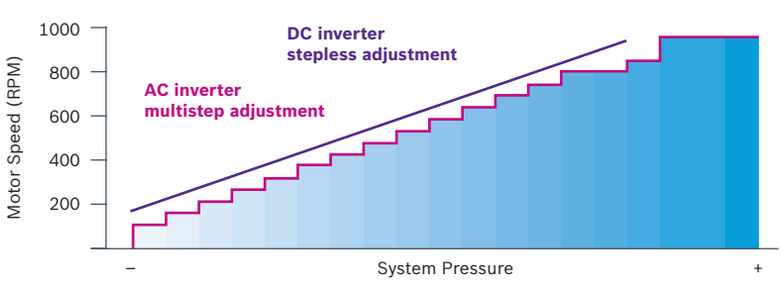




High efficiency DC fan motor

According to the running load and system pressure, the system controls the speed of DC fan to achieve the minimum energy consumption and best performance.

DC motor



Optimized fan grille

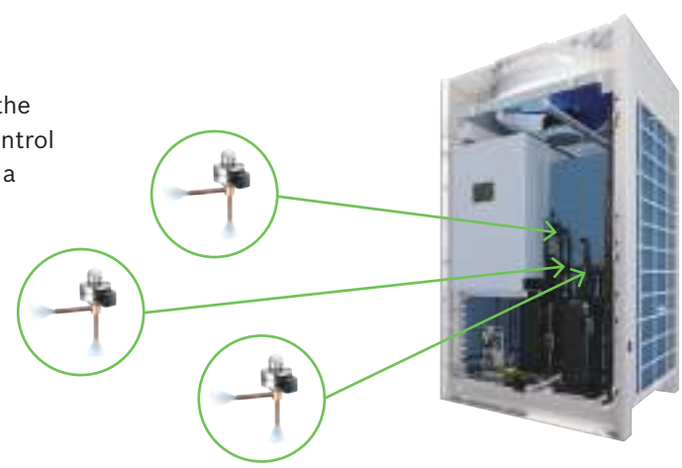
Optimized fan blade shape with new air outlet grille enhanced air flow volume which greatly improves fan performance and decreases noise. Also, a higher external static pressure has been achieved up to 60 Pa.

New profile fan blade

A new blade with sharp edges and a slight curve increases the airflow rate and lowers vibration and airflow resistance.

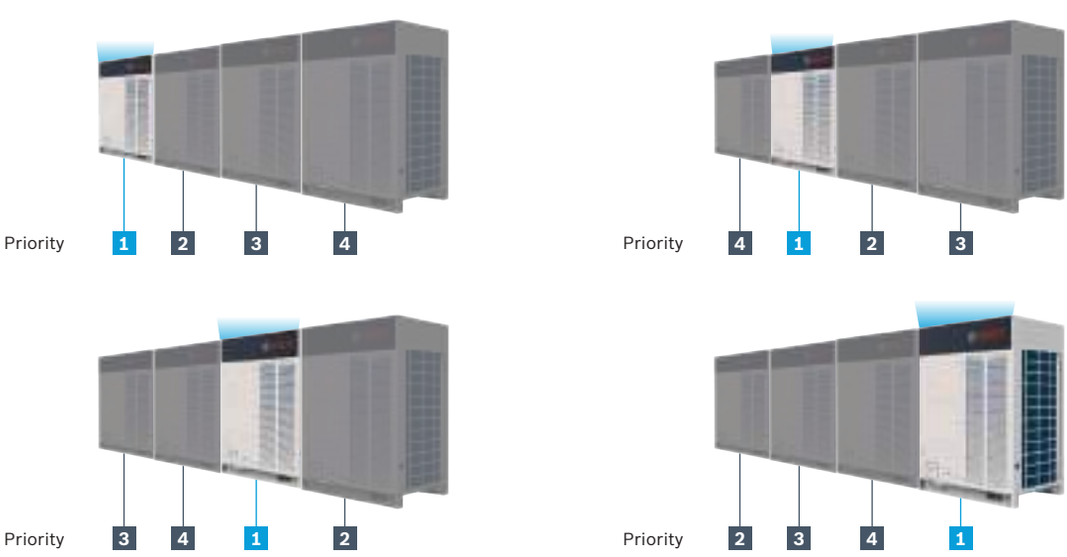
Multi solenoid valves control technology

Multi solenoid valves control technology in one system. All the solenoid valves equipped in the unit ensure temperature-control precisely, system running steadily and economic to provide a comfortable environment.



Cycle duty operation

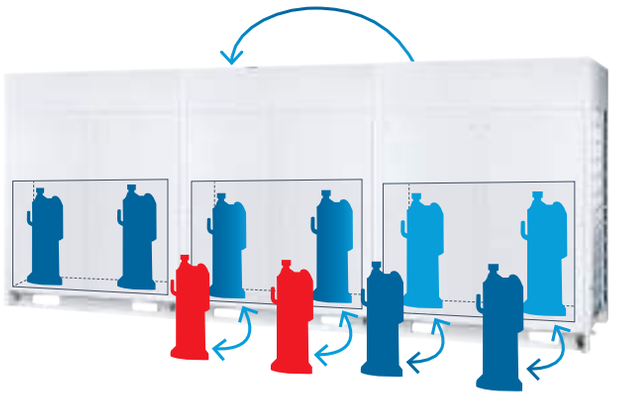
In one combination, any of the outdoor units can run as the master unit and master unit can cycle in a period, to realize the equal lifespan among the outdoor units. As a result the system lifespan extends significantly.



Backup operation

In a multiple system, if one module is failed, other modules can be backup instead of the failed one for continuing operation.

- Running state
- Stand by state
- Fault or stop state

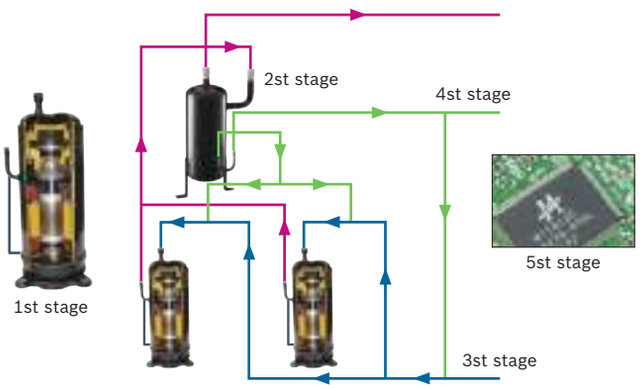


Start backup operation

Precise oil control technology

5 stage oil control technology ensures every outdoor unit & compressor's oil always keep in the safe level, completely solve the compressor oil lack problem.

1st stage: compressor internal oil separate
2nd stage: high efficiency oil separator (separation efficiency up to 99%)
3rd stage: oil balance technology between compressors
4th stage: oil balance technology between modules
5th stage: intelligent system oil return program



Anti corrosion treatment

Special anti corrosion treatment of the heat exchanger provides 5 to 6 times greater resistance against acid rain and salt corrosion.

The plastic grille protects against salt. All panel parts are corrosion resistant to protect against extreme ambient conditions.

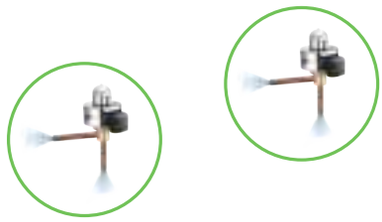
Corrosion resistant heat-exchanger fins.

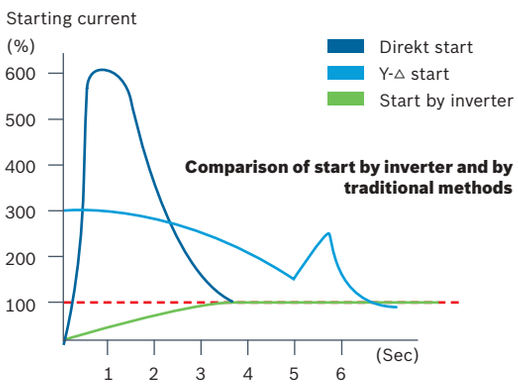
All screws are anti-rust.

All PCB parts in the unit are coated with double-sided moisture proof paint. The outer side of the control box metal cover is spray-painted.

Double EXV control technology

Double EXV Control Technology in one system, each EXV part achieves 480 pulse to adjust flow precisely. Ensure the temperature-control precisely and steadily to provide a comfortable environment.



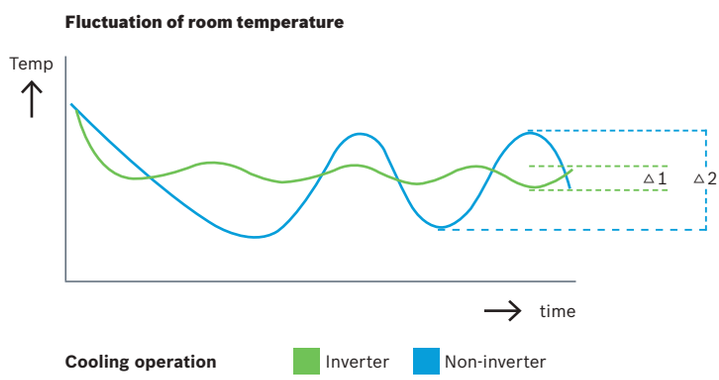


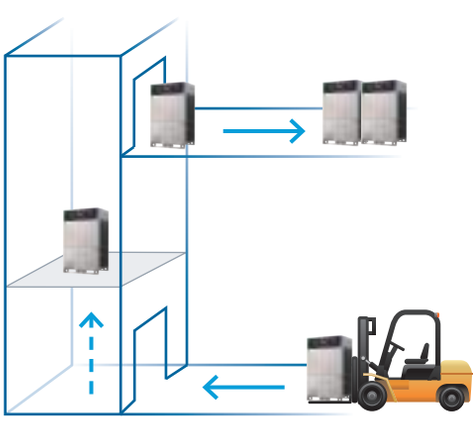
Intelligent soft start technology

DC inverter compressor soft start function reduces strike to the electric network. This kind of high-performance and low sound scroll compressor operates at a faster rate when starting, reducing start-up time. It also helps the unit to quickly adjust the room temperature to the set level.

Quick warm-up & cool-down design

By utilizing the benefits of the inverter compressor, the system can reach full load quickly and shorten the warm-up and cool-down times to provide an immediate and comfortable air solution.
Less temperature fluctuation will create a better living environment.





Compact design for effective use of space

Compact size and light weight design minimizes the installation footprint, reduces the installation floor load, and is easier for transportation. For some projects the units can even be transported through the elevator or forklift, reduce access problem at the jobsite.

SDCI Series

SDCI outdoor units achieve world's largest capacity of 72 HP with the industry's top class energy efficiency of cooling and heating. It supports an incredible piping length of 1,000 m and a longer level difference of 110 m, making it perfect for big-sized and high-rise buildings for wide application.

Recommended Combination Table

Model	No. of Outdoor Units	No. of Compressors	Outdoor Unit Combination						Maximum No. of Connectable Indoor Units	Capacity (kW)	
			8 HP	10 HP	12 HP	14 HP	16 HP	18 HP		Cooling	Heating
8 HP	1	1	1						13	25.2	27
10 HP	1	1		1					16	28	31.5
12 HP	1	2			1				20	33.5	37.5
14 HP	1	2				1			23	40	45
16 HP	1	2					1		26	45	50
18 HP	1	2						1	29	50	56
20 HP	2	2		2					33	56	63
22 HP	2	3		1	1				36	61.5	69
24 HP	2	3		1		1			39	68	76.5
26 HP	2	3		1			1		43	73	81.5
28 HP	2	3		1				1	46	78	87.5
30 HP	2	4				1	1		50	85	95
32 HP	2	4				1		1	53	90	101
34 HP	2	4					1	1	56	95	106
36 HP	2	4						2	59	100	112
38 HP	3	4		2				1	63	106	119
40 HP	3	5		1		1	1		64	113	126.5
42 HP	3	5				3			64	120	135
44 HP	3	5		1			1	1	64	123	137.5
46 HP	3	5		1				2	64	128	143.5
48 HP	3	6				1	1	1	64	135	151
50 HP	3	6				1		2	64	140	157
52 HP	3	6					1	2	64	145	162
54 HP	3	6						3	64	150	168
56 HP	4	6		2				2	64	156	175
58 HP	4	7		1		1	1	1	64	163	182.5
60 HP	4	7		1		1		2	64	168	188.5
62 HP	4	7		1			1	2	64	173	193.5
64 HP	4	7		1				3	64	178	199.5
66 HP	4	8				1	1	2	64	185	207
68 HP	4	8				1		3	64	190	213
70 HP	4	8					1	3	64	195	218
72 HP	4	8						4	64	200	224

Notes:
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/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 7.5 m, level difference is zero.
The above combination models are factory-recommended models.

Features

Wide Application Range

Wide range of outdoor units

The outdoor units capacity range from 8 HP up to 72 HP in 2 HP intervals. Maximum 64 indoor units with capacity up to 130% of total outdoor units can be connected in one refrigeration system.

8, 10 HP

12, 14, 16 HP

18 HP

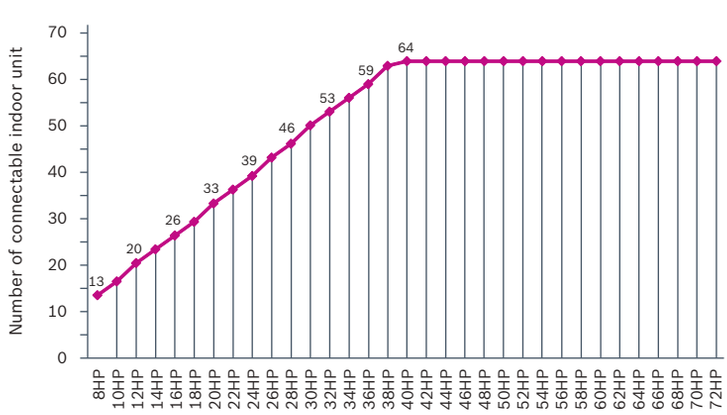
20, 22, 24, 26, 28, 30, 32, 34, 36 HP

38, 40, 42, 44, 46, 48, 50, 52, 54 HP

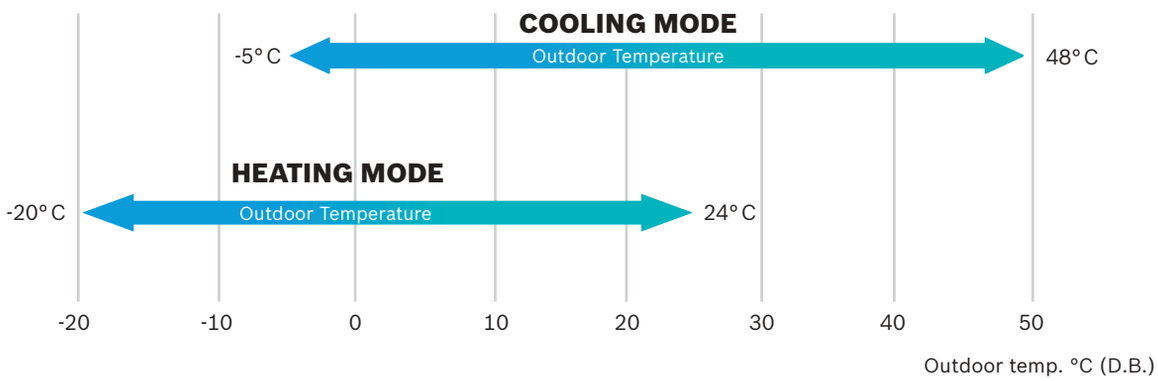
56, 58, 60, 62, 64, 66, 68, 70, 72 HP

Large connectable indoor units quantity

The large quantity of connectable units is suitable for large buildings and projects.



Wide operation range



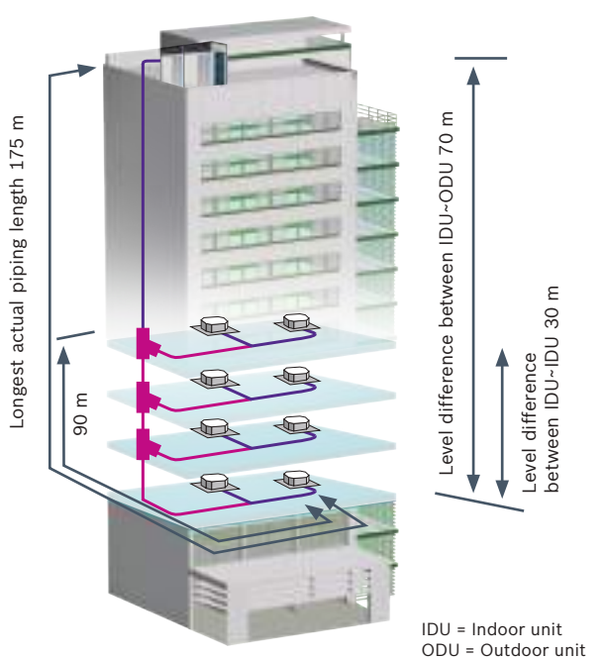
SDCI series system operates stably at extreme temperatures ranging from -20° C to 48° C.

Long piping length

Item			Permitted value (m)
Piping length	Total pipe length*(Actual)		1000*
	Maximum piping (L)	Actual length	175
		Equivalent length	200
	Equivalent piping length from the farthest IDU to the first indoor branch joint		40/90**
Level difference	Level difference between IDU~ODU	Outdoor unit up	70
		Outdoor unit down	110
	Level difference between IDU~IDU		30

* Total pipe length is equal to two times — pipe length plus — pipe length.

** When the piping length from the farthest IDU to the first indoor branch joint is more than 40 m, it needs to meet specific conditions according to the installation part of the technical manual to achieve 90 m.



IDU = Indoor unit
ODU = Outoor unit

High external static pressure

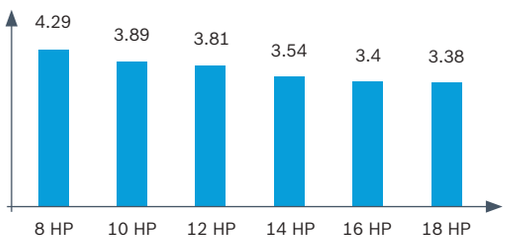
Maximum 60 Pa external static pressure can be customized for the outdoor unit, flexible to build-in installation. A standard 0 – 20 Pa external static pressure is equipped by default for all outdoor units. Outdoor units ESP can be customized at site (12 Pa is 60 HP, other models 40 Pa).

High Efficiency

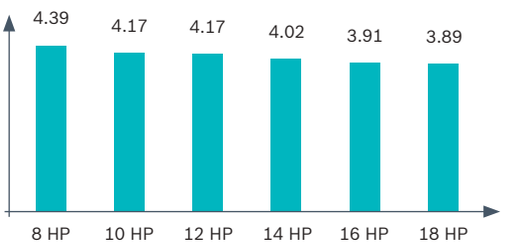
High COP/EER values

The cooling EER up to 4.29 and the heating COP up to 4.39 in the 8 HP category.

EER



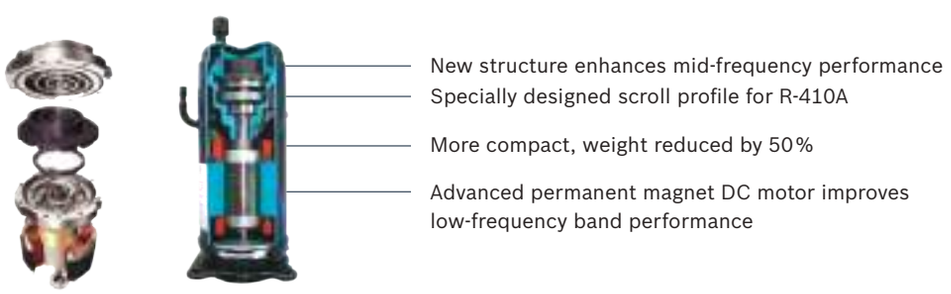
COP



All DC inverter technology

All DC inverter compressors

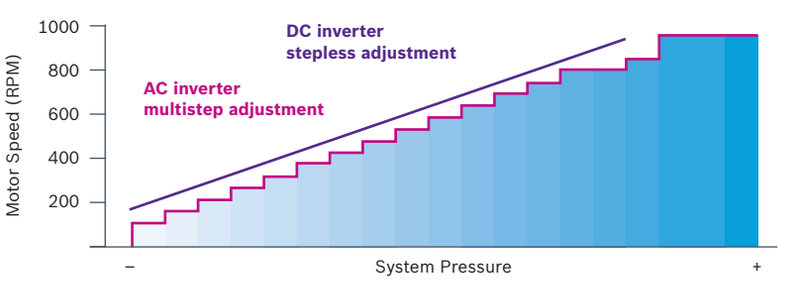
All DC inverter compressors make the capacity output better distributed, and always work at 60–140 Hz which is the most efficient range. It makes the efficiency more than 30% higher than the normal.



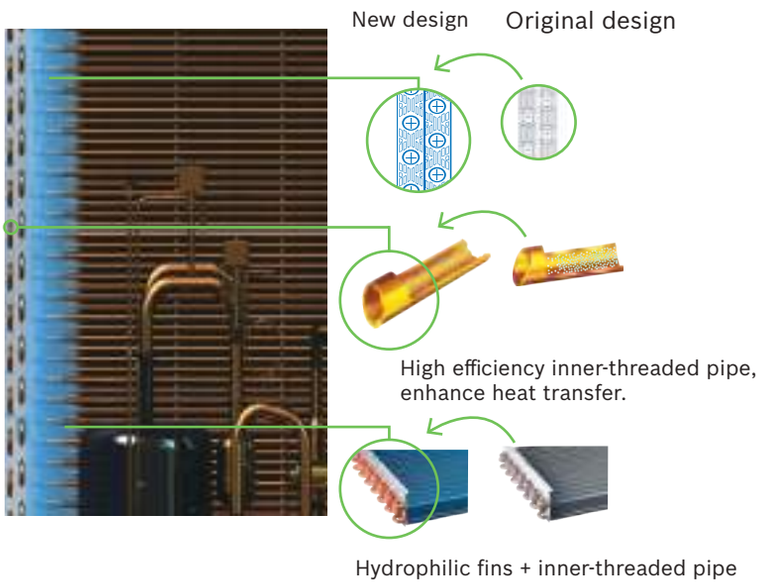
All DC fan motors

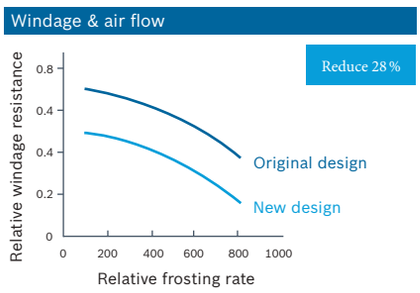
According to the running load and system pressure, the system controls the speed of DC fan to achieve the minimum energy consumption and best performance.

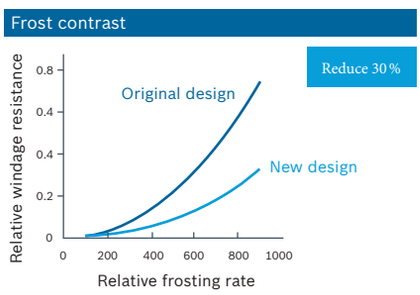
DC motor



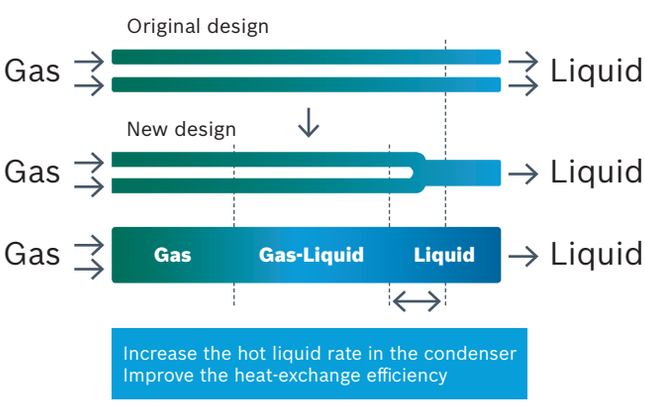
High performance heat exchanger

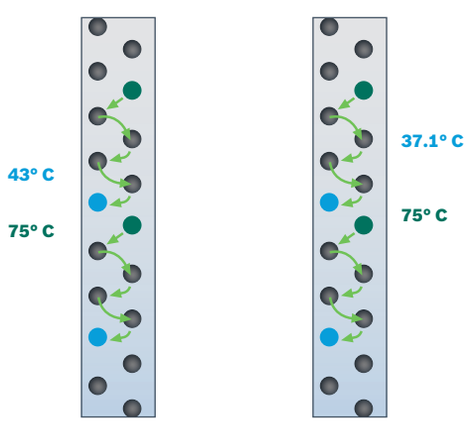






- The new designed window fins enlarge the heat-exchanging area, decrease the air resistance, save more power and enhance heat exchange performance.
- Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency.





- Innovative designed high efficiency heat exchanger, which can reach up to 12° C subcooling degree, reduces the system resistance and improves reliability.
- When the outdoor temperature is 35° C, the refrigerant can be cooled down to 37.1° C, thus achieving high heat-exchanging efficiency with only 2.1° C temperature difference.

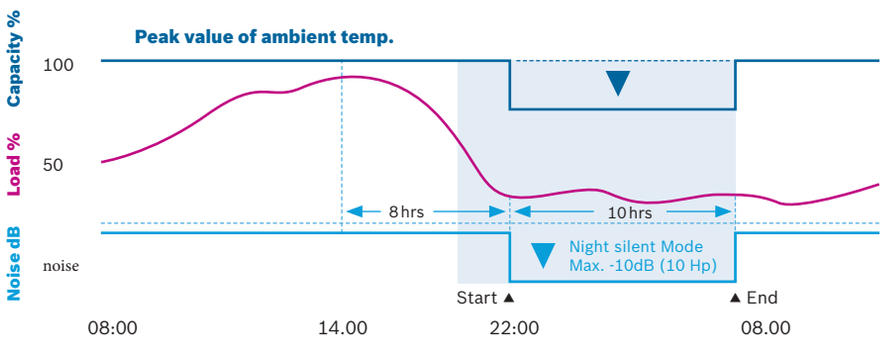
High Comfort

Night silent operation mode

High comfort outdoor unit's multi-choice of silent mode during the night. Super silent operation mode can reduce sound level further, minimum 45 dB(A).

Night silent operation will be activated X hours after the peak temperature during daytime, and it will go back to normal operation after Y hours.

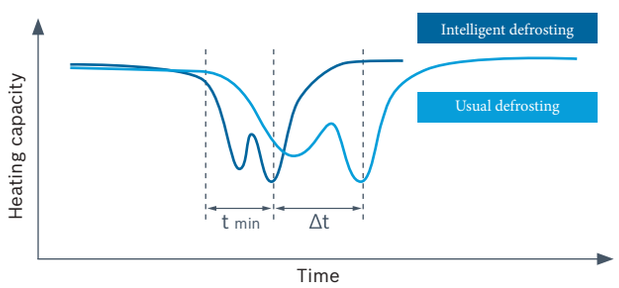
- Model 1 → X: 6 hours, Y: 10 hours
- Model 2 → X: 8 hours, Y: 10 hours
- Model 3 → X: 6 hours, Y: 12 hours
- Model 4 → X: 8 hours, Y: 8 hours



Notes:
This function can be activated by setting at site. Temperature (load) curve shown in the graph is just an example.

Intelligent defrosting technology

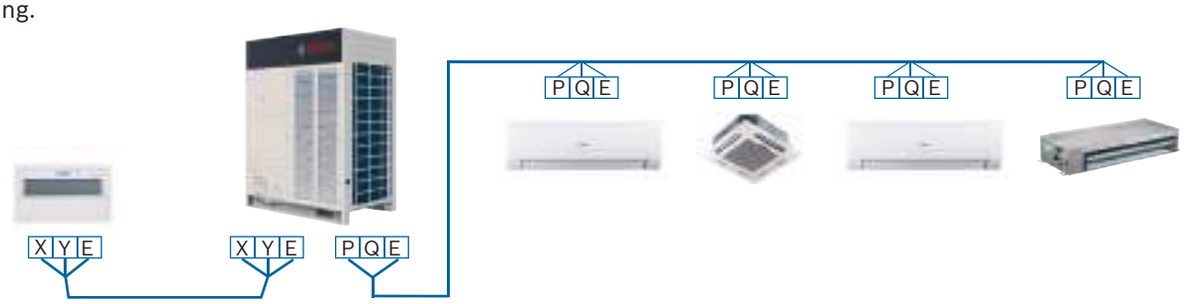
Intelligent defrosting program will judge the defrosting time according to the system real requirement, reduce the heating loss by unnecessary defrosting and make the indoor side more comfortable.
Defrosting time can be shortened to 4 min. due to the specialized defrosting valve.



Easy Installation and Service

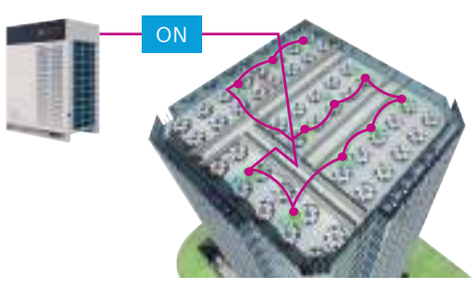
Simple signal line connection

Centralised controllers can be connected from indoor side or outdoor side (XYE terminals) at will. Only one group of communication wire of PQE, achieved both of communication for indoor & outdoor unit. It's more convenient for communication wiring.



Auto addressing

Outdoor unit can distribute address for each indoor unit automatically. Wireless and wired controllers can enquire and modify each indoor unit's address.



Outdoor Unit

Specifications

SDCI Series

Model			SDCI 8/25-3	SDCI 10/28-3	SDCI 12/33-3
Power supply		V/Ph/Hz	380-415/3/50		
Cooling	Capacity	kW	25.2	28.0	33.5
	Power input	kW	5.88	7.05	8.79
	EER	kW/kW	4.29	3.89	3.81
Heating	Capacity	kW	27	31.5	37.5
	Power input	kW	6.15	7.55	8.99
	COP	kW/kW	4.39	4.17	4.17
Connectable indoor unit	Total capacity	%	50–130	50–130	50–130
	Max. quantity		13	16	20
Sound pressure level		dB(A)	57	57	59
Pipe connections	Liquid pipe	mm	Φ9.53	Φ9.53	Φ12.7
	Gas pipe	mm	Φ22.2	Φ22.2	Φ25.4
	Oil balance pipe	mm	Φ6	Φ6	Φ6
Fan motor	Type		DC	DC	DC
	Quantity		1	1	2
	Air flow rate	m^3/h	11,242	11,242	13,000
	Motor output	W	750	750	560+380
	ESP	Pa	0–20 (default)	0–20 (default)	0–20 (default)
		Pa	20–40 (customized)	20–40 (customized)	20–60 (customized)
DC inverter compressor	Quantity		1	1	2
	Capacity	kW	31.59	31.59	31.59+11.80
	Crankcase heater	W	27.6×2	27.6×2	27.6×4
	Oil type		FVC68D	FVC68D	FVC68D
	Oil charge	ml	500	500	500+500
Refrigerant	Type		R-410A	R-410A	R-410A
	Factory charging	kg	15	15	17
Design pressure (High/Low)		MPa	4.4/2.6	4.4/2.6	4.4/2.6
Net dimension (W×H×D)		mm	960×1,615×765	960×1,615×765	1,250×1,615×765
Packing size (W×H×D)		mm	1,025×1,790×830	1,025×1,790×830	1,305×1,790×820
Net weight		kg	212	212	288
Gross weight		kg	227	227	308
Operating temperature range	Cooling	°C	-5 – 48	-5 – 48	-5 – 48
	Heating	°C	-20 – 24	-20 – 24	-20 – 24
Data related to EU F-gas Regulation 517/2014					
Environmental impact			Contains fluorinated greenhouse gases		
Refrigerant type			R-410A	R-410A	R-410A
Global warming potential		kgCO2-eq	2088	2088	2088
Amount of refrigerant		kg	15.000	15.000	16.000
Amount of refrigerant		tCO2-eq	31.320	31.320	33.408

Notes:
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/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 7.5 m, level difference is zero.
Connection piping diameter is based on the condition that the total equivalent liquid length is less than 90 m.
When the total equivalent liquid length is more than 90 m, please refer to technical manual to choose the connection piping diameter.
Sound values are measured in a semi-anechoic room, at a position 1 m in front of the unit and 1.3 m above the floor.

Outdoor Unit

Specifications

SDCI Series

Model			SDCI 14/40-3	SDCI 16/45-3	SDCI 18/50-3
Power supply		V/Ph/Hz	380-415/3/50		
Cooling	Capacity	kW	40.0	45.0	50.0
	Power input	kW	11.30	13.25	14.79
	EER	kW/kW	3.54	3.40	3.38
Heating	Capacity	kW	45.0	50.0	56.0
	Power Input	kW	11.19	12.79	14.40
	COP	kW/kW	4.02	3.91	3.89
Connectable indoor unit	Total capacity	%	50–130	50–130	50–130
	Max. quantity		23	26	29
Sound pressure level		dB(A)	61	62	62
Pipe connections	Liquid pipe	mm	Φ12.7	Φ12.7	Φ15.9
	Gas pipe	mm	Φ25.4	Φ28.6	Φ28.6
	Oil balance pipe	mm	Φ6	Φ6	Φ6
Fan motor	Type		DC	DC	DC
	Quantity		2	2	2
	Air flow rate	m^3/h	15,620	15,620	15,620
	Motor output	W	560+380	560+380	560+380
	ESP	Pa	0–20 (default)	0–20 (default)	0–20 (default)
		Pa	20–40 (customized)	20–40 (customized)	20–40 (customized)
DC inverter compressor	Quantity		2	2	2
	Capacity	kW	31.59+11.80	31.59+11.80	31.59+11.80
	Crankcase heater	W	27.6×4	27.6×4	27.6×4
	Oil type		FVC68D	FVC68D	FVC68D
	Oil charge	ml	500+500	500+500	500+500
Refrigerant	Type		R-410A	R-410A	R-410A
	Factory charging	kg	15	15	16
Design pressure (High/Low)		MPa	4.4/2.6	4.4/2.6	4.4/2.6
Net dimension (W×H×D)		mm	1,250×1,615×765	1,250×1,615×765	1,250×1,615×765
Packing size (W×H×D)		mm	1,305×1,790×820	1,305×1,790×820	1,305×1,790×820
Net weight		kg	288	288	310
Gross weight		kg	308	308	330
Operating temperature range	Cooling	°C	-5 – 48	-5 – 48	-5 – 48
	Heating	°C	-20 – 24	-20 – 24	-20 – 24
Data related to EU F-gas Regulation 517/2014					
Environmental impact			Contains fluorinated greenhouse gases		
Refrigerant type			R-410A	R-410A	R-410A
Global warming potential		kgCO2-eq	2088	2088	2088
Amount of refrigerant		kg	15.000	15.000	16.000
Amount of refrigerant		tCO2-eq	31.320	31.320	33.408

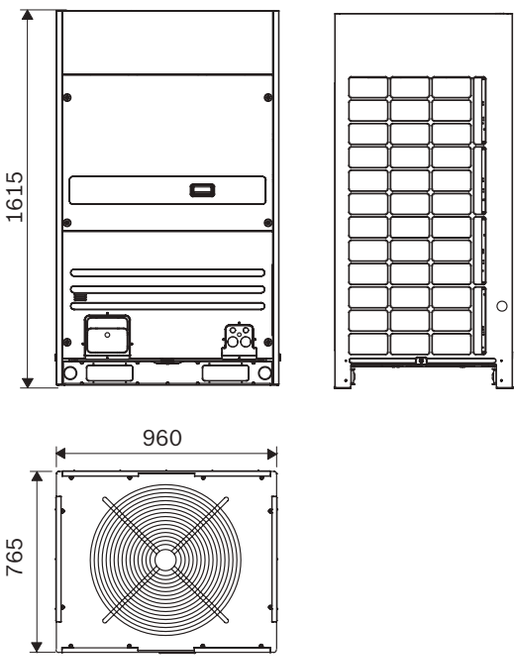
Notes:
Capacities are based on the following conditions:
Cooling: Indoor temperature 27° C DB/19° C WB; Outdoor temperature 35° C DB/24° C WB.
Heating: Indoor temperature 20° C DB/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 7.5 m, level difference is zero.
Connection piping diameter is based on the condition that the total equivalent liquid length is less than 90 m.
When the total equivalent liquid length is more than 90 m, please refer to technical manual to choose the connection piping diameter.
Sound values are measured in a semi-anechoic room, at a position 1 m in front of the unit and 1.3 m above the floor.

Dimensions

Body dimension

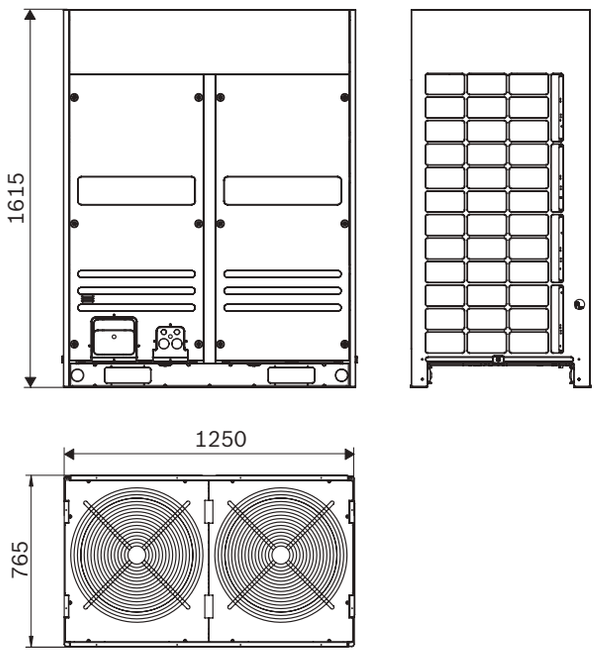
8, 10 HP

Unit: mm



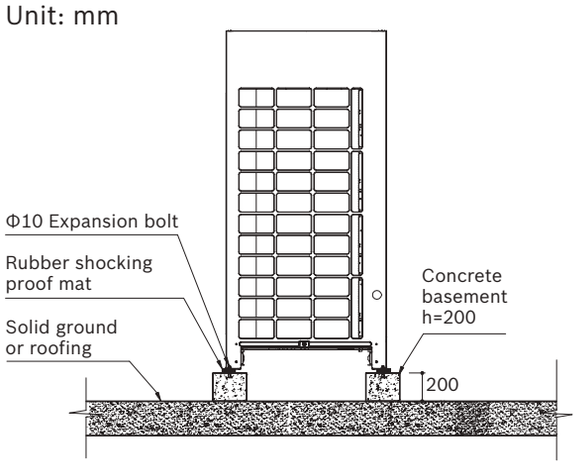
12, 14, 16, 18 HP

Unit: mm

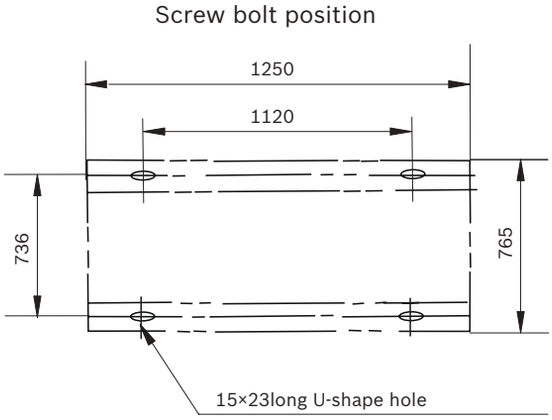


Installation dimension

Unit: mm



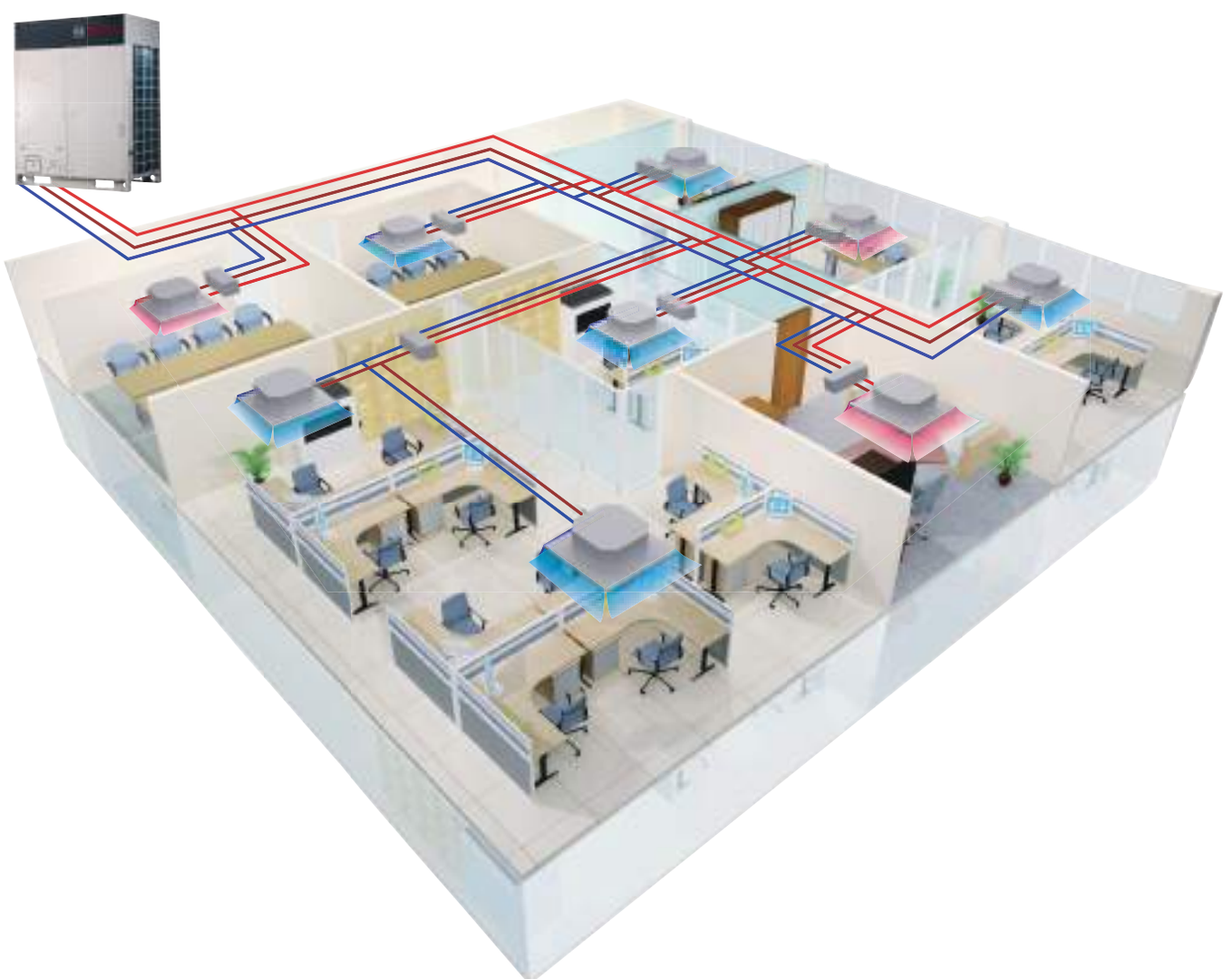
Screw bolt position



RDCI Series

The all DC inverter heat recovery series, which offers simultaneous cooling and heating operation in one system. The energy by-product from cooling or heating is transferred to where it is required by using the balanced heat exchanger function, which saves up to 50 % in costs compared with a conventional 2-pipe VRF system.

Offers simultaneous cooling and heating operation in one system



Recommended Combination Table

Model	No. of Outdoor Units	No. of Compressors	Outdoor Unit Combination					Maximum No. of Connectable Indoor Units	Capacity (kW)	
			8 HP	10 HP	12 HP	14 HP	16 HP		Cooling	Heating
8 HP	1	1	1					13	25.2	27
10 HP	1	1		1				16	28	31.5
12 HP	1	1			1			20	33.5	37.5
14 HP	1	2				1		23	40	45
16 HP	1	2					1	26	45	50
18 HP	2	2	1	1				29	53.2	58.5
20 HP	2	2		2				33	56	63
22 HP	2	2		1	1			36	61.5	69
24 HP	2	3		1		1		39	68	76.5
26 HP	2	3		1			1	43	73	81.5
28 HP	2	4				2		46	80	90
30 HP	2	4				1	1	50	85	95
32 HP	2	4					2	53	90	100
34 HP	3	4		2		1		56	96	108
36 HP	3	4		2			1	59	101	113
38 HP	3	4		1	1		1	63	106.5	119
40 HP	3	5		1		1	1	64	113	126.5
42 HP	3	6				3		64	120	135
44 HP	3	6				2	1	64	125	140
46 HP	3	6				1	2	64	130	145
48 HP	3	6					3	64	135	150
50 HP	4	6	1	1			2	64	143.2	158.5
52 HP	4	6		2			2	64	146	163
54 HP	4	6		1	1		2	64	151.5	169
56 HP	4	7		1		1	2	64	158	176.5
58 HP	4	8				3	1	64	165	185
60 HP	4	8				2	2	64	170	190
62 HP	4	8				1	3	64	175	195
64 HP	4	8					4	64	180	200

Notes:
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/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 7.5 m, level difference is zero.
The above combination models are factory-recommended models.

Features

Wide Application Range

Wide range of outdoor units

The outdoor units' capacity range from 8 HP up to 64 HP in 2 HP increasement. Maximum 64 indoor units with capacity up to 130% of total outdoor units can be connected as one refrigeration system.

8, 10, 12, 14, 16 HP

18 – 32 HP

34 – 48 HP

50 – 64 HP

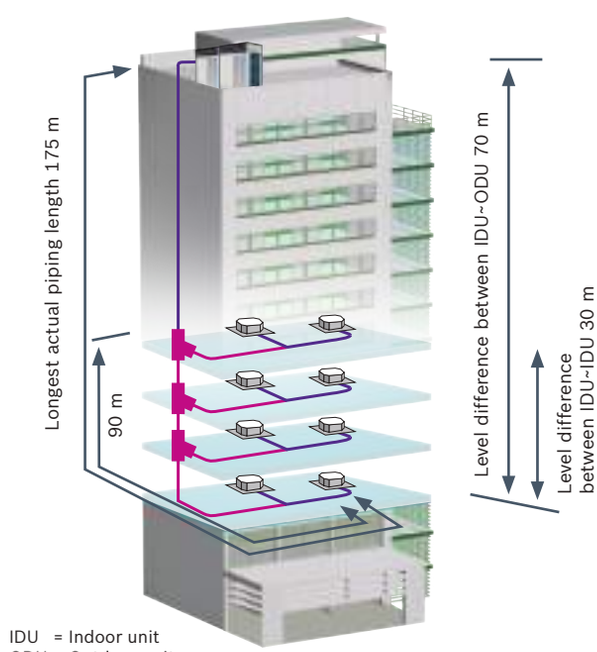
Long piping length

The solution supports an incredible piping length of 1,000 m and level difference of 110 m, making it perfect for large projects.

Item			Permitted value (m)
Piping length	Actual total piping length		1000*
	Longest piping	Actual length	175
		Equivalent length	200
	Equivalent piping length from the farthest IDU to the first indoor branch joint		40/90**
	Equivalent piping length from SBOX to its downstream indoor unit		40
Level difference	Level difference between indoor and outdoor units	Outdoor unit up	70
		Outdoor unit down	110
	Level difference between indoor units		30

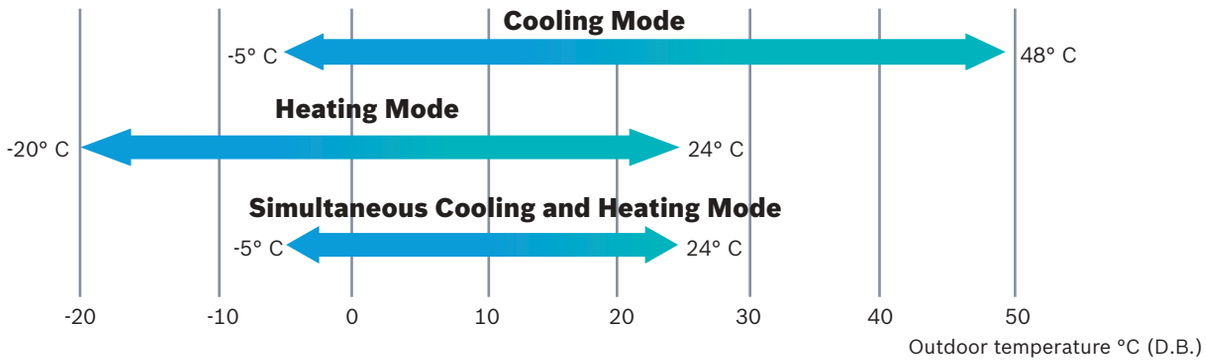
* Total pipe length is equal to two times — pipe length plus — pipe length.

** When the piping length from the farthest IDU to the first indoor branch joint is more than 40 m, it needs to meet specific conditions according to the installation part of the technical manual to achieve 90 m.



IDU = Indoor unit
ODU = Outdoor unit

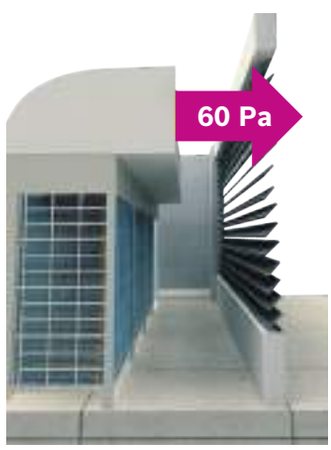
Wide operation temperature range



RDCI series system operates stable at extreme temperatures ranging from -20° C to 48° C.

High external static pressure

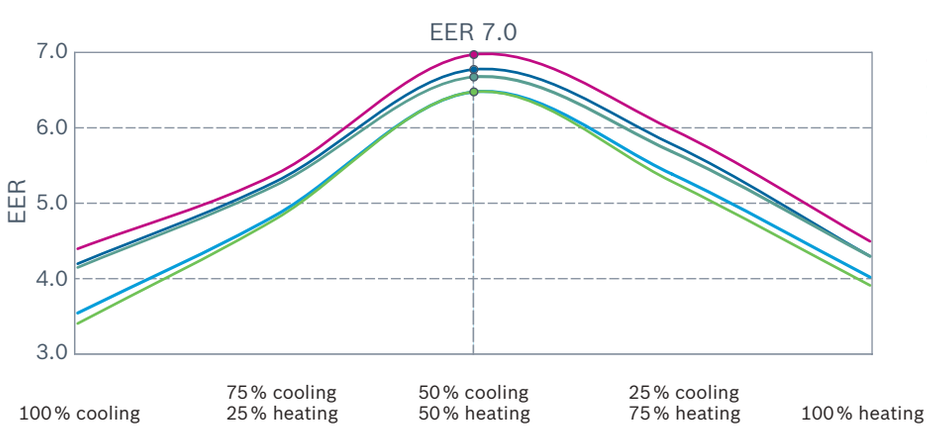
Maximum 60 Pa external static pressure can be customized for the outdoor unit, flexible to build-in installation. A standard 0 – 20 Pa external static pressure is equipped by default for all outdoor units. 20 – 40 Pa external static pressure can be customized for 14, 16 HP outdoor units, and 20 – 60 Pa can be customized for 8, 10, 12 HP outdoor unit.



High Efficiency

High EER

Heat recovery is achieved by diverting exhaust heat from indoor units in cooling mode to areas requiring heating, maximising energy efficiency, reducing electricity costs and leading to high partload efficiencies (up to 7.0 in the 8 HP category).

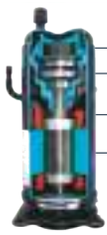


EER in simultaneous cooling and heating mode are based on the following condition: Outdoor temperature 7° C DB/6° C WB, indoor temperature 27° C DB/19° C WB for cooling, indoor temperature 20° C DB for heating.

All DC inverter technology

All DC inverter compressors

All DC inverter compressors make the capacity output better distributed, and always work at 60–140 Hz which is the most efficient range. It makes the efficiency more than 30% higher than the normal.

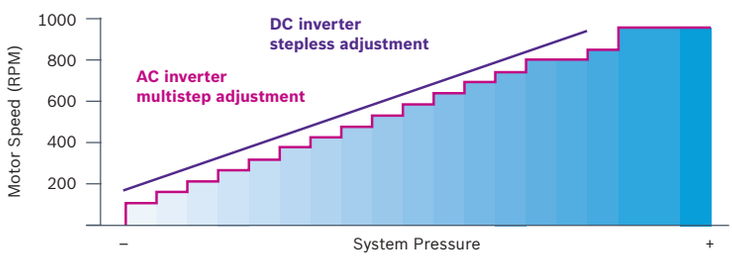


- New structure enhances mid-frequency performance
- Specially designed scroll profile for R-410A
- More compact, weight reduced by 50%
- Advanced permanent magnet DC motor improves the low frequency band performance

All DC fan motors

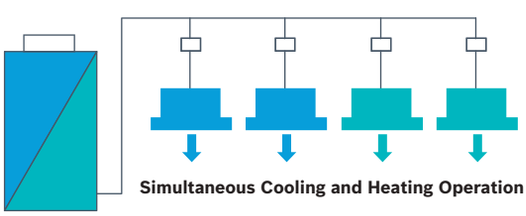
According to the running load and system pressure, the system controls the speed of DC fan to achieve the minimum energy consumption and best performance.

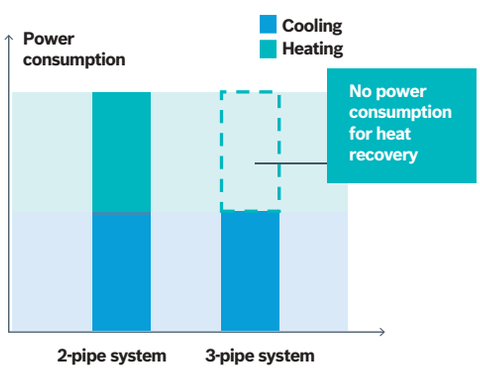
DC motor



Heat recovery, more efficiency

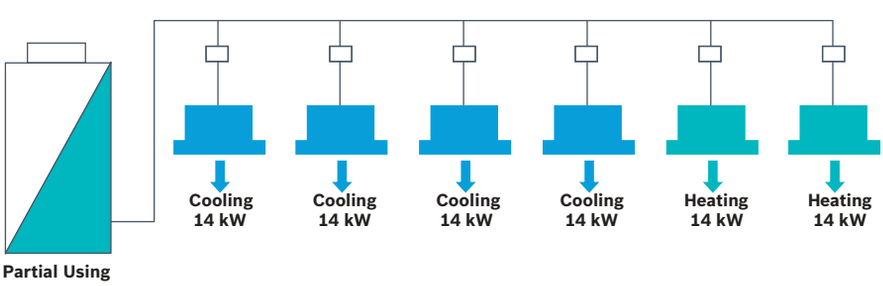
Simultaneous heating and cooling in different zones, more energy saving by heat recovery from one space to another which saves up to 50% in costs compared with a conventional heat pump system.





Heating capacity automatic adjustment

Two parts condenser individual design, the unit can distribute a part of evaporator to be as condensing area according to the heating load requirement to improve the utilization rate of the condenser.



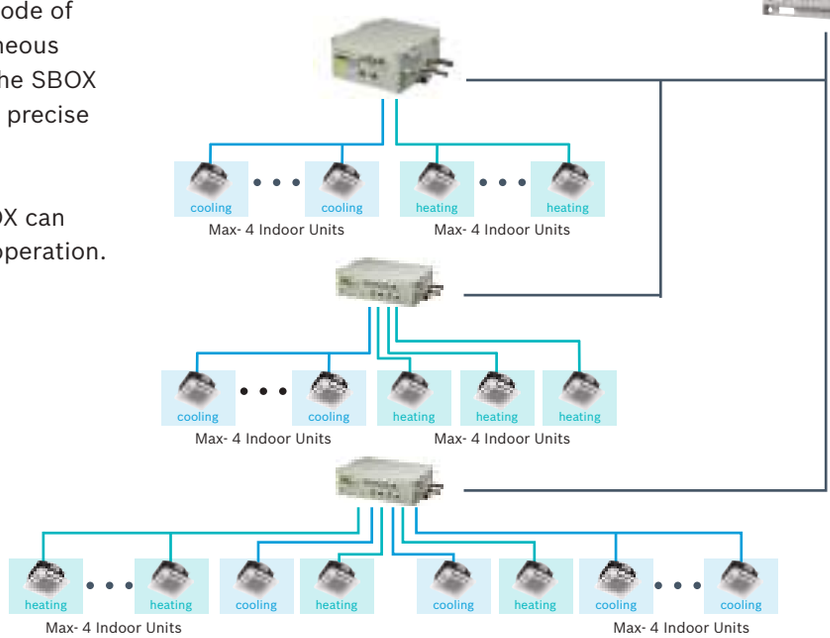
High Comfort

Cooling and heating simultaneously

Simultaneous cooling and heating achieved by new designed SBOX equipment.

The outdoor unit controls the operation mode of each group indoor unit to achieve simultaneous heating and cooling in one system under the SBOX equipment which adopts solenoid valve to precise control refrigerant flow rate.

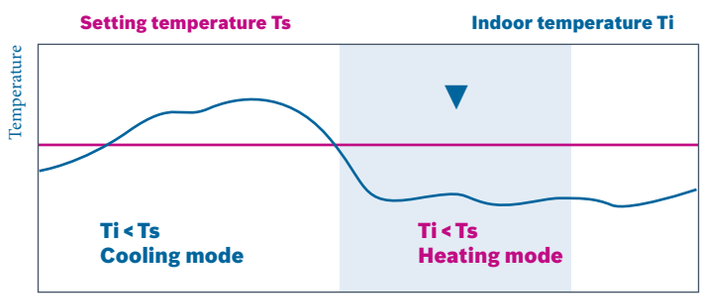
The indoor units connect to the same SBOX can realize simultaneous cooling and heating operation.



Auto mode control

In this mode, the indoor unit can change the operation mode, to control the indoor side temperature at a constant temperature demanded.

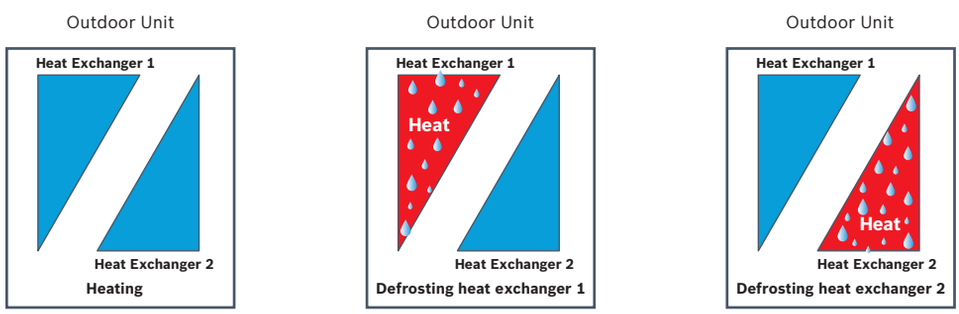
Unit change to cooling mode at daytime, when indoor temperature is higher than setting temperature, and change to heating mode at nighttime, when indoor temperature is lower than setting temp.



Mode change automatically

Continuous heating during defrost operation

Each heat exchanger is defrosted by using heat transferred from one heat exchanger to the other in the outdoor unit. Defrost has no impact on the indoor unit on heating mode.



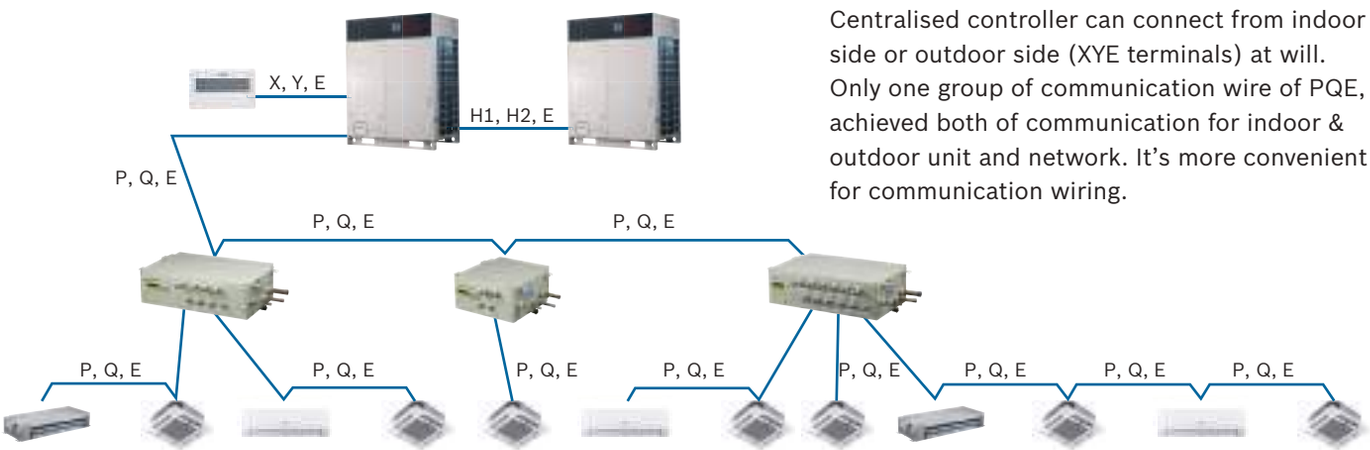
Easy Installation and Service

Remote addressing

Addressing indoor units are able to be done just by pressing the button of the controller. No need to set the address by the DIP switch one by one. Wired controller and wireless controller can enquire and modify every indoor units address.

Remote addressing

Simple communication wiring

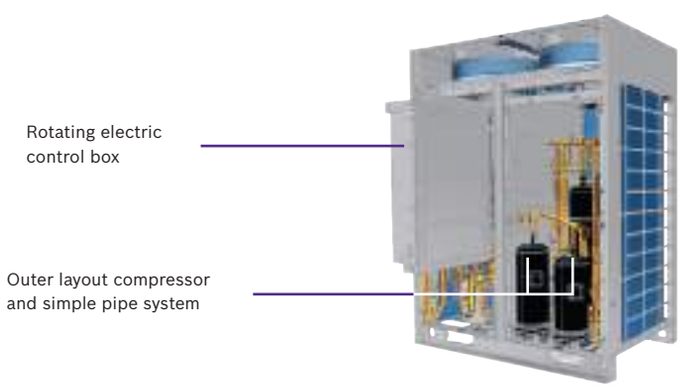


Centralised controller can connect from indoor side or outdoor side (XYE terminals) at will. Only one group of communication wire of PQE, achieved both of communication for indoor & outdoor unit and network. It's more convenient for communication wiring.

Professional structure design for easy maintainence

The check window reserved on electric control box provides a convenient spot checking and status enquiry. With the 4 bits digital tube LED display, it is very convenient to show the data of the system, such as pressure, compressor frequency, error code, discharge temperature etc., which can make the maintenance, installation and commissioning easier.

Compressor is near the outside, and there is simple pipe system for convenient maintenance. The newly designed rotating control box is so excellent that it can rotate in a wide angle. It is convenient for the inspection and maintenance of the pipeline system and greatly reduced the time of dismount the electric control box.



Outdoor Unit

Specifications

RDCI Series

Model			RDCI 8/25-3	RDCI 10/28-3	RDCI 12/33-3	RDCI 14/40-3	RDCI 16/45-3
Power supply		V/Ph/Hz	380-415/3/50				
Cooling	Capacity	kW	25.2	28.0	33.5	40.0	45.0
	Power input	kW	5.73	6.67	8.07	11.30	13.24
	EER	kW/kW	4.40	4.20	4.15	3.54	3.40
Heating	Capacity	kW	27.0	31.5	37.5	45.0	50.0
	Power input	kW	6.00	7.33	8.72	11.19	12.79
	COP	kW/kW	4.50	4.30	4.30	4.02	3.91
Connectable indoor unit	Total capacity	%	50 – 130	50 – 130	50 – 130	50 – 130	50 – 130
	Max. quantity		13	16	20	23	26
Sound pressure level		dB(A)	57	57	58	60	60
Pipe connections	Liquid pipe	mm	Φ9.53	Φ12.7	Φ12.7	Φ15.9	Φ15.9
	Low pressure gas pipe	mm	Φ22.2	Φ22.2	Φ25.4	Φ28.6	Φ28.6
	High pressure gas pipe	mm	Φ19.1	Φ19.1	Φ19.1	Φ22.2	Φ22.2
	High pressure gas balance pipe	mm	Φ19.1	Φ19.1	Φ19.1	Φ19.1	Φ19.1
	Oil balance pipe	mm	Φ6	Φ6	Φ6	Φ6	Φ6
Fan motor	Type		DC	DC	DC	DC	DC
	Quantity		2	2	2	2	2
	Air flow rate	m^3/h	12,000	12,000	13,000	15,000	15,000
	Motor output	W	420	420	420	750	750
	ESP	Pa	0 – 20 (default)	0 – 20 (default)	0 – 20 (default)	0 – 20 (default)	0 – 20 (default)
		Pa	20 – 60 (customized)	20 – 60 (customized)	20 – 60 (customized)	20 – 40 (customized)	20 – 40 (customized)
DC inverter compressor	Quantity		1	1	1	2	2
	Capacity	kW	31.59	31.59	31.59	31.59+11.80	31.59+11.80
	Crankcase heater	W	30×2	30×2	30×2	30×4	30×4
	Oil type		FVC68D	FVC68D	FVC68D	FVC68D	FVC68D
	Oil charge	ml	500	500	500	500+500	500+500
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	10	10	10	13	13
Design pressure (High/Low)		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
Net dimension (W×H×D)		mm	1,250×1,615 ×765	1,250×1,615 ×765	1,250×1,615 ×765	1,250×1,615 ×765	1,250×1,615 ×765
Packing size (W×H×D)		mm	1,305×1,790 ×820	1,305×1,790 ×820	1,305×1,790 ×820	1,305×1,790 ×820	1,305×1,790 ×820
Net weight		kg	255	255	255	303	303
Gross weight		kg	273	273	273	322	322
Operating temperature range	Cooling	°C	-5 – 48	-5 – 48	-5 – 48	-5 – 48	-5 – 48
	Heating	°C	-20 – 24	-20 – 24	-20 – 24	-20 – 24	-20 – 24
	Simultaneous cooling and heating	°C	-5 – 24	-5 – 24	-5 – 24	-5 – 24	-5 – 24
Data related to EU F-gas Regulation 517/2014							
Environmental impact			Contains fluorinated greenhouse gases				
Refrigerant type			R-410A	R-410A	R-410A	R-410A	R-410A
Global warming potential		kgCO2-eq	2088	2088	2088	2088	2088
Amount of refrigerant		kg	10.000	10.000	10.000	13.000	13.000
Amount of refrigerant		tCO2-eq	20.880	20.880	20.880	27.144	27.144

Notes:
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/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 7.5 m, level difference is zero.
Connection piping diameter is based on the condition that the total equivalent liquid length is less than 90 m.
When the total equivalent liquid length is more than 90 m, please refer to technical manual to choose the connection piping diameter.
Sound values are measured in a semi-anechoic room, at a position 1 m in front of the unit and 1.3 m above the floor.

SBOX

Specifications

SBOX Unit which can be connected multiple indoor units

Model				SBOX01-1	SBOX02-1	SBOX04-1	SBOX06-1
Max. indoor unit groups				1	2	4	6
Max. number of each group indoor units				4	4	4	4
Max. number of all downstream indoor units				4×1=4	4×2=8	4×4=16	4×6=24
Max. capacity of each group indoor units			kW	16	16	16	16
Total capacity of all downstream indoor units			kW	≤16	≤28	≤45	≤45
Piping connections	Connect to outdoor unit	Liquid pipe	mm	Φ9.53	Φ12.7	Φ15.9	Φ15.9
		High pressure gas pipe	mm	Φ15.9	Φ19.1	Φ22.2	Φ22.2
		Low pressure gas pipe	mm	Φ19.1	Φ25.4	Φ31.8	Φ31.8
	Connect to indoor unit	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53	Φ9.53
		Gas pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9
Sound pressure level			dB(A)	33	33	33	40
Net dimension (W×H×D)			mm	630×225×600	630×225×600	960×225×600	960×225×600
Packing size (W×H×D)			mm	725×325×685	725×325×685	1055×325×685	1055×325×685
Net weight			kg	18	19.5	31	35
Gross weight			kg	25	27	40	44.5

SBOX Unit which can be connected only one indoor unit

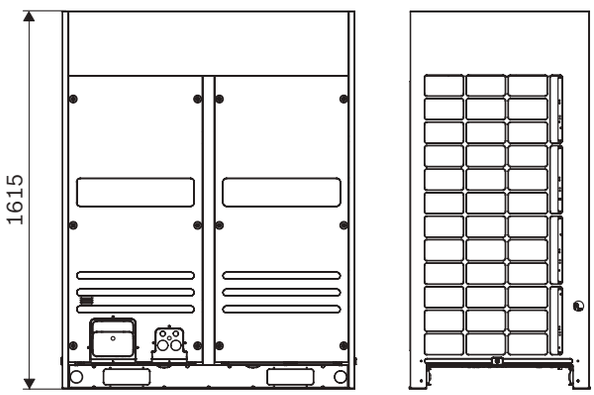
Model				SBOX02E-1	SBOX04E-1
Max. number of all downstream indoor units				1	1
Capacity of downstream indoor unit			kW	20~28	40~56
Piping connections	Connect to outdoor unit	Liquid pipe	mm	Φ12.7	Φ15.9
		High pressure gas pipe	mm	Φ19.1	Φ22.2
		Low pressure gas pipe	mm	Φ25.4	Φ31.8
	Connect to indoor unit	Liquid pipe	mm	Φ9.53	Φ9.53
		Gas pipe	mm	Φ15.9	Φ15.9
Sound pressure level			dB(A)	33	33
Net dimension (W×H×D)			mm	630×225×600	960×225×600
Packing size (W×H×D)			mm	725×325×685	1055×325×685
Net weight			kg	19.5	31
Gross weight			kg	27	40

Notes:
Sound values are measured in a semi-anechoic room, at a position 1 m below the SBOX in mode switch condition.
It is not recommended to install in the place where high noise performance is required.

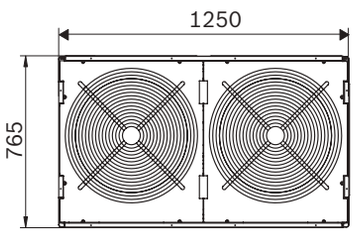
Dimensions

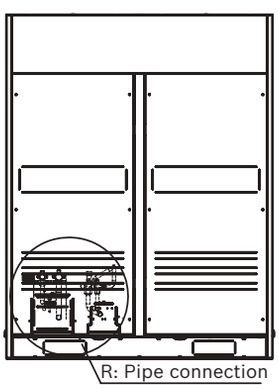
Body dimension

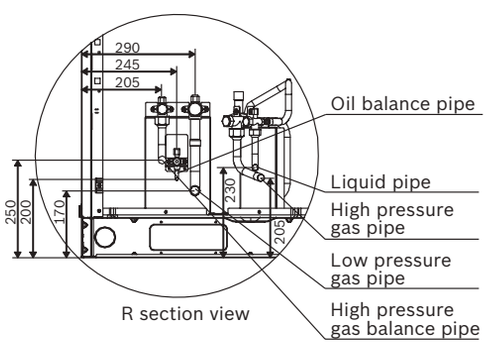
Unit: mm



Piping	HP 8/10	HP 12	HP 14/16
Liquid pipe	Φ12.7	Φ12.7	Φ15.9
Low pressure gas pipe	Φ22.2	Φ25.4	Φ28.6
High pressure gas pipe	Φ19.1	Φ19.1	Φ22.2
High pressure gas balance pipe	Φ19.1	Φ19.1	Φ19.1
Oil balance pipe	Φ6	Φ6	Φ6

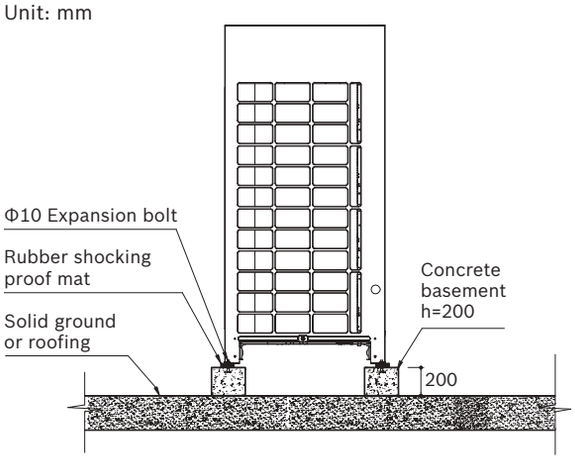




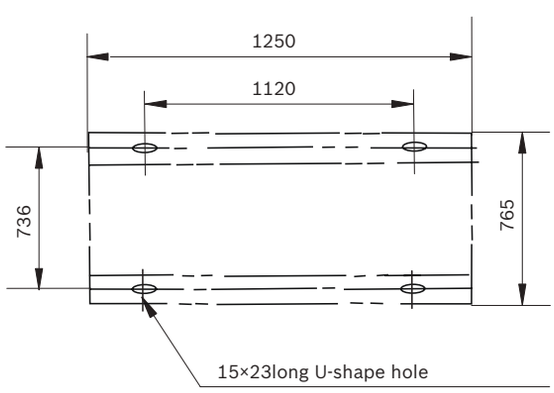


Installation dimension

Unit: mm



Screw bolt position



MDCI Series

Full DC Inverter Mini VRF with DC inverter compressor and DC fan motor delivers a highly efficient solution for small commercial buildings. Four to twelve rooms require only one outdoor unit, and individual control is enabled in each room.

R-410A

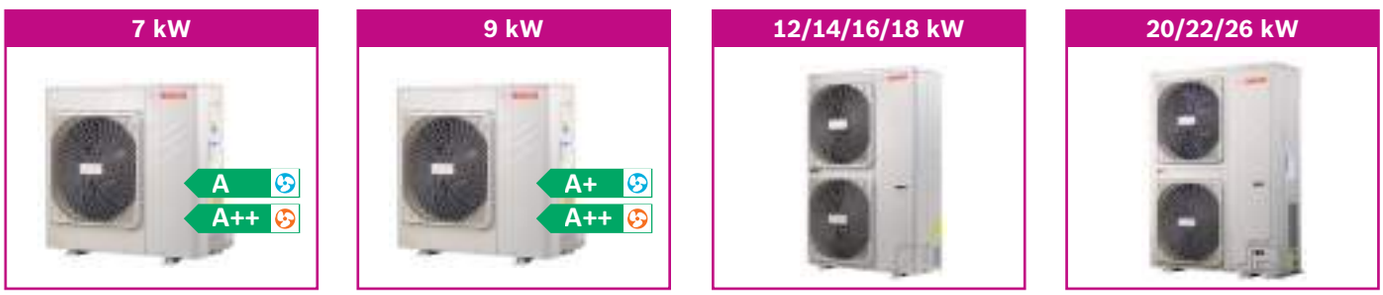
DC Inverter

Features

Wide Application Range

Wide range of outdoor units

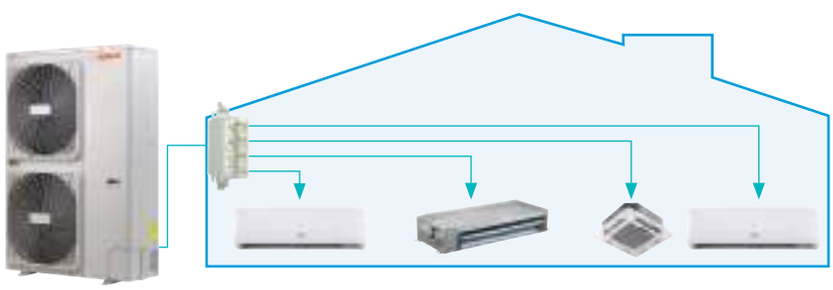
The outdoor units capacity range from 7 kW to 26 kW which is ideal for small offices, villas, apartments and shops, making it perfect for commercial and residential application.



Flexible indoor units connection

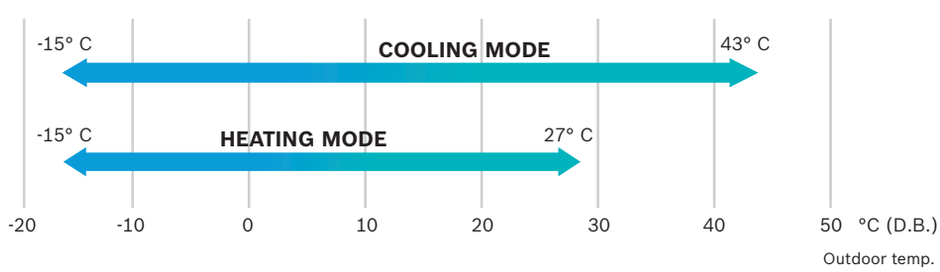
Mini VRF with intelligent control gives you independent zoning control with maximum flexibility. A single outdoor unit supports up to twelve indoor units, freeing up considerable space outside. Use your backyard more wisely with much more space available created by less number of outdoor units.

- Max. 12 indoor units for a 26 kW outdoor unit installation
- Max. 11 indoor units for a 22 kW outdoor unit installation
- Max. 10 indoor units for a 20 kW outdoor unit installation
- Max. 9 indoor units for a 18 kW outdoor unit installation
- Max. 7 indoor units for a 16 kW outdoor unit installation
- Max. 6 indoor units for a 14 kW outdoor unit installation
- Max. 6 indoor units for a 12 kW outdoor unit installation
- Max. 5 indoor units for a 9 kW outdoor unit installation
- Max. 4 indoor units for a 7 kW outdoor unit installation



Wide operation temperature range

Mini VRF system operates stable at extreme temperature range from -15° C to 43° C.

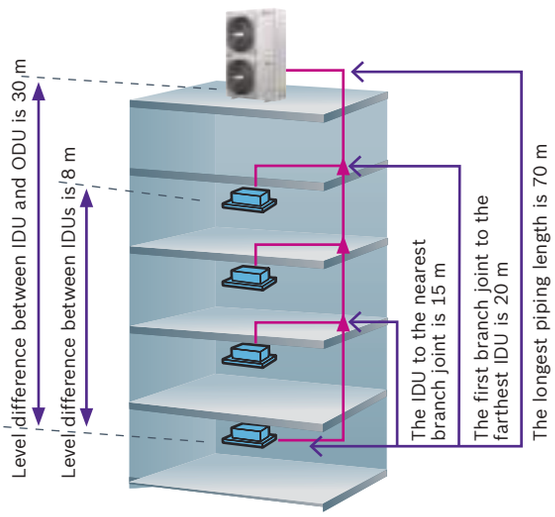


Flexible piping design

The Mini VRF provides a total piping length possibility of 100 m, a maximum height difference between outdoor and indoor units of 30 m. The height difference between indoors unit can be up to 8 m.

			Permitted value (m)		
			7/9 kW	12/14/ 16/18 kW	20/22/ 26 kW
Piping length	Actual total piping length*1		100	100	120
	Longest piping	Actual length	45	60	60
		Equivalent length	50	70	70
	Equivalent piping length from the farthest IDU to the first indoor branch joint		20	20	20
Level difference	Level difference between indoor and outdoor units	Outdoor unit up	30	30	30
		Outdoor unit down	20	20	20
	Level difference between indoor units		8	8	8

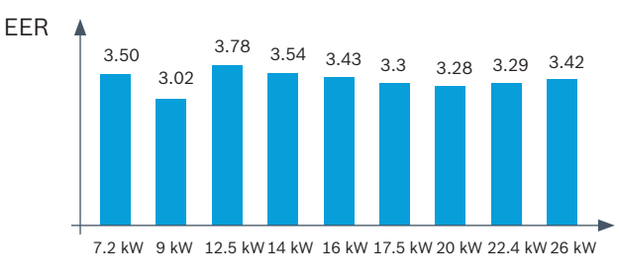
*1 Total pipe length is equal to all the liquid pipe or all the gas pipe length.

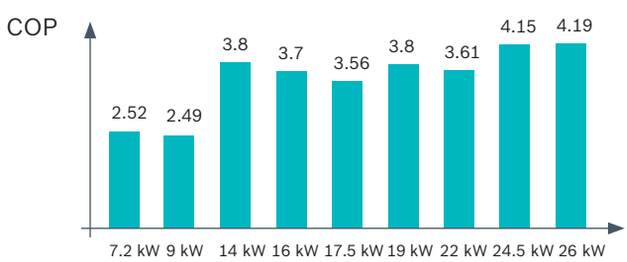


IDU = Indoor Unit
ODU = Outdoor Unit

High Efficiency

High COP and EER values

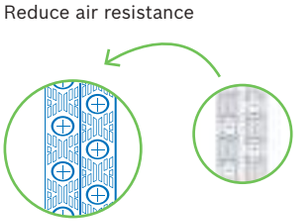




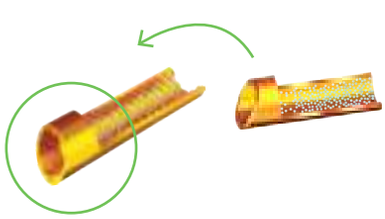
1) Cooling: Indoor temperature 27° C DB/19° C WB; Outdoor temperature 35° C DB/24° C WB.
2) Heating: Indoor temperature 20° C DB; Outdoor temperature 7° C DB/6° C WB.
3) Heating: (For MDCI8-1 and MDCI10-1) Indoor temperature 20° C DB; Outdoor temperature 2° C DB/1° C WB.

High performance heat exchanger

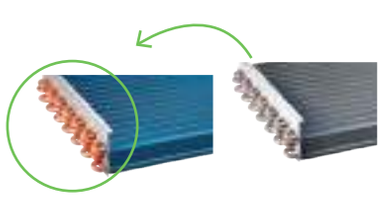
Reduce air resistance



New design Original design



High efficiency inner-threaded pipe, enhance heat transfer



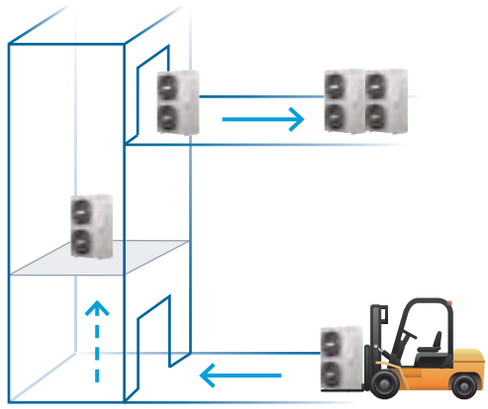
Hydrophilic fins + inner-threaded pipes

- The new designed window fins enlarge the heat-exchanging area, decrease the air resistance, save more power and enhance heat exchange performance.
- Hydrophilic film fins and inner-threaded copper pipes optimize heat exchange efficiency.
- The specially coated blue fins enhance durability and protect against corrosion from air, water and other corrosive agents, assures a longer coil service life.

Easy Installation and Service

Easy installation

Easy installation: No special area is required for outdoor units. Easy transportation: All outdoor units can be transported by elevator, which greatly simplifies installation and reduces time and labor. The Mini VRF indoor and outdoor units are almost as easy to install as residential air conditioning systems, making them ideal for small offices and shops.

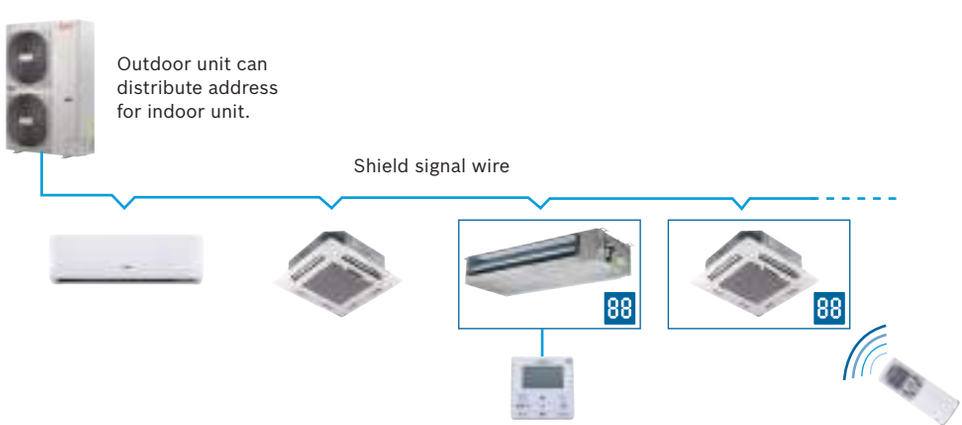


Space saving design

The Mini VRF units are slimmer and more compact, resulting in significant savings in installation space. In some large residential and light commercial areas, such as villas, restaurants, usually it needs more than one indoor unit, which in turn requires multiple outdoor units.

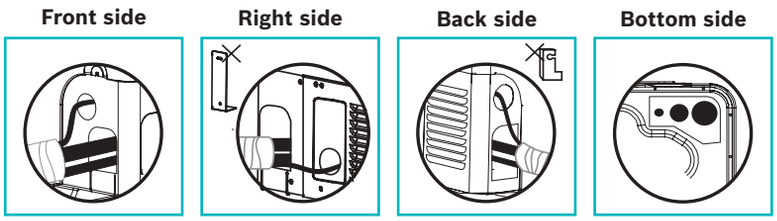
Auto addressing

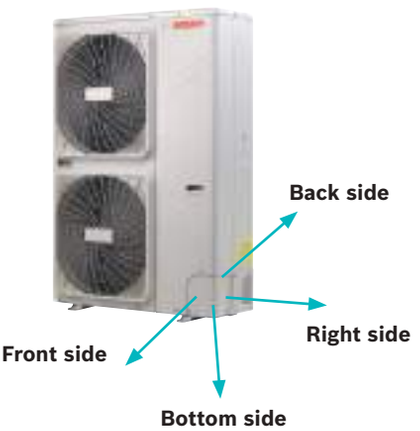
Addresses of indoor units can be set automatically by outdoor units.
Wireless controller can inquire and modify every indoor units address.



More convenience in installation

A four-direction space is available for connecting pipes and wiring in various installation sites.





More convenient piping connector – branch box (MBB04)

Easier and safer installation thanks to a branch box that simplifies piping work and the adoption of screw connection. Both left and right pipe flare connecting from outdoor unit to branch box is reserved, which greatly simplifies field installation. Two sets of pipe size converter are packed with branch box to transfer the pipe size from Φ6.35 mm to Φ9.53 mm and from Φ12.7 mm to Φ15.9 mm.

Low noise

The branch box linear design regulates the flow of refrigerant and reduces the noise. By locating the branch box in the ceiling or outside, noise generated by the branch box can be kept clear of living spaces, thus makes noise level to a minimum.

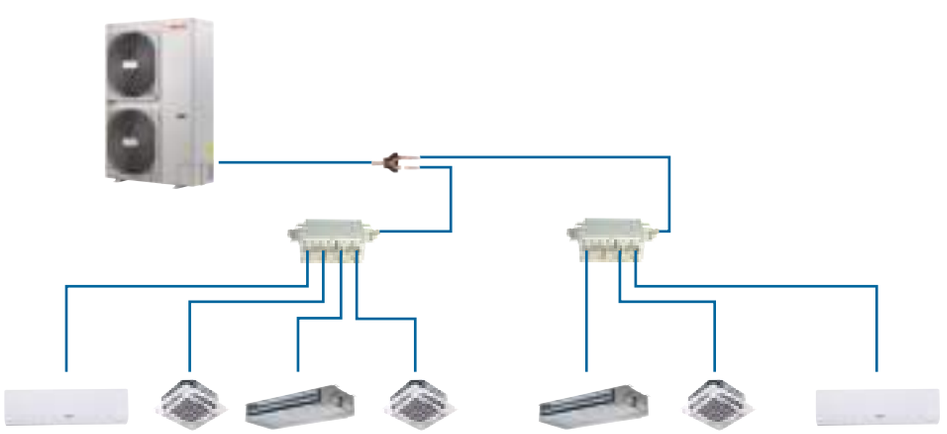
Brazing-free quick installation

All the piping leading to and from the branch box is connected using screw joints, which can be installed quickly and easily.

Indoor installation

The branch box can be installed in the ceiling rather than outside. Removing the side and bottom covers provides easy access for maintaining inner components such as circuit boards.

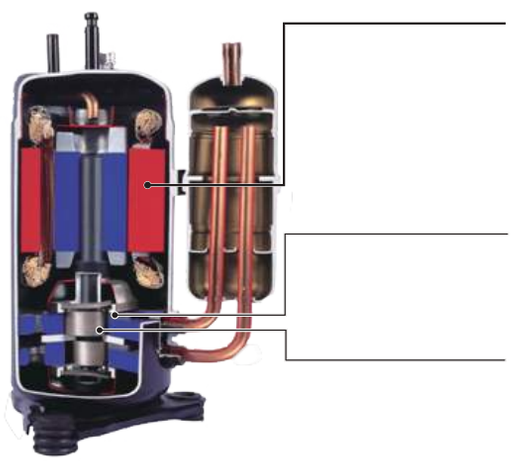
New piping connection design



Advanced Technologies

Full DC inverter technology

At the heart of our system is a highly intelligent inverter driven compressor. This advanced technology enables the output of the outdoor unit to be modulated by the cooling or heating demands of the zone that it controls. This advanced system ensures precise temperature regulation and highly efficient energy usage.



Compressor
(Twin Rotary) structure

Highly Efficient DC Motor:

- Creative motor core design
- High density neodymium magnet
- Concentrated type stator
- Wider operating frequency range

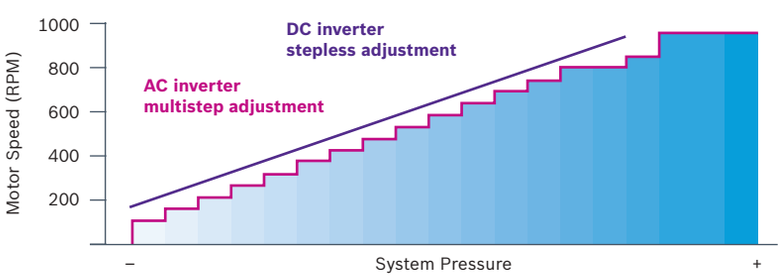
Better Balance and Extremely Low Vibration:

- Twin eccentric cams
- 2 balance weights

Highly Stable Moving Parts:

- Optimal material matching rollers and vanes
- Optimize compressor drive technology
- Highly robust bearings
- Compact structure

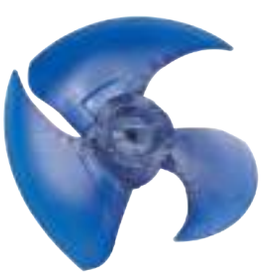
High efficiency DC fan motor saved power up to 50%.



Noise reducing design

Optimally designed fan shape and air discharge grille increases air volume and reduces running noise.

Newly Designed Fan Guard



Powerful Large Propeller

Outdoor Unit

Specifications

MDCI Series – Mini VRF Heat Pump

Model			MDCI8-1	MDCI10-1	MDCI12-1/ MDCI12-3	MDCI14-1/ MDCI14-3	MDCI16-1/ MDCI16-3	MDCI18-3
Power supply		V/Ph/Hz	220-240V~50Hz	220-240V~50Hz	220-240/1/50 380-415/3/50	220-240/1/50 380-415/3/50	220-240/1/50 380-415/3/50	380-415/3/50
Cooling (1)	Capacity	kW	7.2 (1.5~8.0)	9.0 (2.0~10.0)	12.5	14	16	17.5
	Input	kW	2.06	2.98	3.31	3.95	4.66	5.30
	EER	-	3.50	3.02	3.78	3.54	3.43	3.30
	SEER	-	5.47	5.80	-	-	-	-
Heating (2)(3)	Capacity	kW	7.2 (1.6~8.4)	9.0 (2.1~10.5)	14	16	17.5	19.0
	Input	kW	2.98	3.61	3.68	4.32	4.92	5.00
	COP	-	2.52	2.49	3.80	3.70	3.56	3.80
	SCOP	-	5.05	4.94	-	-	-	-
Connectable indoor unit	Total capacity	%	45 – 130	45 – 130	45 – 130	45 – 130	45 – 130	45 – 130
	Max. quantity		4	5	7	8	9	9
Sound pressure level		dB(A)	56	57	57	57	57	59
Pipe connections	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53	Φ9.53	Φ9.53	Φ9.53
	Gas pipe	mm	Φ15.9	Φ15.9	Φ15.9	Φ15.9	Φ19.1	Φ19.1
Fan motor	Type		DC	DC	DC	DC	DC	DC
	Quantity		1	1	2	2	2	2
	Air flow rate	m^3/h	5,500	5,500	6,000	6,000	6,000	6,800
	Motor output	W	170	170	85x2	85x2	85x2	85x2
Compressor	Quantity		1	1	1	1	1	1
	Capacity	kW	7	7	13.1	13.1	13.1	14
	Crankcase heater	W	25	25	25	25	25	25
	Oil type		FV50S	FV50S	VG74	VG74	VG74	FV50S
	Oil charge	ml	670+200	670+200	1400+100	1400+100	1400+250	1400
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Factory charging	kg	2.95	2.95	2.8	3.2	3.8	4.5
Design pressure (High/Low)		MPa	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6	4.4/2.6
Net dimension (W×H×D)		mm	1,075×966 ×396	1,075×966 ×396	900×1,327 ×400	900×1,327 ×400	900×1,327 ×400	900×1,327 ×400
Packing size (W×H×D)		mm	1,120×1,100 ×435	1,120×1,100 ×435	1,030×1,456 ×435	1,030×1,456 ×435	1,030×1,456 ×435	1,030×1,456 ×435
Net weight		kg	75.5	75.5	95	99	100	107
Gross weight		kg	85.5	85.5	105	109	110	118
Operating temperature range	Cooling	°C	-15 – 43	-15 – 43	-15 – 43	-15 – 43	-15 – 43	-15 – 43
	Heating	°C	-15 – 27	-15 – 27	-15 – 27	-15 – 27	-15 – 27	-15 – 27
Data related to EU F-gas Regulation 517/2014								
Environmental impact			Contains fluorinated greenhouse gases					
Refrigerant type			R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
Global warming potential		kgCO2-eq	2088	2088	2088	2088	2088	2088
Amount of refrigerant		kg	2.950	2.950	2.800	3.200	3.800	4.500
Amount of refrigerant		tCO2-eq	6.160	6.160	5.800	6.700	7.900	9.396
Sound power level inside cooling mode	Lwa	dB	51	54	-	-	-	-
Sound power level outside cooling mode	Lwa	dB	66	67	-	-	-	-
Efficiency class cooling			A	A+	-	-	-	-
Efficiency class heating warmer climate			A++	A++	-	-	-	-
Design load warmer climate	Pdesignh	kW	7,2	9,0	-	-	-	-

Notes:
Capacities and efficiency calculations are based on the following conditions:
1) Cooling: Indoor temperature 27° C DB/19° C WB; Outdoor temperature 35° C DB/24°C WB.
2) Heating: Indoor temperature 20° C DB; Outdoor temperature 7° C DB/6° C WB.
3) Heating: (For MDCI8-1 and MDCI10-1) Indoor temperature 20° C DB; Outdoor temperature 2° C DB/1° C WB.

Outdoor Unit

Specifications

MDCI Series – Mini VRF Heat Pump

Model			MDCI20-3	MDCI22-3	MDCI26-3
Power supply		V/Ph/Hz	380-415/3/50	380-415/3/50	380-415/3/50
Cooling	Capacity	kW	20	22.4	26
	Input	kW	6.1	6.8	7.6
	EER	kW/kW	3.28	3.29	3.42
Heating	Capacity	kW	22	24.5	28.5
	Input	kW	6.1	5.9	6.8
	COP	kW/kW	3.61	4.15	4.19
Connectable indoor unit	Total capacity	%	50–130	50–130	50–130
	Max. quantity		10	11	12
Sound pressure level		dB(A)	59	59	60
Pipe connections	Liquid pipe	mm	Φ9.53	Φ9.53	Φ9.53
	Gas pipe	mm	Φ19.1	Φ19.1	Φ22.2
Fan motor	Type		DC	DC	DC
	Quantity		2	2	2
	Air flow rate	m^3/h	10,999	10,494	10,494
	Motor output	W	210 (up)/160 (down)	200 (up)/150 (down)	200 (up)/150 (down)
Compressor	Quantity		1	1	1
	Capacity	kW	13.98	16.86	16.86
	Crankcase heater	W	25	25	25
	Oil type		FV50S	FV50S	FV50S
	Oil charge	ml	1400+1300	1700+1500	1700+1500
Refrigerant	Type		R-410A	R-410A	R-410A
	Factory charging	kg	15	15	17
Design pressure (High/Low)		MPa	4.4/2.6	4.4/2.6	4.4/2.6
Net dimension (W×H×D)		mm	1,120×1,558×528	1,120×1,558×528	1,120×1,558×528
Packing size (W×H×D)		mm	1,270×1,720×565	1,270×1,720×565	1,270×1,720×565
Net weight		mm	137	146.5	147
Gross weight		mm	153	162.5	163
Operating temperature range	Cooling	°C	-15~46	-15~46	-15~46
	Heating	°C	-15~24	-15~24	-15~24
Data related to EU F-gas Regulation 517/2014					
Environmental impact			Contains fluorinated greenhouse gases		
Refrigerant type			R-410A	R-410A	R-410A
Global warming potential		kgCO2-eq	2088	2088	2088
Amount of refrigerant		kg	15.000	15.000	16.000
Amount of refrigerant		tCO2-eq	31.320	31.320	33.408

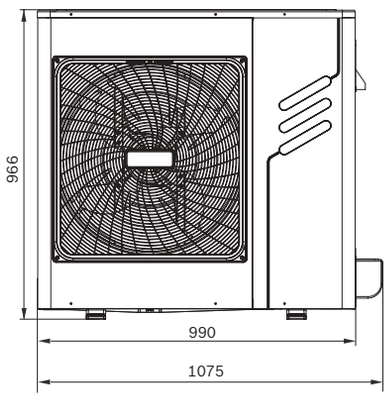
Notes:
Capacities are based on the following conditions:
Cooling: Indoor temperature 27° C DB/19° C WB; Outdoor temperature 35° C DB/24° C WB.
Heating: Indoor temperature 20° C DB/15° C WB; Outdoor temperature 7° C DB/6° C WB.
Piping length: Piping length is 5 m, level difference is zero.
Sound values are measured in a semi-anechoic room, at a position 1 m in front of the unit and 1 m above the floor.

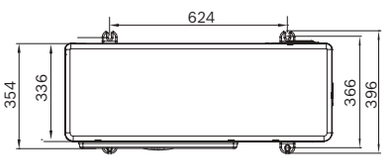
Dimensions

7/9 kW

Unit: mm

7/9kW

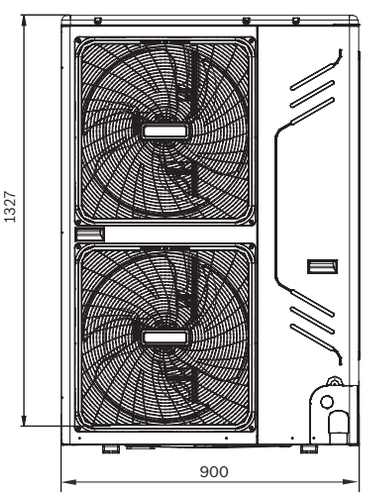


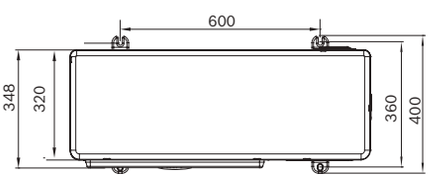


12/14/16/18 kW

Unit: mm

12/14/16/18kW

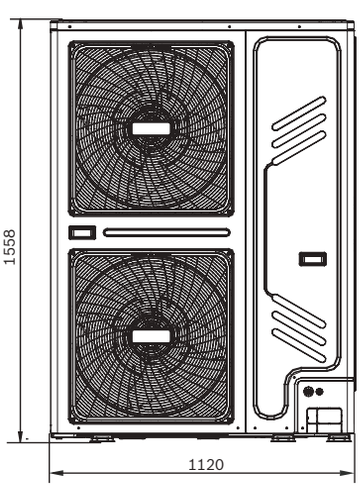


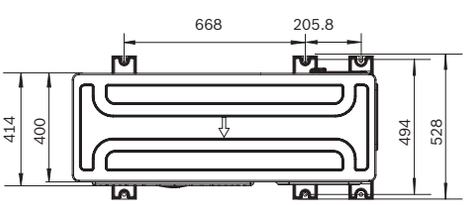


20/22.4/26 kW

Unit: mm

20/22.4/26kW

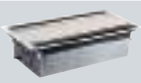




Indoor Units Lineup

Indoor Units Lineup

46 ▸ Wall Mounted
48 ▸ Compact 4 Way Cassette
50 ▸ 4 Way Cassette
52 ▸ 1 Way Cassette
54 ▸ 2 Way Cassette
56 ▸ Slim Duct Type
58 ▸ Duct Type
60 ▸ High Static Pressure Duct
62 ▸ Fresh Air Processing Unit
63 ▸ Floor Standing Without Cabinet
64 ▸ Floor Standing With Cabinet
65 ▸ Ceiling & Floor

Type		1.5 kW	1.8 kW	2.2 kW	2.8 kW	3.6 kW	4.5 kW	5.6 kW	7.1 kW
Wall Mounted				■	■	■	■	■	■
Compact 4 Way Cassette		■		■	■	■	■		
4 Way Cassette					■	■	■	■	■
1 Way Cassette			■	■	■	■			
							■	■	■
2 Way Cassette				■	■	■	■	■	■
Low Static Pressure Duct		■		■	■	■	■	■	■
High Static Pressure Duct									■
Fresh Air Processing Unit									
Floor Standing						■	■	■	■
				■	■	■	■	■	■
				■	■	■	■	■	■

8.0 kW	9.0 kW	10.0 kW	11.2 kW	12.5 kW	14.0 kW	16.0 kW	20.0 kW	25.0 kW	28.0 kW
■	■								
■	■	■	■		■				
	■		■						
					■	■			
							■	■	■
				■	■		■	■	■
■	■		■		■				
■									
■									

Wall Mounted

Elegant Series, DC Fan Motor

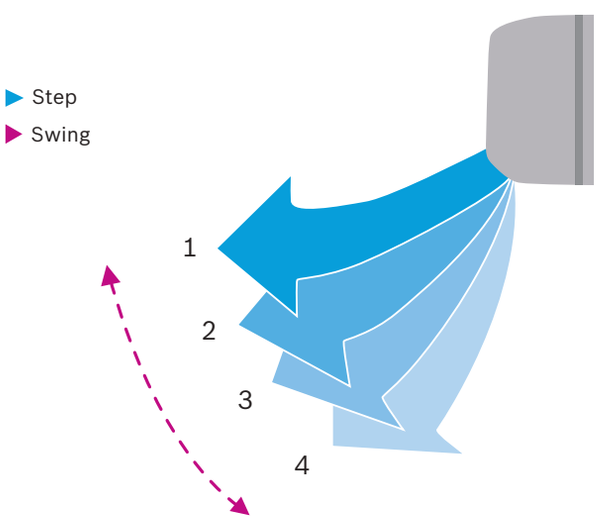
- Auto Restart
- Auto Addressing
- Follow Me
- Timer
- Swing
- Auto Defrosting
- Cleanable Panel
- Anti-Cold Air Function
- LED Display
- Wired Controller (optional)
- Built-in Filter
- Independent Dehumidification

High efficiency and low sound

Thanks to the DC brushless fan motor; the unit operates in high efficiency and low sound level.

Auto Swing Louver

The Auto Swing Louver function ensures that the air direction corresponds to the mode selected.

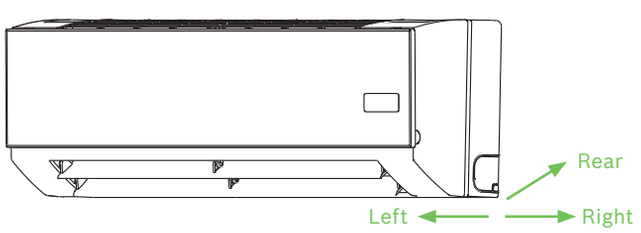


Better refrigerant control and quiet operations

- The expansion valve offers 2,000-stage positions to ensure precise flow control and less modulation noise.
- Three air flow speeds: low, medium and high; double air guides.
- Smoother airflow and less turbulence is ensured by multi-blade fan and air guide design.

Convenient installation

- Multi-directional refrigerant outlet pipe: left\right\rear, more flexible for installation.
- EXV is built-in the indoor unit, compact size.
- Adopts new type fixing plate, stable and easy to install.



Model			HWM22-1	HWM28-1	HWM36-1
Power supply		V/Ph/Hz	220-240/1/50		
Capacity	Cooling	kW	2.2	2.8	3.6
	Heating	kW	2.4	3.2	4
Power input	Cooling	W	8	9	19
	Heating	W	8	9	19
Airflow rate (H/M/L)		m^3/h	422/393/356	417/370/316	656/573/488
Sound pressure level (H/M/L)		dB(A)	31/30/29	31/30/29	33/32/30
Net dimension (W×H×D)		mm	835×280×203	835×280×203	990×315×223
Packing dimension (W×H×D)		mm	935×385×320	935×385×320	1,085×420×335
Net weight		kg	8.4	9.5	11.4
Gross weight		kg	12.1	13.1	15.5
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7
	Drain pipe	mm	OD Φ16.5	OD Φ16.5	OD Φ16.5
Standard Controller			Wireless remote controller		

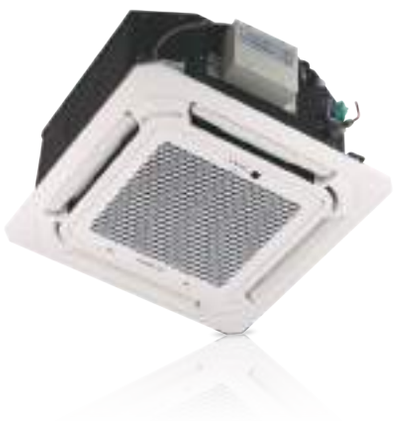
Model			HWM45-1	HWM56-1	HWM71-1	HWM80-1	HWM90-1
Power supply		V/Ph/Hz	220-240/1/50				
Capacity	Cooling	kW	4.5	5.6	7.1	8	9
	Heating	kW	5	6.3	8	9	10
Power input	Cooling	W	19	27	49	53	82
	Heating	W	19	27	49	53	80
Airflow rate (H/M/L)		m^3/h	594/507/424	747/648/547	1,195/1,005/809	1,195/1,005/809	1,421/1,067/867
Sound pressure level (H/M/L)		dB(A)	35/33/31	38/36/34	44/39/36	44/39/36	48/43/38
Net dimension (W×H×D)		mm	990×315×223	990×315×223	1,194×343×262	1,194×343×262	1,194×343×262
Packing dimension (W×H×D)		mm	1,085×420×335	1,085×420×335	1,290×375×460	1,290×375×460	1,290×375×460
Net weight		kg	12.8	12.8	17	17	17
Gross weight		kg	16.9	16.9	22.4	22.4	22.4
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ16.5	OD Φ16.5	OD Φ16.5	OD Φ16.5	OD Φ16.5
Standard Controller			Wireless remote controller				

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temperature.: 27° C DB, 19° C WB, outdoor temperature.: 35° C DB, equivalent ref. Piping: 8 m (horizontal)
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature.: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal)
3. Sound level is measured 1 m below the air outlet horizontally and vertically.

Compact 4 Way Cassette

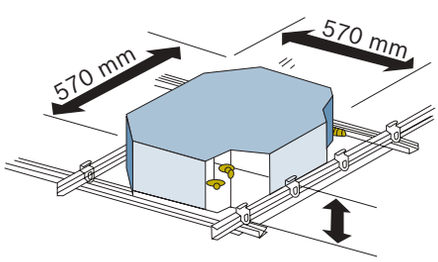
With DC fan motor



- Auto Restart
- Auto Addressing
- Fresh Air
- Auto Defrosting
- Easy-cleaning Panel
- Follow Me
- Anti-Cold Air Function
- Built-in Drain Pump
- LED Display
- Built-in Filter
- Independent Dehumidification
- Timer
- Auto Swing
- Wired Controller (optional)

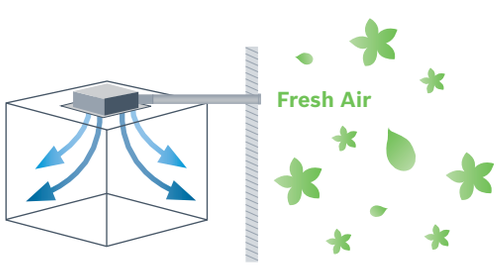
Compact design, easy installation

Compact design (570x570 mm) fits perfectly at false ceiling applications.



Fresh air intake

Option to connect fresh air duct to the vrf indoor unit up to 15% of the total air volume of unit.



High efficiency and low sound operation

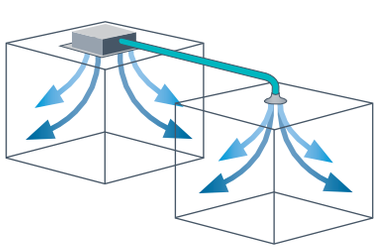
Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.

Lower than 21 Watt power input even at the highest capacity model (MC4W45-1D: 21 Watt)

360° air outlet provides strong air flow circulation to cool or heat every corner of a room.

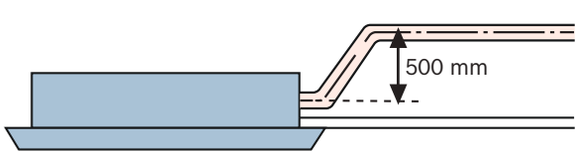
Sub duct

Sub duct enables you to use the same air conditioner unit to cool an additional smaller space nearby.



Build-in drain pump

Drain pump can pump drainage water up to 500 mm high



Technical specifications

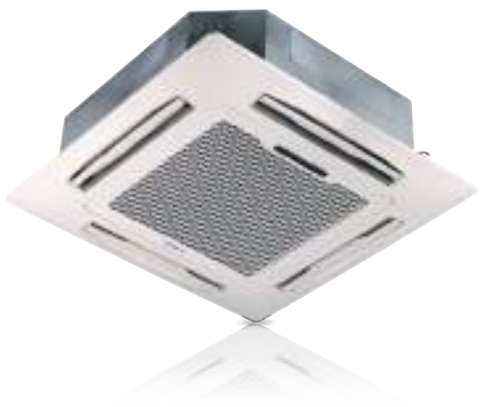
Model			MC4W15-1D	MC4W22-1D	MC4W28-1D	MC4W36-1D	MC4W45-1D
Power supply			1-phase,220-240V,50Hz				
Capacity	Cooling	kW	1.5	2.2	2.8	3.6	4.5
	Heating	kW	1.7	2.4	3.2	4.0	5.0
Power input	Cooling	W	14	15	16	21	21
	Heating	W	11	13	13	18	18
Airflow rate (H/M/L)		m^3/h	526/449/364	576/503/405	576/503/405	604/516/400	604/516/400
Sound pressure level (H/M/L)		dB(A)	34/33/22	35/33/22	35/33/22	41/35/28	41/35/28
Sound power level (H/M/L)		dB(A)	45/44/34	46/44/35	46/44/35	52/47/41	52/47/41
Main body	Net dim. (W×H×D)	mm	570x260x570	570x260x570	570x260x570	570x260x570	570x260x570
	Packaging dim.(W×H×D)	mm	675x285x675	675x285x675	675x285x675	675x285x675	675x285x675
	Net/gross weight	kg	16/22	16/22	16/22	17.5/23.5	17.5/23.5
Panel	Net dim. (W×H×D)	mm	647x50x647	647x50x647	647x50x647	647x50x647	647x50x647
	Packaging dim.(W×H×D)	mm	715x123x715	715x123x715	715x123x715	715x123x715	715x123x715
	Net/gross weight	kg	2.5/4.5	2.5/4.5	2.5/4.5	2.5/4.5	2.5/4.5
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			IRC (Infrared remote controller)				

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temp.: 27° C DB, 19° C WB, outdoor temp.: 35° C DB, equivalent ref. Piping: 7.5 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temp.: 20° C DB, outdoor temp.: 7° C DB, 6° C WB, equivalent ref. Piping: 7.5 m (horizontal).
3. Sound pressure level is measured 1.4 m below the unit.

4 Way Cassette

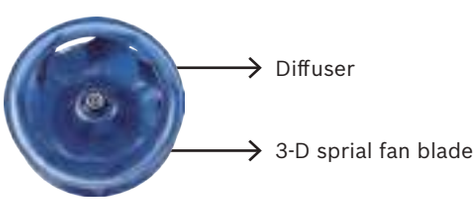
(With DC fan motor)



- Auto Restart
- Auto Addressing
- Fresh Air
- Auto Defrosting
- Easy-cleaning Panel
- Follow Me
- Anti-Cold Air Function
- Built-in Drain Pump
- LED Display
- Built-in Filter
- Independent Dehumidification
- Timer
- Auto Swing
- Wired Controller (optional)

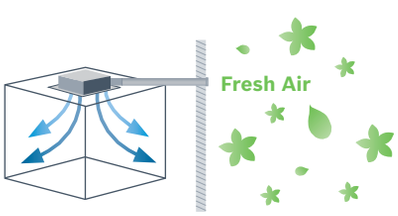
Improved fan, quiet operation

Advanced 3-D spiral fan design ensures high performance and low operation noise.



Fresh air intake

Option to connect fresh air duct to the vrf indoor unit up to 15% of the total air volume of unit.

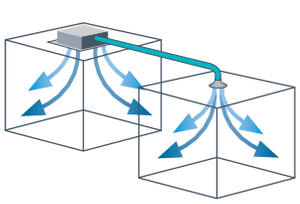


High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.
Lower than 100 Watt power input even at the highest capacity model (C4W140-1D: 94 Watt)

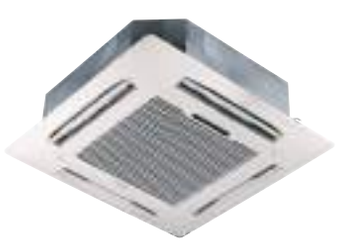
Sub Air Duct Connection

Option to connect duct in case to condition additional rooms with same air conditioner



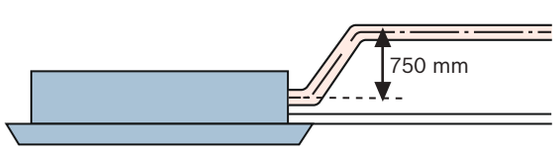
Thin Design

23 cm height (up to 8 kW) covers less space inside false ceiling which results in a higher room ceiling height.



Built-in drain pump

Drain pump can pump drainage water up to 750 mm high



4 Way Cassette

(With DC fan motor)

Model			C4W28-1D	C4W36-1D	C4W45-1D	C4W56-1D	C4W71-1D
Power supply			1-phase, 220-240V, 50Hz				
Capacity	Cooling	kW	2.8	3.6	4.5	5.6	7.1
	Heating	kW	3.2	4.0	5.0	6.3	8.0
Power input	Cooling	W	25	25	31	31	46
	Heating	W	25	25	31	31	46
Airflow rate (H/M/L)		m^3/h	982/832/677	982/832/677	1029/857/704	1029/857/704	1200/996/748
Sound pressure level (H/M/L)		dB(A)	42/37/32	42/37/32	43/38/34	43/38/34	45/39/34
Sound power level (H/M/L)		dB(A)	53/49/45	53/49/45	54/50/47	54/50/47	56/51/47
Main body	Net dim. (W×H×D)	mm	904x230x840	904x230x840	904x230x840	904x230x840	904x230x840
	Packaging dim. (W×H×D)	mm	955x260x955	955x260x955	955x260x955	955x260x955	955x260x955
	Net/gross weight	kg	21.8/27.6	21.8/27.6	24/29.5	24/29.5	24/29.5
Panel	Net dim. (W×H×D)	mm	950x54.5x950	950x54.5x950	950x54.5x950	950x54.5x950	950x54.5x950
	Packaging dim. (W×H×D)	mm	1035x90x1035	1035x90x1035	1035x90x1035	1035x90x1035	1035x90x1035
	Net/gross weight	kg	5/8	5/8	5/8	5/8	5/8
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ32	OD Φ32	OD Φ32	OD Φ32	OD Φ32
Standard Controller			Wireless remote controller				

Model			C4W80-1D	C4W90-1D	C4W100-1D	C4W112-1D	C4W140-1D
Power supply			1-phase, 220-240V, 50Hz				
Capacity	Cooling	kW	8.0	9.0	10.0	11.2	14.0
	Heating	kW	9.0	10.0	11.1	12.5	15.0
Power input	Cooling	W	48	75	75	75	94
	Heating	W	48	75	75	75	94
Airflow rate (H/M/L)		m^3/h	1264/1055/811	1596/1239/1034	1596/1239/1034	1596/1239/1034	1727/1426/1224
Sound pressure level (H/M/L)		dB(A)	46/40/35	47/41/36	47/41/36	47/41/36	50/45/35
Sound power level (H/M/L)		dB(A)	57/52/48	58/53/49	58/53/49	58/53/49	61/57/48
Main body	Net dim. (W×H×D)	mm	904x230x840	904x300x840	904x300x840	904x300x840	904x300x840
	Packaging dim. (W×H×D)	mm	955x260x955	955x330x955	955x330x955	955x330x955	955x330x955
	Net/gross weight	kg	24/29.5	27.4/33.2	27.4/33.2	27.4/33.2	30/35.8
Panel	Net dim. (W×H×D)	mm	950x54.5x950	950x54.5x950	950x54.5x950	950x54.5x950	950x54.5x950
	Packaging dim. (W×H×D)	mm	1035x90x1035	1035x90x1035	1035x90x1035	1035x90x1035	1035x90x1035
	Net/gross weight	kg	5/8	5/8	5/8	5/8	5/8
Piping connections	Liquid/gas pipe	mm	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ32	OD Φ32	OD Φ32	OD Φ32	OD Φ32
Standard Controller			Wireless remote controller				

Notes:

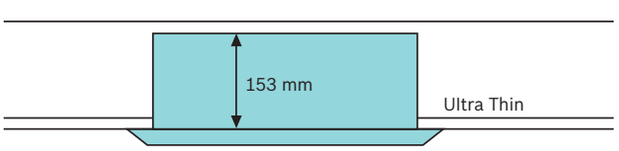
1. Nominal cooling capacities are based on the following conditions: return air temp.: 27° C DB, 19° C WB, outdoor temp.: 35° C DB, equivalent ref. Piping: 7.5 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temp.: 20° C DB, outdoor temp.: 7° C DB, 6° C WB, equivalent ref. Piping: 7.5 m (horizontal).
3. Sound Level is measured 1.4 m below the unit.

1 Way Cassette

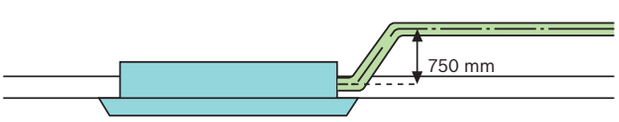
- Auto Restart
- Auto Addressing
- Follow Me
- LED Display
- Fresh Air
- Cleanable Panel
- Anti-Cold Air Function
- Built-in Drain Pump

Only 153 mm thickness

Compact design, ultra slim body with a minimum thickness of 153 mm for model 18–36, especially suitable for narrow ceiling, such as in lobbies and small meeting rooms.

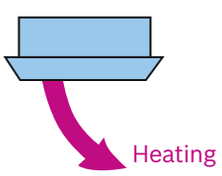


Standard built-in drain pump with 750 mm pump head.

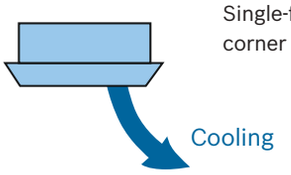


Auto swing

Auto swing mechanism guarantees even airflow distribution and a better room temperature balance.

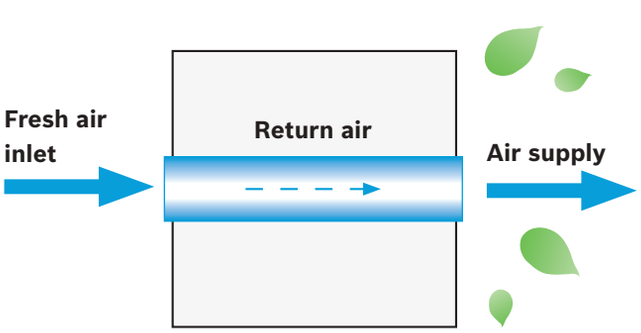


Single-flow design suits corner installation

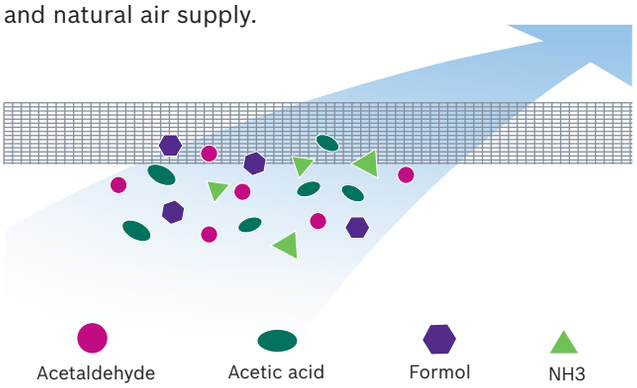


Fresh air, improved air quality

Reserved fresh air intake port for high quality air creates a comfortable and healthy environment.



Special enzyme sterilization and filtering technologies filter bacteria, smog and pollen. Provide a clean, healthy and natural air supply.



Model			C1W18-1	C1W22-1	C1W28-1	C1W36-1	C1W45-1	C1W56-1	C1W71-1
Power supply		V/Ph/Hz	220-240/1/50						
Cooling capacity		kW	1.8	2.2	2.8	3.6	4.5	5.6	7,1
Heating capacity		kW	2.2	2.6	3.2	4	5	6.3	8
Rated input	Cooling	W	41	41	41	41	48	48	60
	Heating	W	41	41	41	41	43	44	55
Rated current	Cooling	A	0.24	0.24	0.25	0.25	0.37	0.39	0.30
	Heating	A	0.24	0.24	0.25	0.25	0.37	0.39	0.30
Airflow rate (H/M/L)		m^3/h	523/404/275	523/404/275	573/456/315	573/456/315	704/630/503	860/810/702	933/749/592
Sound pressure level (H/M/L)		dB(A)	37/34/30	38/34/30	39/37/34	40/38/34	41/39/35	42/40/36	43/41/37
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Control method		EXV	EXV	EXV	EXV	EXV	EXV	EXV
Indoor Unit	Net dim. (W×H×D)	mm	1,054×153 ×425	1,054×153 ×425	1,054×153 ×425	1,054×153 ×425	1,204×189 ×443	1,204×189 ×443	1,204×189 ×443
	Gross dim. (W×H×D)	mm	1,155×245 ×490	1,155×245 ×490	1,155×245 ×490	1,155×245 ×490	1,370×295 ×505	1,370×295 ×505	1,370×295 ×505
	Net/Gross	kg	12.5/16	12.5/16	13/16.5	13/16.5	18.5/22.8	18.8/23.1	19.5/23.8
Panel	Net dim. (W×H×D)	mm	1,180×36.5 ×465	1,180×36.5 ×465	1,180×36.5 ×465	1,180×36.5 ×465	1,350×25 ×505	1,350×25 ×505	1,350×25 ×505
	Gross dim. (W×H×D)	mm	1,232×107 ×517	1,232×107 ×517	1,232×107 ×517	1,232×107 ×517	1,410×95 ×560	1,410×95 ×560	1,410×95 ×560
	Net/Gross	kg	3.5/5.2	3.5/5.2	3.5/5.2	3.5/5.2	4/5.4	4/5.4	4/5.4
Piping connections	L (flare)	mm	Φ6.35	Φ6.35	Φ6.35	Φ6.35	Φ6.35	Φ9.53	Φ9.53
	G (flare)	mm	Φ12.7	Φ12.7	Φ12.7	Φ12.7	Φ12.7	Φ15.9	Φ15.9
	Drain piping	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			Infrared Remote Controller (IRC)						

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temperature.: 27° C DB, 19° C WB, outdoor temperature.: 35° C DB, equivalent ref. Piping: 8 m (horizontal)
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature.: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal)
3. Sound level is measured at 1.4 m below the unit.

2 Way Cassette

- Auto Restart
- Fresh Air
- Auto Addressing
- Cleanable Panel
- Follow Me
- Anti-Cold Air Function
- LED Display
- Built-in Drain Pump

Quiet operation

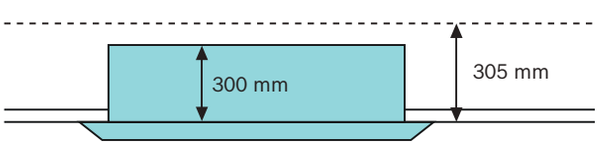
Optimized airflow duct with low resistance greatly reduces noise, minimum down to 24 dB(A).

High airflow

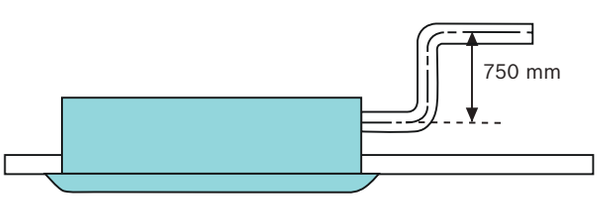
High airflow for high ceiling application guarantees comfort in large space. It makes every person in the room get even distribution of airflow and temperature.

Stylish design and slim body

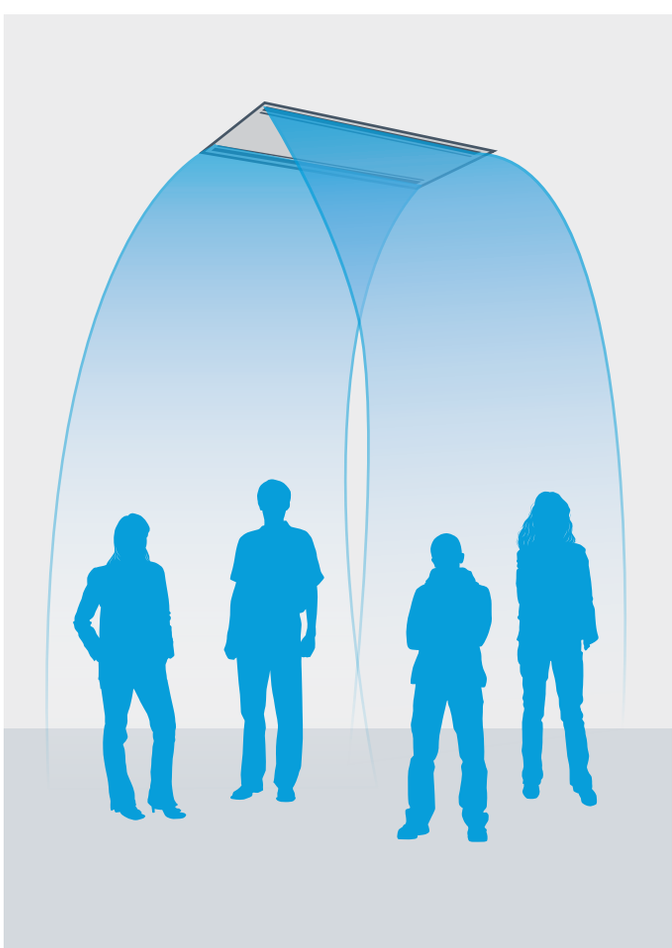
Thanks to the stylish appearance and slim body, the unit suits any room's decor and ambience. At only 300 mm high, the unit requires only a small suspended ceiling space. Installation has no height limitations, which makes overall design features much more flexible.



Standard built-in drain pump with 750 mm pump head.



Flat-type suction grille design greatly simplifies maintenance work.



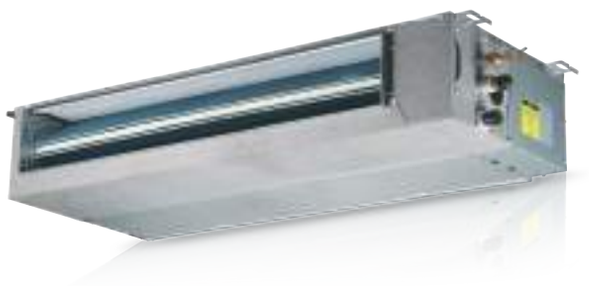
Model			C2W22-1	C2W28-1	C2W36-1	C2W45-1	C2W56-1	C2W71-1
Power supply		V/Ph/Hz	220-240/1/50					
Cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1
Heating capacity		kW	2.6	3.2	4.0	5.0	6.3	8.0
Power input	Cooling	W	57	57	60	92	108	154
	Heating	W	57	57	60	92	108	154
Rated current	Cooling	A	0.35	0.45	0.45	0.55	0.55	0.75
	Heating	A	0.35	0.45	0.45	0.55	0.55	0.75
Airflow rate (H/M/L)		m^3/h	654/530/410	654/530/410	725/591/458	850/670/550	980/800/670	1,200/1,000/770
Sound pressure level (H/M/L)		dB(A)	33/29/24	36/32/29	36/32/29	39/35/30	39/35/30	44/40/34
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A	R-410A
	Control method		EXV	EXV	EXV	EXV	EXV	EXV
Body	Net dim. (W×H×D)	mm	1,172×299×591	1,172×299×591	1,172×299×591	1,172×299×591	1,172×299×591	1,172×299×591
	Gross dim. (W×H×D)	mm	1,355×400×675	1,355×400×675	1,355×400×675	1,355×400×675	1,355×400×675	1,355×400×675
	Net/Gross	kg	34/42.5	34/42.5	34/42.5	36/44.5	36/44.5	36/44.5
Panel	Net dim. (W×H×D)	mm	1,430×53×680	1,430×53×680	1,430×53×680	1,430×53×680	1,430×53×680	1,430×53×680
	Gross dim. (W×H×D)	mm	1,525×130×765	1,525×130×765	1,525×130×765	1,525×130×765	1,525×130×765	1,525×130×765
	Net/Gross	kg	10.5/15	10.5/15	10.5/15	10.5/15	10.5/15	10.5/15
Piping connections	L (flare)	mm	Φ6.35	Φ6.35	Φ6.35	Φ6.35	Φ9.53	Φ9.53
	G (flare)	mm	Φ12.7	Φ12.7	Φ12.7	Φ12.7	Φ15.9	Φ15.9
	Drain piping	mm	OD Φ32	OD Φ32	OD Φ32	OD Φ32	OD Φ32	OD Φ32
Standard Controller			Infrared Remote Controller (IRC)					

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temperature.: 27° C DB, 19° C WB, outdoor temperature.: 35° C DB, equivalent ref. Piping: 8 m (horizontal)
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature.: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal)
3. Sound level is measured at 1.4 m below the unit.

Slim Duct Type

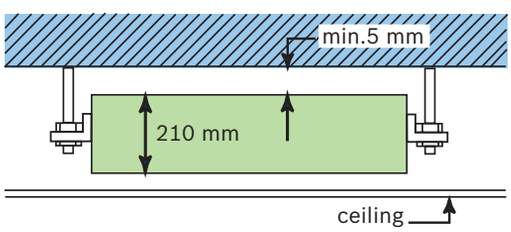
With DC Fan Motor



- Auto Restart
- Auto Addressing
- Follow Me
- LED Display
- Fresh Air
- Cleanable Panel
- Anti-Cold Air Function
- Built-in Drain Pump

Compact size

Only 210 mm unit height: Unit covers minimum space inside false ceiling.



High efficiency and low sound operation

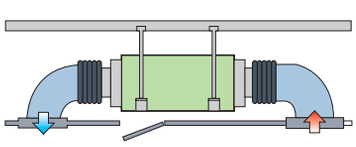
Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.

Up to 35 % lower power consumption when compared to units with AC fan motor.

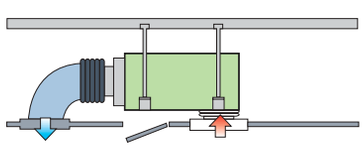
Flexible installation

Rear air inlet is standard and an air inlet at the bottom is optional which gives flexibility for easy installation at site.

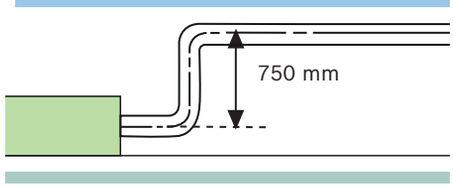
Rear air intake



Bottom air intake



Bullet-in drain pump



Standard Accessories

- Wired remote controller (incl. 6m connection cable) WRC-HP is standard delivered with all models
- Built-in electronic expansion valve (EEV) for all models
- Built-in drain pump
- Standard filter with an aluminum frame
- Standard flanges for air inlet/outlet duct connection
- Alarm and on-off dry contacts are available as standart at PCB.

Technical Specifications

Model			SLPD15-1D	SLPD22-1D	SLPD28-1D	SLPD36-1D
Power supply			1-phase,220-240V,50Hz			
Capacity	Cooling	kW	1.5	2.2	2.8	3.6
	Heating	kW	1.7	2.6	3.2	4.0
Power input	Cooling	W	39	39	39	45
	Heating	W	39	39	39	45
Airflow rate (H/M/L)		m^3/h	509/420/370	521/450/380	521/450/380	592/541/426
External static pressure (Min/Std/Max)		Pa	0/10/30	0/10/30	0/10/30	0/10/30
Sound pressure level (H/M/L)		dB(A)	35/33/31	35/34/31	36/34/31	37/36/33
Sound power level (H/M/L)		dB(A)	46/45/44	46/45/44	47/46/44	48/47/46
Net dimension (W×H×D)		mm	780x210x500	780x210x500	780x210x500	780x210x500
Packaging dimension (W×H×D)		mm	870x285x525	870x285x525	870x285x525	870x285x525
Net/gross weight		kg	17.5/20.5	17.5/20.5	17.5/20.5	17.5/20.5
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			Wired controller (WRC-HP)			

Model			SLPD45-1D	SLPD56-1D	SLPD71-1D
Power supply			1-phase,220-240V,50Hz		
Capacity	Cooling	kW	4.5	5.6	7.1
	Heating	kW	5.0	6.3	8.0
Power input	Cooling	W	58	89	92
	Heating	W	58	89	92
Airflow rate (H/M/L)		m^3/h	748/640/550	821/640/566	1021/940/778
External static pressure (Min/Std/Max)		Pa	0/10/30	0/10/30	0/10/30
Sound pressure level (H/M/L)		dB(A)	38/37/33	38/37/33	40/38/34
Sound power level (H/M/L)		dB(A)	49/48/46	49/48/46	51/50/47
Net dimension (W×H×D)		mm	1000x210x500	1000x210x500	1220x210x500
Packaging dimension (W×H×D)		mm	1115x285x525	1115x285x525	1335x285x525
Net/gross weight		kg	22.5/26	22.5/26	28/31.5
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25
Standard Controller			Wired controller (WRC-HP)		

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temperature: 27° C DB, 19° C WB,outdoor temperature: 35° C DB, equivalent ref. Piping: 7.5 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temperature: 20° C DB, outdoor temperature: 7° C DB, 6° C WB, equivalent ref. Piping: 7.5 m (horizontal).
3. Sound pressure level is measured at 1.4 m below the air outlet.

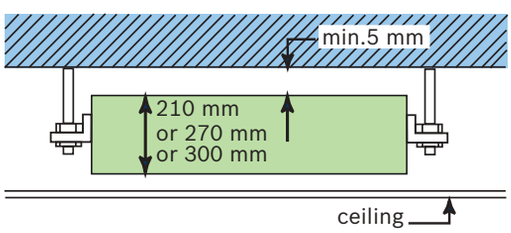
Duct Type

High Static Pressure, DC Fan Motor

- Auto Restart
- Fresh Air
- Follow Me
- Anti-Cold Air Function
- Built-in Drain Pump
- Wired Controller
- Auto Addressing
- Connectable To Duct

Compact size

Only 210 mm (22~36 models) or 270 mm (45 to 90 models) or 300 mm (112-140 models) in height.



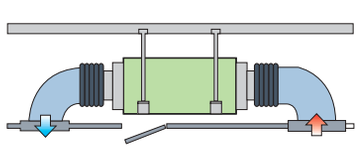
External static pressure

Thanks to DC fan motor which allows high external pressure from 0 to 150 Pa while allowing the indoor unit to operate with a lower sound.

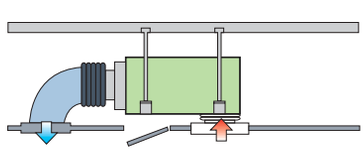
Convenient installation

The EXV is fixed inside of the indoor unit. Standard filter is housed in an aluminium frame, which is removable from the bottom in the downward direction. Suction chamber is included as standard equipment. Fresh air hole, air inlet/outlet flange are standard for easy duct connection. A rear air inlet is standard and an inlet at the bottom is optional. Both use the same connectable duct.

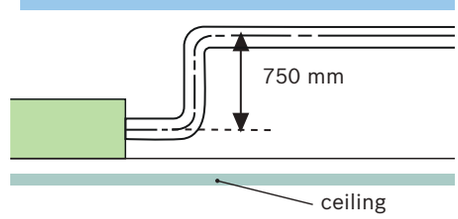
air intake from back



air intake from below



drain pump as standard



Flexible control and easy maintenance

Standard wired remote controller WRC-HP. Standard functional ports are included such as Remote On/Off Dry contact switch and Alarm signal output (220 V).

Model			SHPD22-1	SHPD28-1	SHPD36-1	SHPD45-1	SHPD56-1
Power supply voltage		V/Ph/Hz	220-240/1/50				
Cooling	Capacity	kW	2.2	2.8	3.6	4.5	5.6
	Input	W	120	120	150	260	280
	Rated current	A	0.55	0.55	0.6	1.2	1.3
Heating	Capacity	kW	2.6	3.2	4	5	6.3
	Input	W	120	120	150	260	280
	Rated current	A	0.55	0.55	0.6	1.2	1.3
Indoor Fan Motor	Type		DC	DC	DC	DC	DC
	Insulation/Safety class		E/IP20	E/IP20	E/IP20	E/IP20	E/IP20
	Input	W	100	100	100	150	150
	Output	W	51	51	57	133	153
	Full load Amps. (FLA)	A	0.51	0.51	0.56	1.1	1.24
	Speed (H/M/L)	r/min	733/670/598 (0Pa)	733/670/598 (0Pa)	733/670/598 (0Pa)	841/751/681 (25Pa)	894/804/734 (25Pa)
Indoor Fan	Material		ABS	ABS	ABS	ABS	ABS
	Type		Centrifugal fan	Centrifugal fan	Centrifugal fan	Centrifugal fan	Centrifugal fan
	Diameter/Height	mm	142/180	142/180	142/180	188/190	188/190
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A	R-410A
	Control method		EXV	EXV	EXV	EXV	EXV
Standard external static pressure		Pa	0	0	0	25	25
Indoor air flow (H/M/L)		m^3/h	341/294/247	341/294/247	341/294/247	444/384/325	512/444/375
Indoor external static pressure		Pa	0-80	0-80	0-80	0-150	0-150
Indoor sound level (sound pressure level)(H/M/L)		dB(A)	38/37/36	39/37/35	38/37/36	46/43/41	47/43/41
Indoor unit	Dimension (L×W×H)	mm	920×450×210	920×450×210	920×450×210	920×570×270	920×570×270
	Gross (L×W×H)	mm	1180×525×290	1180×525×290	1180×525×290	1135×655×350	1135×655×350
	Gross weight/Net weight	Kg	25.5/21.5	25.5/21.5	26/22	34/29	34/29
Piping connections	Liquid/Gas/Drain pipe	mm	Φ6/Φ12.7/Φ25	Φ6/Φ12.7/Φ25	Φ6/Φ12.7/Φ25	Φ6/Φ12.7/Φ25	Φ9.52/Φ16/Φ25
Drain Pump Head		mm	700	700	700	700	700
Standard Controller			WRC-HP	WRC-HP	WRC-HP	WRC-HP	WRC-HP
Fresh air	Fresh Air Diameter	mm	Φ92	Φ92	Φ92	Φ92	Φ92

Model			SHPD71-1	SHPD90-1	SHPD112-1	SHPD140-1
Power supply voltage		V/Ph/Hz	220-240/1/50			
Cooling	Capacity	kW	7.1	9	11.2	14
	Input	W	290	350	340	500
	Rated current	A	1.6	2.2	2.1	2.7
Heating	Capacity	kW	8	10	12,5	15,5
	Input	W	290	350	340	500
	Rated current	A	1.6	2.2	2.1	2.7
Indoor Fan Motor	Type		DC	DC	DC	DC
	Insulation/Safety class		E/IP20	E/IP20	E/IP20	E/IP20
	Input	W	150	150	240	240
	Output	W	188	279	267	360
	Full load Amps. (FLA)	A	1.52	2.0	1.9	2.6
	Speed (H/M/L)	r/min	843/753/683 (25Pa)	972/882/812 (25Pa)	882/792/722 (25Pa)	1077/987/917 (25Pa)
Indoor Fan	Material		ABS	ABS	ABS	ABS
	Type		Centrifugal fan	Centrifugal fan	Centrifugal fan	Centrifugal fan
	Diameter/Height	mm	188/190	188/190	188/190	188/190
Refrigerant	Type		R-410A	R-410A	R-410A	R-410A
	Control method		EXV	EXV	EXV	EXV
Standard external static pressure		Pa	25	25	25	25
Indoor air flow (H/M/L)		m^3/h	682/591/500	853/739/625	1024/887/750	1365/1182/1000
Indoor external static pressure		Pa	0-150	0-150	0-150	0-150
Indoor sound level (sound pressure level)(H/M/L)		dB(A)	49/46/44	57/54/52	49/46/44	55/53/51
Indoor unit	Dimension (L×W×H)	mm	1148×710×270	1148×710×270	1200×865×300	1200×865×300
	Gross (L×W×H)	mm	1385×855×365	1385×855×365	1400×925×375	1400×925×375
	Gross weight/Net weight	Kg	42/36	43.5/37	54/46	54/46
Piping connections	Liquid/Gas/Drain pipe	mm	Φ9.52/Φ16/Φ25	Φ9.52/Φ16/Φ25	Φ9.52/Φ16/Φ25	Φ9.52/Φ16/Φ25
Drain Pump Head		mm	700	700	700	700
Standard Controller			WRC-HP	WRC-HP	WRC-HP	WRC-HP
Fresh air	Fresh Air Diameter	mm	Φ92	Φ92	Φ92	Φ92

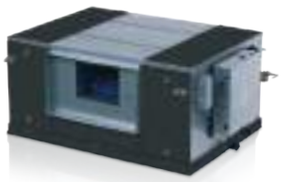
Notes:

1. Nominal cooling capacities are based on the following conditions: return air temperature.: 27° C DB, 19° C WB, outdoor temperature.: 35° C DB, equivalent ref. Piping: 8 m (horizontal)
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature.: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal)
3. Sound level is measured at 1.4 m below the air outlet.

External static pressure is based on high speed indoor air flow.

High Static Pressure Duct

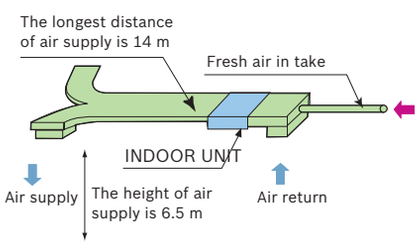
With DC Fan Motor

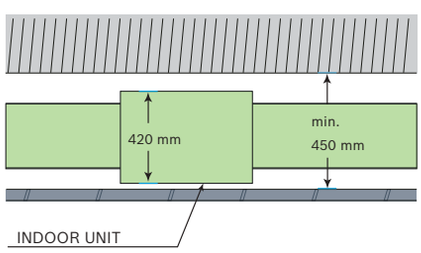


- Auto Restart
- Auto Defrosting
- Anti-Cold Air Function
- Built-in Drain Pump
- Auto Addressing
- Built-in Filter
- Wired Controller
- Independent Dehumidification
- Follow Me
- Timer

Thin design, flexible duct application

Thin design offers only 45 cm ceiling above the ceiling. (HPD71-1D to HPD160-1D)
External static pressure (ESP) is available up to 200 Pa allows longer duct applications at site.



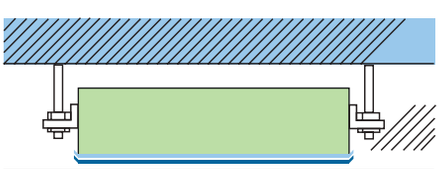


High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level. 25% to 50% lower power consumption when compared to units with AC fan motor .

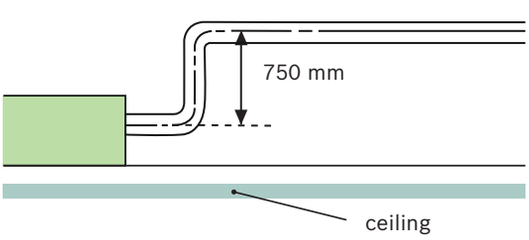
Double-skin drainage pan

Double-skin drain pan ensures extra leakage protection for ceilings (HPD71-1D to HPD160-1D).



Optional drain pump

Possible to connect external drain pump for models HPD71-1D to HPD160-1D.



Standard accessories

- Wired remote controller (incl. 6 m connection cable) WRC-HP is standart delivered with all models
- Built-in electronic expansion valve (EEV) for models HPD71-1D to HPD160-1D
- Standard filter with an aluminum frame
- Standard flanges for air inlet/outlet duct connection
- Alarm and on-off dry contacts are available as standart at PCB.

Technical specifications

Model			HPD71-1D	HPD80-1D	HPD90-1D	HPD112-1D	HPD140-1D	HPD160-1D
Power supply			1-phase,220-240V,50Hz					
Capacity	Cooling	kW	7.1	8.0	9.0	11.2	14.0	16.0
	Heating	kW	8.0	9.0	10.0	12.5	16.0	17.0
Power input	Cooling	W	180	180	220	380	420	700
	Heating	W	180	180	220	380	420	700
Airflow rate (H/M/L)		m^3/h	1500/ 1390/1250	1450/ 1340/1190	1780/ 1650/1530	2080/ 1930/1710	2860/ 2440/2010	3400/ 2660/2400
External static pressure (Min/Std/Max)		Pa	0/25/196	0/37/196	0/37/196	0/37/196	0/50/196	0/50/196
Sound pressure level (H/M/L)		dB(A)	46/44/42	46/44/42	50/47/45	50/47/45	53/50/48	54/52/50
Sound power level (H/M/L)		dB(A)	57/56/55	57/56/55	61/59/58	61/59/58	64/62/61	65/64/63
Net dimension (W×H×D)		mm	952×420×690	952×420×690	952×420×690	952×420×690	1300×420×690	1300×420×690
Packaging dimension (W×H×D)		mm	1090×440×768	1090×440×768	1090×440×768	1090×440×768	1436×450×768	1436×450×768
Net/gross weight		kg	41/47	41/47	47/53	47/53	63/71	63/71
Piping connections	Liquid/gas pipe	mm	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			Wired controller (WRC-HP)					

Model			HPD200-1D	HPD250-1D	HPD280-1D
Power supply			1-phase,220-240V,50Hz		
Capacity	Cooling	kW	20.0	25.0	28.0
	Heating	kW	22.5	26.0	31.5
Power input	Cooling	W	800	800	800
	Heating	W	800	800	800
Airflow rate (H/M/L)		m^3/h	4820/4660/4620	4870/4760/4690	4870/4760/4690
External static pressure (Min/Std/Max)		Pa	40/62/200	40/62/200	40/62/200
Sound pressure level (H/M/L)		dB(A)	57/53/50	57/53/50	57/53/50
Sound power level (H/M/L)		dB(A)	68/65/63	68/65/63	68/65/63
Net dimension (W×H×D)		mm	1440x505x925	1440x505x925	1440x505x925
Packaging dimension (W×H×D)		mm	1509x550x990	1509x550x990	1509x550x990
Net/gross weight		kg	108/120	108/120	108/120
Piping connections	Liquid/gas pipe	mm	Φ9.53x2/Φ15.9x2	Φ9.53x2/Φ15.9x2	Φ9.53x2/Φ15.9x2
	Drain pipe	mm	OD Φ32	OD Φ32	OD Φ32
Standard Controller			Wired controller (WRC-HP)		

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temp.: 27° C DB, 19°C WB, outdoor temp.: 35° C DB, equivalent ref. Piping: 7.5 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temp.: 20° C DB, outdoor temp.: 7° C DB, 6° C WB, equivalent ref. Piping: 7.5 m (horizontal).
3. Sound Level is measured 1.4 m below the unit.
4. External static pressure is based on high speed air volume.

Fresh Air Processing Unit

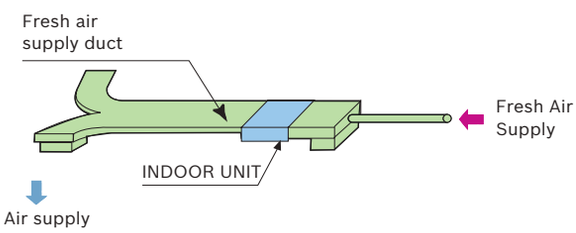
DC Fan Motor

100% fresh air processing unit

VRF indoor units and fresh air processing unit can be connected to the same refrigerant system (please see below for conditions) increasing design flexibility and greatly reducing total system costs.

High external static pressure

External static pressure can be up to 200 Pa for more flexible duct applications.



Healthy and comfortable

Fresh air is supplied resulting to a healthy and comfortable living environment. Four speed fan motor (model 125, 140).

High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.

Specification

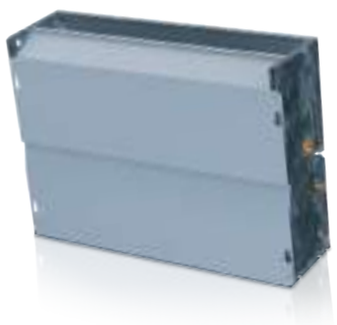
Model			FAD125-1	FAD140-1	FAD200-1	FAD250-1	FAD280-1
Power supply			1-phase, 220-240 V, 50 Hz				
Capacity	Cooling	kW	12.5	14.0	20.0	25.0	28.0
	Heating	kW	10.5	12.0	18.0	20.0	22.0
Power input	Cooling	W	370	370	615	670	670
	Heating	W	370	370	615	670	670
Airflow rate (H/M/L)		m^3/h	2440/2000/1470	2440/2000/1470	3860/3430/2890	3860/3430/2890	3860/3430/2890
External static pressure (Min/Std/Max)		Pa	0/50/200	0/50/200	0/62/200	0/62/200	0/62/200
Sound pressure level (H/M/L)		dB(A)	52/50/48	52/50/48	52/51/49	53/52/50	53/52/50
Sound power level (H/M/L)		dB(A)	63/62/61	63/62/61	63/62/61	64/63/62	64/63/62
Net dimension (WxHxD)		mm	1300×420×690	1300×420×690	1443×470×810	1443×470×810	1443×470×810
Packing dimension (WxHxD)		mm	1436×450×768	1436×450×768	1509×550×990	1509×550×990	1509×550×990
Net/gross weight		kg	63/71	63/71	108/120	108/120	108/120
Piping connections	Liquid/gas pipe	mm	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ32	OD Φ32	OD Φ 32
Operation temperature range		°C	Heating: -5~16; Fan only: 16~20; Cooling: 20~43				
Standard controller			Wired Controller				

Notes:
1. Nominal cooling capacities are based on the following conditions: outdoor air temperature: 33° C DB, 28° C WB, equivalent ref. Piping: 8 m (horizontal).
2. Nominal heating capacities are based on the following conditions: outdoor air temperature.: 0° C DB, -2.9° C WB, equivalent ref. Piping: 8 m (horizontal).
3. Sound level is measured at 1.4 m below the air outlet. External static pressure is based on high speed indoor air flow.

Connection Conditions:
The following restrictions must be observed in order to maintain the indoor units connection to the same system.
*When outdoor-air processing units are connected, the total connection capacity must be within 50% to 100% of that of the outdoor units.
*When outdoor-air processing units and standard indoor units are connected, the total connection capacity of the outdoor-air processing units must not exceed 30% of the connected outdoor units.
*Outdoor-air processing units can be used stand-alone for only ventilation purposes.
*The fresh air processing unit is not available for RDCI and MDCI8-26 series.

Floor Standing Without Cabinet

DC Fan Motor



- Auto Restart Function
- Auto Defrosting
- Auto Addressing
- Independent Dehumidification
- Follow Me
- Anti-Cold Air Function
- Timer
- Infrared Controller

Perfect fit to architecture

Unit can be hidden in the conditioned room and perfect fits to architecture.
The unit is just 212 mm depth and can be installed at the room's perimeter without losing space in the room.

Easy maintenance

Filter is provided as a standard accessory. It can be removed and cleaned easily.
All metal parts are made of commercial grade galvanized steel for maximum protection against corrosion.

High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.

Specification

FSN Series

Model			FSN22-1	FSN28-1	FSN36-1	FSN45-1	FSN56-1	FSN71-1	FSN80-1
Power supply			1-phase, 220-240 V, 50 Hz						
Capacity	Cooling	kW	2.2	2.8	3.6	4.5	5.6	7.1	8.0
	Heating	kW	2.4	3.2	4.0	5.0	6.3	8.0	9.0
Power input	Cooling	W	24	24	21	24	38	62	62
	Heating	W	23	24	19	24	41	65	63
Airflow rate (H/M/L)		m^3/h	530/456/400	569/485/421	624/522/375	660/542/440	1150/970/830	1380/1100/870	1380/1100/870
Sound pressure level (H/M/L)		dB(A)	36/33/29	36/33/29	37/34/30	37/34/30	41/35/31	44/39/33	44/39/33
Sound power level (H/M/L)		dB(A)	47/45/42	47/45/42	48/46/43	48/46/43	52/47/44	55/51/46	55/51/46
Net dimension (WxHxD)		mm	840×545×212	840×545×212	1040×545×212	1040×545×212	1340×545×212	1340×545×212	1340×545×212
Packing dimension (WxHxD)		mm	939×639×305	939×639×305	1139×639×305	1139×639×305	1425×639×305	1425×639×305	1425×639×305
Net/gross weight		kg	21/25	21/25	28/33	28/33	32/38	32/38	35/39
Piping connections	Liquid/gas pipe	m^3/h	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ 25	OD Φ25	OD Φ25
Standard controller			Infrared remote controller						

Notes:
1. Nominal cooling capacities are based on the following conditions: return air temperature: 27° C DB, 19° CWB, outdoor temperature: 35° C DB, equivalent ref. Piping: 8 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal).
3. Specifications are measured at 10 Pa external static pressure.
4. Sound level is measured 1 m horizontally from the air outlet and 1 m vertically above the floor.

Floor Standing With Cabinet

Bottom Air Intake, DC Fan Motor

- Auto Restart Function
- Auto Defrosting
- Auto Addressing
- Independent Dehumidification
- Follow Me
- Anti-Cold Air Function
- Timer
- Infrared Controller

Fashion design

Fashion design fits perfect to conditioned room. Compact design with only 677 mm height and 220 mm depth saves space.

Easy maintenance

Filter is provided as a standard accessory. It can be removed and cleaned easily.

High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level.

Specification

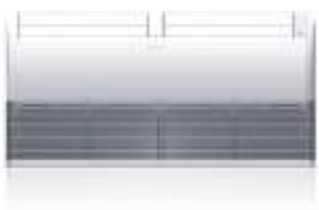
FSC-B Series

Model			FSC22-1B	FSC28-1B	FSC36-1B	FSC45-1B	FSC56-1B	FSC71-1B	FSC80-1B
Power supply			1-phase, 220-240 V, 50 Hz						
Capacity	Cooling	kW	2.2	2.8	3.6	4.5	5.6	7.1	8.0
	Heating	kW	2.4	3.2	4.0	5.0	6.3	8.0	9.0
Power input	Cooling	W	24	24	21	24	38	62	62
	Heating	W	23	24	19	24	41	65	63
Airflow rate (H/M/L)		m^3/h	530/456/400	569/485/421	624/522/375	660/542/440	1150/970/830	1380/1100/870	1380/1100/870
Sound pressure level (H/M/L)		dB(A)	36/33/29	36/33/29	37/34/30	37/34/30	41/35/31	44/39/33	44/39/33
Sound power level (H/M/L)		dB(A)	47/45/43	47/45/43	48/46/44	48/46/44	52/47/45	55/51/47	55/51/47
Net dimension (WxHxD)		mm	1000×677×220	1000×677×220	1200×677×220	1200×677×220	1500×677×220	1500×677×220	1500×677×220
Packing dimension (WxHxD)		mm	1182×683×312	1182×683×312	1382×683×312	1382×683×312	1682×683×312	1682×683×312	1682×683×312
Net/gross weight		kg	27.5/35.5	27.5/35.5	33/41.5	33/41.5	38.7/48	38.7/48	41/50
Piping Connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25	OD Φ 25	OD Φ25	OD Φ25
Standard controller			Infrared remote controller						

Notes:
1. Nominal cooling capacities are based on the following conditions: return air temperature: 27° C DB, 19° C WB, outdoor temperature: 35° C DB, equivalent ref. Piping: 8 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temperature.: 20° C DB, outdoor temperature: 7° C DB, 6° C WB, equivalent ref. Piping: 8 m (horizontal).
3. Specifications are measured at 0 Pa.
4. Sound level is measured 1 m horizontally from the air outlet and 1 m vertically above the floor.

Ceiling & Floor

With DC fan motor



- Auto Restart
- Anti-Cold Air Function
- Auto Addressing
- Auto Swing
- Timer
- LED Display
- Auto Defrosting
- Built-in Filter
- Easy-cleaning Panel
- Independent Dehumidification
- Follow Me
- Wired Controller

Thin and stylish design

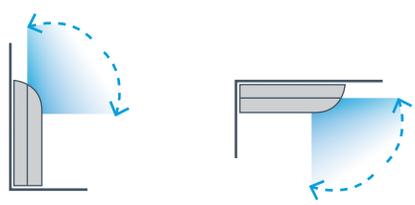
- Slim design ensures easy installation.
- Unit can be installed into a corner of narrow ceilings

Auto swing and wide angle air flow

- Two direction auto swing : vertical and horizontal.
- Wide angle air flow distribution allows comfort and even air distribution in room
- Three air flow speeds: low, medium with double air flaps.

High efficiency and low sound operation

Thanks to the DC brushless fan motor, the unit operates in high efficiency and low sound level. 25% to 50% lower power consumption when compared to units with AC fan motor.



Technical specifications

Model			CF36-1D	CF45-1D	CF56-1D	CF71-1D
Power supply			1-phase,220-240V,50Hz			
Capacity	Cooling	kW	3.6	4.5	5.6	7.1
	Heating	kW	4.0	5.0	6.3	8.0
Power input	Cooling	W	23	94	94	94
	Heating	W	23	94	94	94
Airflow rate (H/M/L)		m^3/h	550/480/420	930/830/720	930/830/720	930/830/720
Sound pressure level (H/M/L)		dB(A)	40/38/36	43/41/38	43/41/38	43/41/38
Sound power level (H/M/L)		dB(A)	51/50/49	54/53/51	54/53/51	54/53/51
Net dimension (W×H×D)		mm	990x203x660	990x203x660	990x203x660	990x203x660
Packaging dimension (W×H×D)		mm	1089x296x744	1089x296x744	1089x296x744	1089x296x744
Net/gross weight		kg	25/31	27/33	27/33	27/33
Piping connections	Liquid/gas pipe	mm	Φ6.35/Φ12.7	Φ6.35/Φ12.7	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			IRC (Infrared remote controller)			

Model			CF80-1D	CF90-1D	CF112-1D	CF140-1D
Power supply			1-phase,220-240V,50Hz			
Capacity	Cooling	kW	8.0	9.0	11.2	14.0
	Heating	kW	9.0	10.0	12.5	15.0
Power input	Cooling	W	126	126	130	130
	Heating	W	126	126	130	130
Airflow rate (H/M/L)		m^3/h	1280/1170/1050	1280/1170/1050	1890/1700/1580	1890/1700/1580
Sound pressure level (H/M/L)		dB(A)	45/43/40	45/43/40	47/45/42	47/45/42
Sound power level (H/M/L)		dB(A)	56/55/53	56/55/53	58/56/55	58/56/55
Net dimension (W×H×D)		mm	1280x203x660	1280x203x660	1670x244x680	1670x244x680
Packaging dimension (W×H×D)		mm	1379x296x744	1379x296x744	1764x329x760	1764x329x760
Net/gross weight		kg	33.5/40	33.5/40	49/57	49/57
Piping connections	Liquid/gas pipe	mm	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9	Φ9.53/Φ15.9
	Drain pipe	mm	OD Φ25	OD Φ25	OD Φ25	OD Φ25
Standard Controller			IRC (Infrared remote controller)			

Notes:

1. Nominal cooling capacities are based on the following conditions: return air temp.: 27°C DB, 19°C WB, outdoor temp.: 35°C DB, equivalent ref. Piping: 7.5 m (horizontal).
2. Nominal heating capacities are based on the following conditions: return air temp.: 20°C DB, outdoor temp.: 7°C DB, 6°C WB, equivalent ref. Piping: 7.5 m (horizontal).

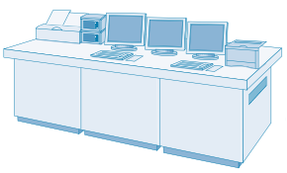
Control Systems

Network Control

Connectable To Various Sized Gateway

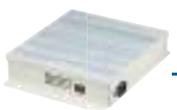
BVIM Software

Interface Gateway

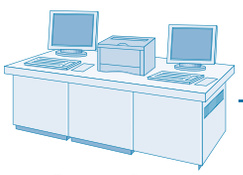


Lonworks Gateway

Lonworks Gateway Card

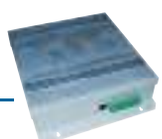


BMS-LON



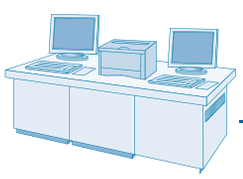
Bacnet Gateway

Bacnet Gateway Card



BMS-BAC

Web Monitoring System



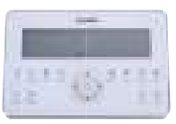
Modbus Gateway

Modbus Gateway Card

BMS-MOD

Centralised Control

Centralised Controller Touch style



CC-TS

X,Y,E

Indoor Centralised Controller

CC-WT

X,Y,E

Note: The wires in the diagram show the signal flows only, while not represent the actual connecting ways.

Individual Control

Wired Controller

WRC-HP
HWRC
WRC-HR

Remote Controller

IRC

Accessories

Card-key Interface HK-IM

HK-IM

Card-key

Wired Controller

Infrared Sensor IFS

Infrared Control Box

Infrared Sensor Module

Wired Controller

Outdoor Units

Wireless Remote Controller

IRC

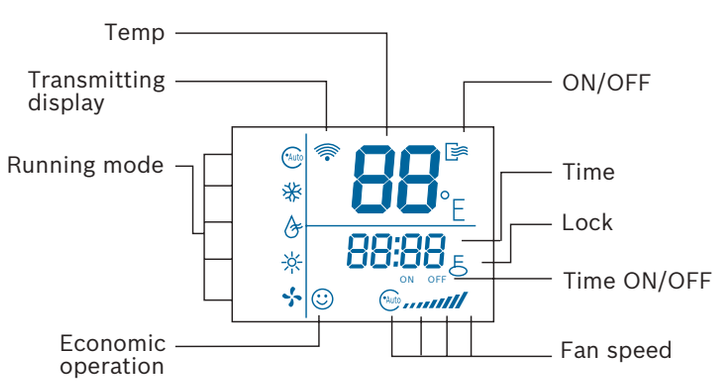
Functions

Portable device

The wireless remote controller is a portable control device that enables users to control the A/C anywhere within a distance of 11 m.

Simplified user interface

Users can synchronize the air conditioners' parameters with the display panel on the wireless remote controller to precisely control a room's environment.



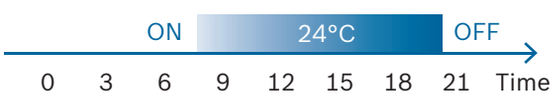
Background light

The background light allows users to operate the device in a dark room. The device lights up when a button is pressed, and turns off when a given operation is completed.

- Auto mode
- Dry mode
- HEAT mode
- COOL mode
- FAN mode
- Timer
- Lock
- Eco mode
- Address setting

Built-in timer

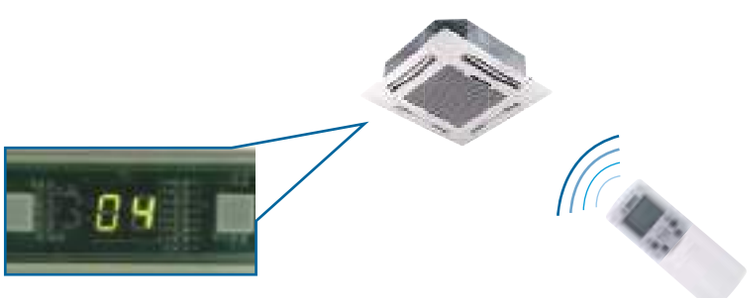
The built-in daily timer offers the convenience of automatically starting and stopping the system at set times.



The indoor unit is set to work in automode from 8:00 to 20:00.

Setting addresses

Besides the machine's auto addressing function, users can set the indoor unit's address on the wireless remote controller IRC.



Specifications

Model	IRC
Dimensions (H×W×D) (mm)	150×65×20
Power (V)	1.5 V (LR03/AAA) ×2

Wired Remote Controller

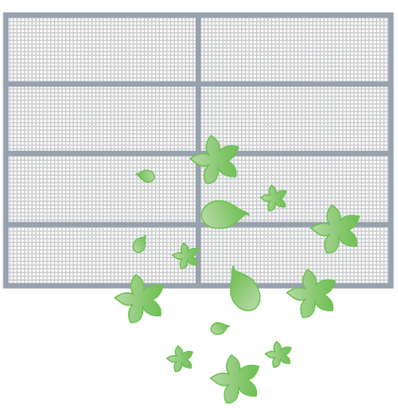
WRC-HP

- Auto mode
- Dry mode
- HEAT mode
- COOL mode
- FAN mode
- Silent mode
- Timer
- Lock
- Filter cleaning remind
- Follow Me
- Address setting

Functions

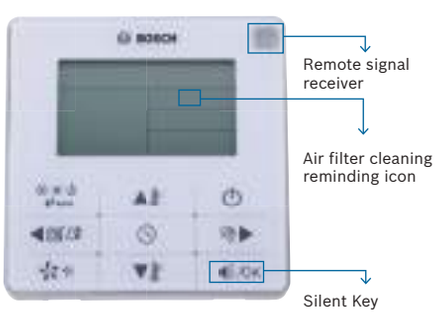
Air filter cleaning reminding

The wired controller records the total running time of the indoor unit. When the accumulated running time reaches the preset value, it will remind users need to clean the air filter of the indoor unit.
Cleaning the filter regularly can keep indoor air fresh and clean, good for your health.



Silent mode

Under the cooling, heating and auto mode, when operating the silent mode, it can reduce the running noise through setting the fan speed to low. This will help you bring a quieter environment.



WRC-HP
(Touch key)

Remote signal receiving function

WRC-HP provide a signal receiver for remote controller. Signal from remote controller can be received by a wired controller, then sent to the indoor unit and it conveniences to control.

Locking wired controller

The locking function can be used to prevent other people from using the controller.

Specifications

Model	WRC-HP
Dimensions (H×W×D) (mm)	120×120×20
Power (V)	DC 5V

Wired Remote Controllers

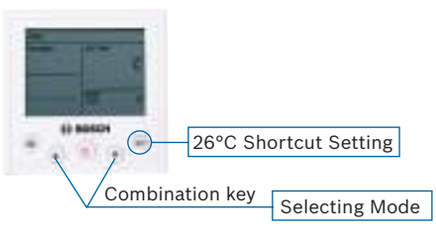
HWRC

WRC-HR

Functions

Wired Controller For Hotel Room – Mode Setting

Mode-button hidden controller: Press the temperature buttons "▲" and "▼" simultaneously for 3 seconds to select the operation mode: COOL and HEAT. The design is suitable for hotels, hospitals, schools and other similar types of buildings.



HWRC

Wired Controller For RDCI Series – Auto Mode

Under the auto mode of RDCI system, it can automatically switch to COOL or HEAT mode according to the temperature difference value between Tf (indoor temperature) and Ts (setting temperature)

WRC-HR

Specifications

Model	HWRC	WRC-HR
Dimensions (H×W×D) (mm)	86×86×18	120×120×20
Power (V)	DC 5V	

Centralized Controller

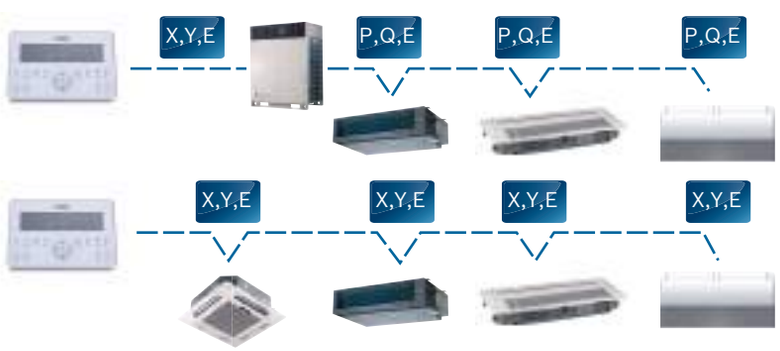
CC-TS

- COOL mode
- Swing
- Filter cleaning remind
- HEAT mode
- Cooling lock
- Net connection
- Keyboard lock
- Remote controller lock
- Timer
- FAN mode
- Heating lock

Functions

Centralized control

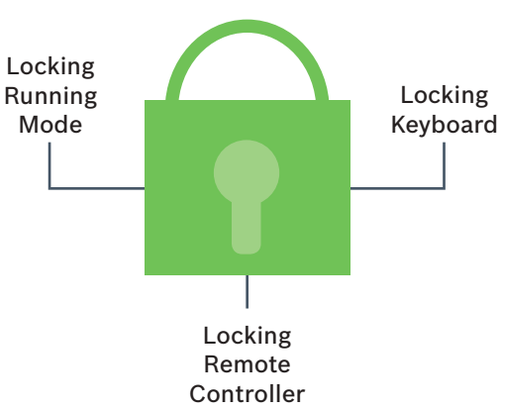
The centralized controller is a multifunctional device that can control up to 64 indoor units within a maximum connection length of 1,200 m. The device connects to the master outdoor units of Bosch's newly designed products to simplify and centralize the wiring configuration. The 2 ways of connecting are as follows:



*If it connects to XYE ports of master ODU, ODU must be set to auto addressing mode.

Three lock modes

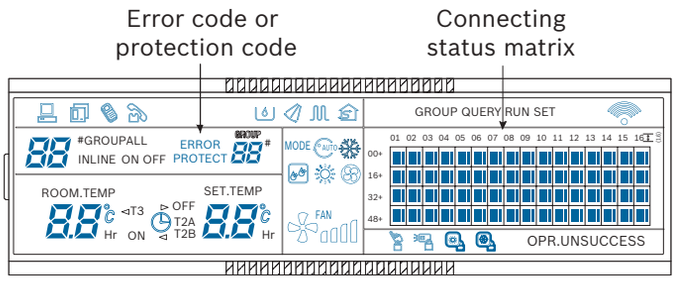
Centralized controller provides a superior way to manage the indoor units. Users are able to make their own choice from locking the wireless controller, locking the running mode or locking the centralized controller's keyboard as they wish.



Functions

Indoor unit working status display

The centralized controller displays indoor units' working status and error codes so users can easily identify faults via checking the error codes table in the user's manual before contacting a service engineer.



Air filter cleaning reminding function

The air filter cleaning reminding function is only available on the touch-key central controller CC-TS. The "FL" icon indicates that the air filter in a given indoor unit needs cleaning.

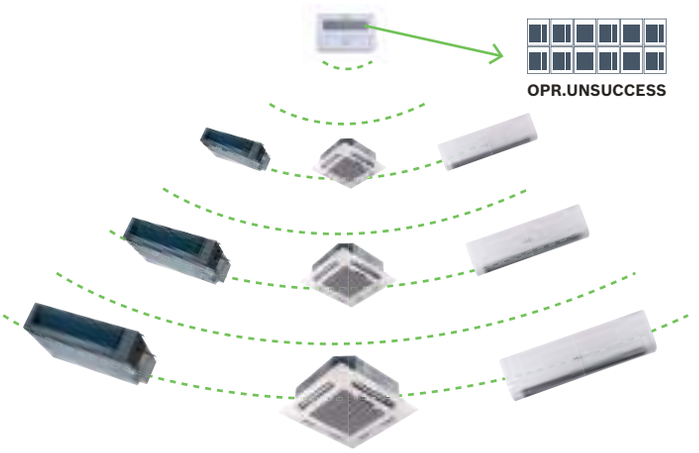
CC-TS

Stylish design

Stylish design suits high-end environments. The keyboard lock function is used to prevent operational mistakes.

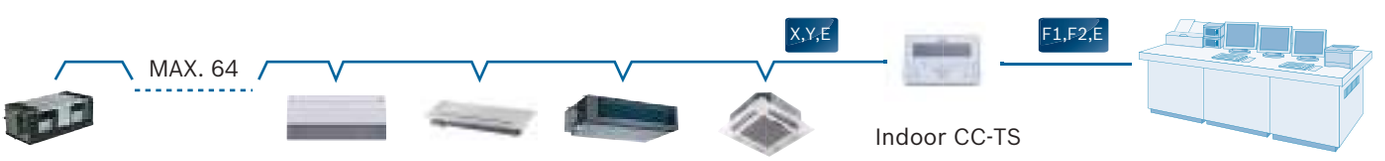
Single/unified control

The control object can be either a single unit or all units, which vastly simplifies the control process. Operation signal feedback ensures that all units are working in the correct mode.



Access to network monitoring

The centralized controller is able to bridge up to 64 indoor units on the network monitoring and building management systems.



Specifications

Model	CC-TS
Dimensions (H×W×D) (mm)	180×122×78
Power (V)	198–242 V (50 Hz)

Centralized Controller – Weekly Schedule

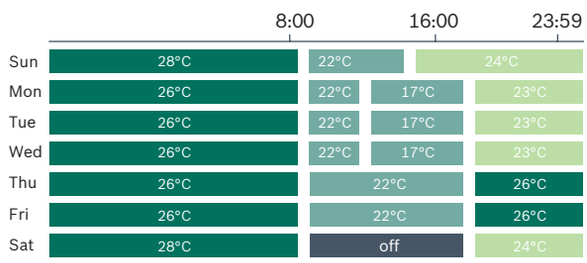
CC-WT

- Auto mode
- COOL mode
- HEAT mode
- FAN mode
- Dry mode
- Swing
- Weekly schedule
- Keyboard lock
- Cooling lock
- Heating lock
- Remote controller lock

Functions

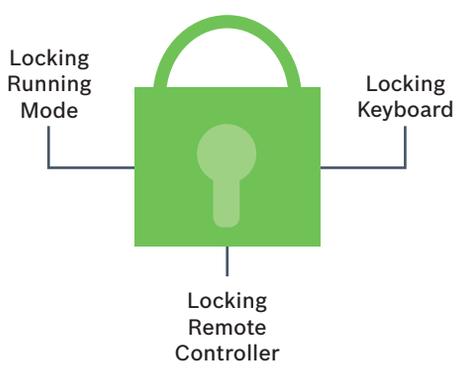
Weekly schedule

CC-WT can include up to 64 indoor units in the weekly schedule. Users can set up to 4 periods per day, and select the desired running mode and room temperature. The operating object can be a single indoor unit or all the indoor units.



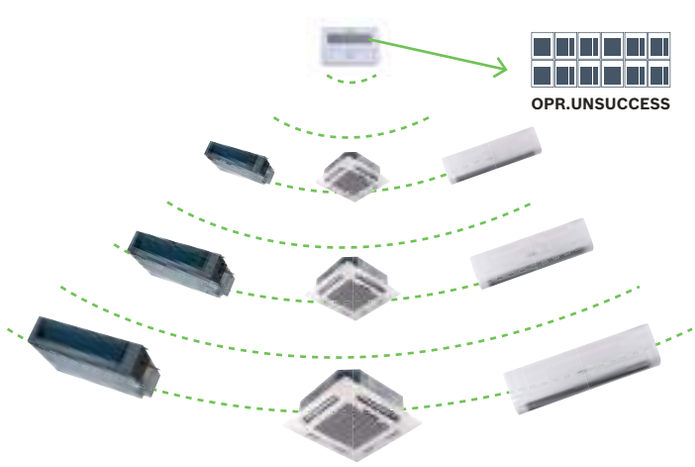
Three lock modes

Centralized controller CC-WT provides a superior way to manage the indoor units. Users are able to make their own choice from locking the wireless controller, locking the running mode or lock the CC-WT's keyboard as they wish.



Single/unified control mode

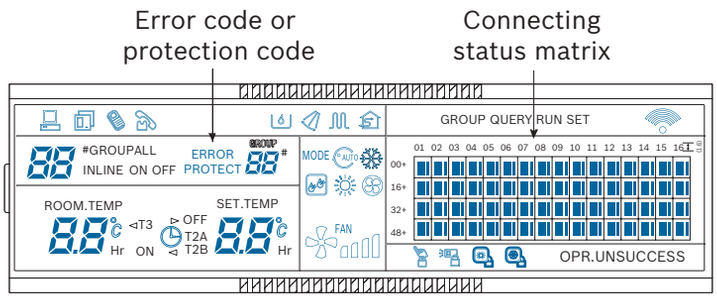
The control object can be either a single unit or all units, which vastly simplifies the control process. Operation signal feedback ensures that all units are working in the correct mode.



Indoor unit working status display

CC-WT displays indoor units' working status and error codes so users can easily identify faults via checking the error codes table in the user's manual before contacting a service engineer.

*If it connects to XYE ports of master ODU, ODU must be set to auto addressing mode.



Specifications

Model	CC-WT
Dimensions (H×W×D) (mm)	179×119×74
Power (V)	198–242 V (50 Hz)

Central Control Software

BVIM (Intelligent Manager of Bosch)

4th Generation Network Control System

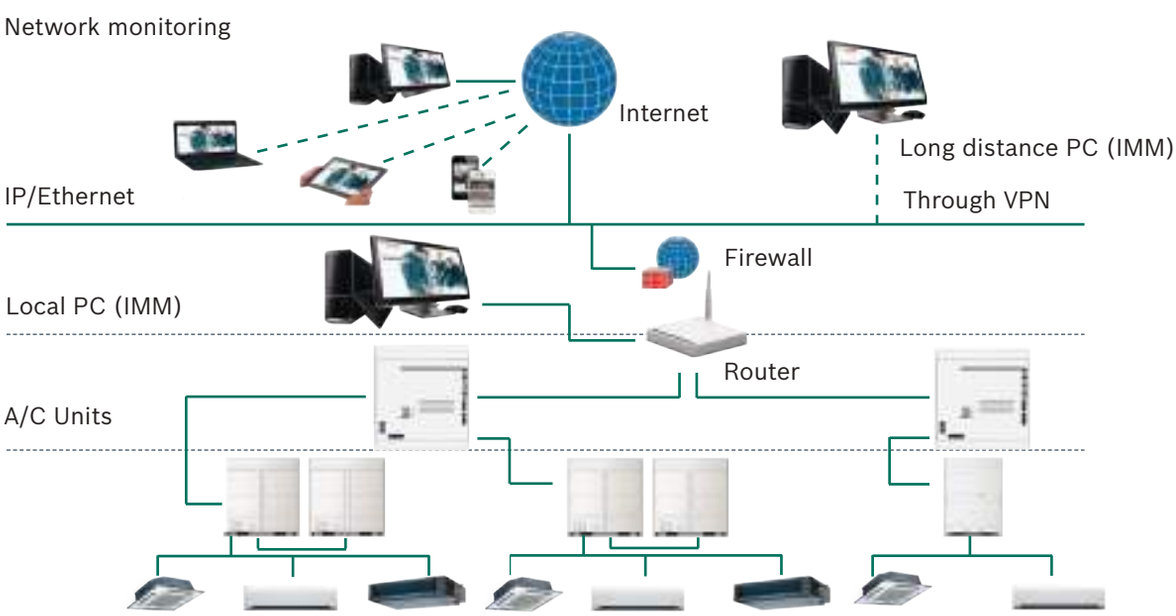
Functions

Intelligent Manager of Bosch, designed specifically to control VRF systems, is based on a centralized format and dedicated to the complete control and monitoring of all the system's functions. It can be used as a flexible multi-purpose system and applied to a variety of needs, according to the scale, purpose and control method of each building.

- Up to 4 interfaces, 64 refrigerant systems, 1,024 indoor units, and 256 outdoor units can be controlled by one PC.
- Web access
- User friendly operation
- Central building monitoring and control
- Energy saving management
- SMS modem (optional)
- Electricity charge distribution
- Schedule management
- Low-load operation indicator
- Generation of operational history reports (daily, weekly, monthly)
- Fault display & Warning message
- Air filter cleaning reminding function
- Emergency stop and Alarm signal output

Network Control Application

- Can run on Windows 7_32/64 bit, Windows XP_32 bit and Windows 8.
- Can monitor and control A/C anytime, anywhere by PC, iPhone, iPad and notebook computer.
- Supports WEB access: IE, Firefox, Safari and Chrome.
- Enables remote access through DSL, VPNs and so on.



Various Managements

Simple Operation and Management

Click & Operate, a user-friendly interface allows even non-experts to perform the building management system easily.

Data Management

Operational information of individual indoor units are monitored, allowing for distribution of power consumption at outdoor units. Stores operation data on multiple systems and displays it in graphical format for visual management. Uses BVIM software to generate tenant reports and help building owners bill for energy use.

Electricity Charge Distribution (Patented)

Provides information on proportional electrical power distribution to optimize electricity consumption management. Uses software to calculate electric power proportional distribution, output and save electricity consumption data for each indoor unit (or group) which is connected to the intelligent manager.
Applies the patented Bosch Calculation Method to calculate consumption rates according to capacity demand which is based on various parameters: setting temperature, room temperature, running mode, rated HP, public areas, unused rooms, and nighttime use; outputs this information on a charge calculation sheet to evenly divide power consumption charges among tenants.

Highlights

Web Access function

With the web access function, a PC, laptop computer or a smartphone can be used as a remote controller.

Schedule Control

Automatically performs facility start/stop control, switches the operating mode, sets temperatures and enables/disables the remote control according to the present time schedule. 4 sections and 20 actions per day for each single unit or group.

Energy Saving Management

Based on a predetermined schedule, the Intelligent Manager executes capacity control and intermittent operations on all air conditioning units to maintain a high comfort index.

Warning Message

The system can receive error messages from air conditioning units in more than one buildings or structures via public phone lines.

*Requires the Bosch "SMS Modem" to send automatic warning messages to designated phone numbers.

Visual Navigation

Clicking the jump button will display a list of all available screens. Clicking the back button will return to the previous screen.

Data Backup

The interface will automatically back up data on the installed SD card (2 GB) in case system failure occurs, such as: power failure or system dam. BVIM software also stores the previous 3 months' operational data on the HDD.

Multiple Languages

Provides seven language settings:
English, Russian, French, German, Italian, Spanish, Simple Chinese

Electricity Charge Distribution

Electricity charges can be easily divided when billing users for air conditioning power charges; for example, for tenants in a commercial building, offices in a rented building, or rooms in a hotel.

Accessories

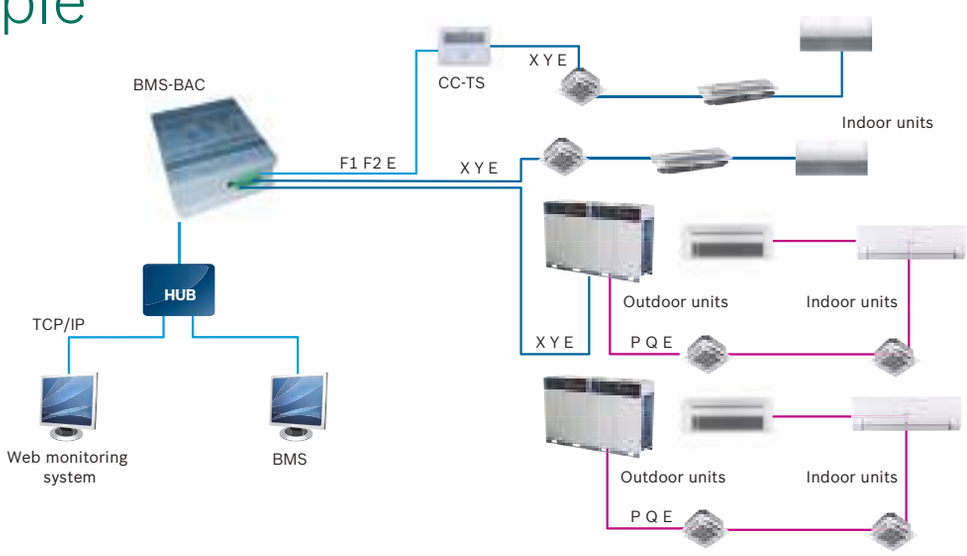
Bacnet Gateway Card

BMS-BAC

Contains 4 groups of RS485 communication ports and be able to connect up to 256 indoor units or 128 outdoor units to the BMS. Built-in WEB function.

Network example

Each port can connect to XYE ports of IDU/ODU or the K1K2E ports of the outdoor units. Each port can also connect to one centralized controller F1F2E ports.



*If it connects to XYE ports of master ODU, ODU must be set to auto addressing mode.

Monitoring units online

BMS-BAC allows users to track units' operational status and change their running parameters on Internet Explorer for maximum control convenience.

Wide compatibility

BMS-BAC has a wonderful adaptability to the BMS

	Company	BMS software	Brand
1	SIEMENS	APOGEE	
2	TRANE	Tracer Summit	
3	Honeywell	Alerton	
4	Schneider	Andover	
5	Johnson	METASYS	

Accessories

Modbus Gateway Card

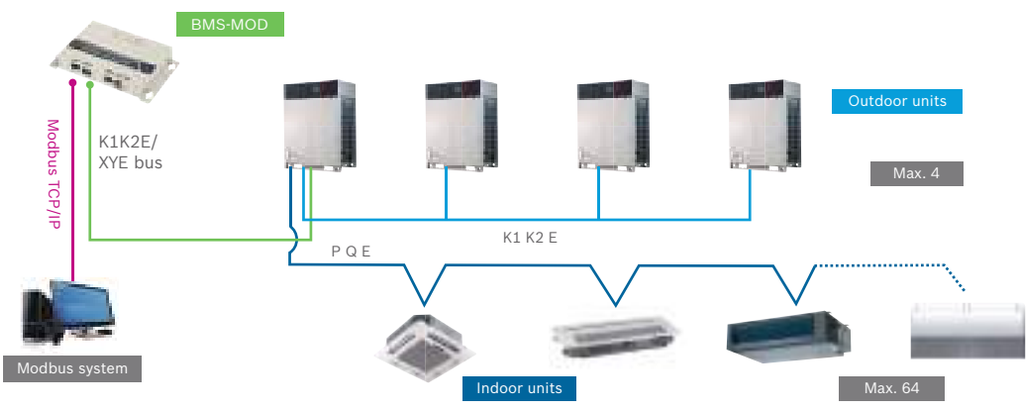
BMS-MOD

Supports Modbus protocol networks. Bridges the Bosch VRF system to BMS. Connect up to 64 indoor units or 16 indoor units and 4 outdoor units.* Built-in Web server function.

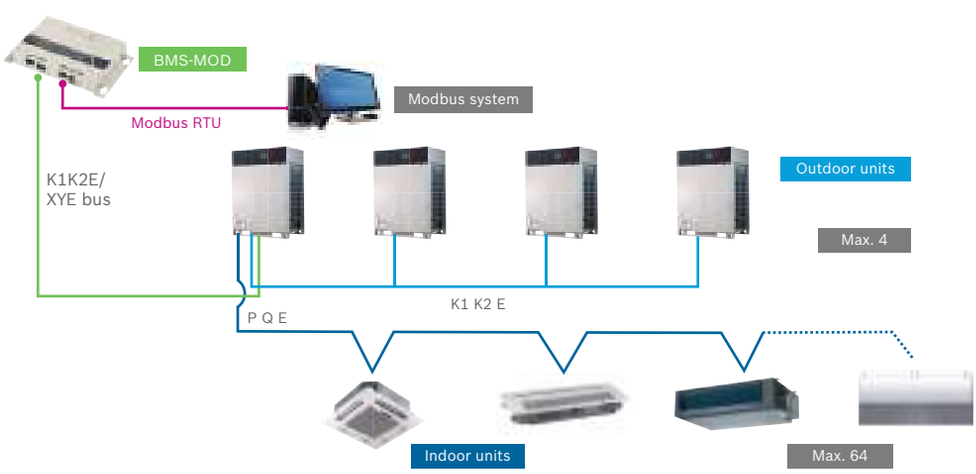
*4 outdoor units must be in the same system

Network example

1) TCP connection method



2) RTU connection method



*1. If it connects to XYE ports of master ODU, ODU must be set to auto addressing mode.
2. XYE and K1K2E must be connected hand by hand.

Config A/C System via Web

When the Modbus network is set, users can conveniently configure their A/C network system over the Internet using different TCP/IP browsers.

Accessories

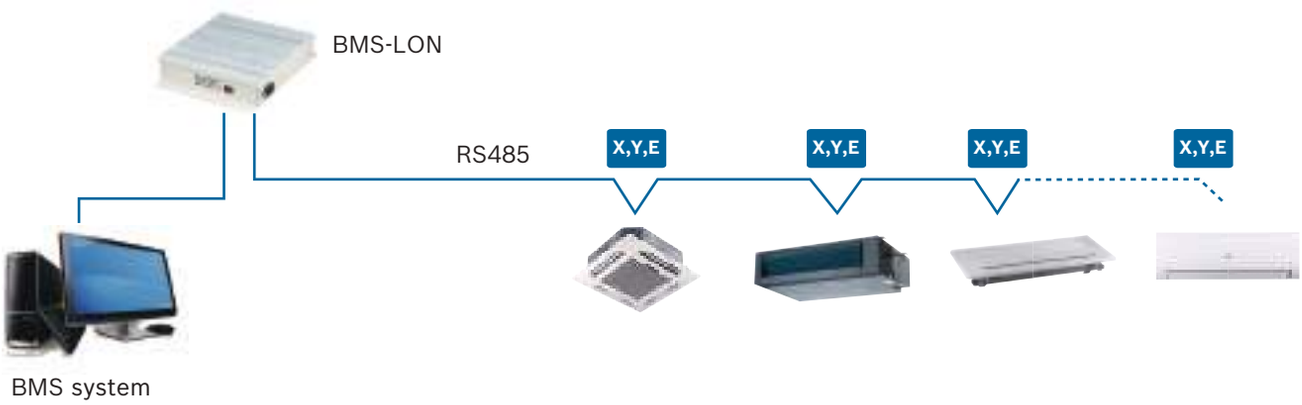
Lonworks Gateway Card

BMS-LON

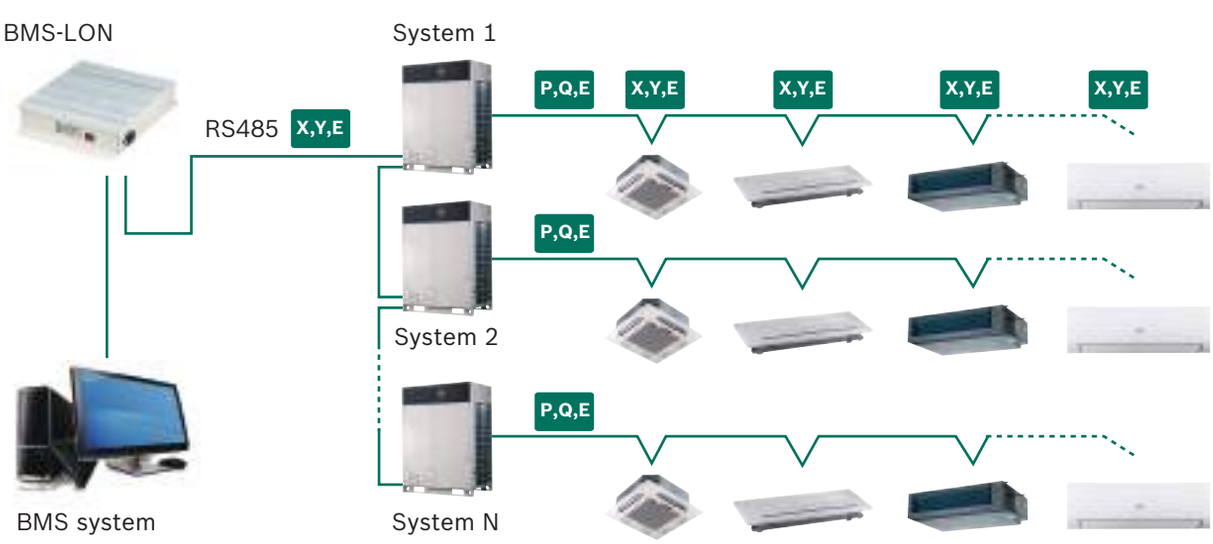
Comply with LonMark protocol, realizes the management and control of of VRF system. Can connect up to 64 indoor units to the BMS. Realizes non-polarity communication, and also the application can be downloaded online.

Network example

Connection method 1: Suitable for all of air conditioner systems and connects maximum 64 indoor units.



Connection method 2: Only suitable for SDCI series and connects maximum 64 indoor units.



Specifications

Model	BMS-LON
Dimensions (H×W×D) (mm)	319×251×61
Power (V)	177~265V AC (50 Hz)

Outdoor Unit Failure Alarm

ODU-FA

Functions

Simple design

ODU-FA is specially designed for engineering applications. It does not display the outdoor units working parameters, but it can be connected to the alarm device. When outdoor unit is working abnormally, the RUN light will flash.

Specifications

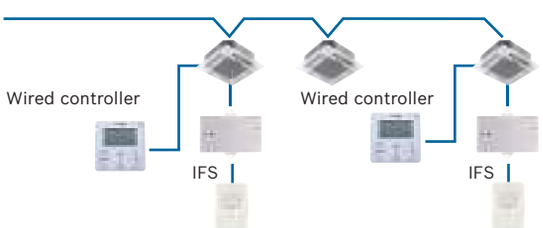
Model	ODU-FA
Dimensions (H×W×D) (mm)	150×85×70
Power (V)	198 – 242 V (50/60 Hz)

Infrared Sensing Controller

IFS

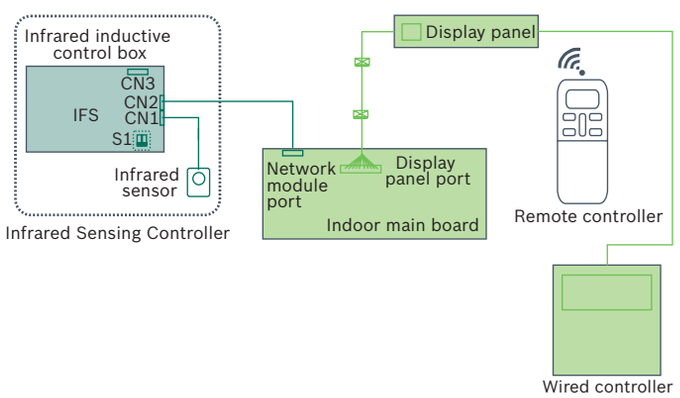
Automatically adjusts the room conditions.
Automatically extends the shutting down time, avoiding frequent ON/OFF.
Stylish appearance accommodates itself to different buildings.

Installation example



Remote controller or wired controller can control indoor unit.

Electrical wiring



Specifications

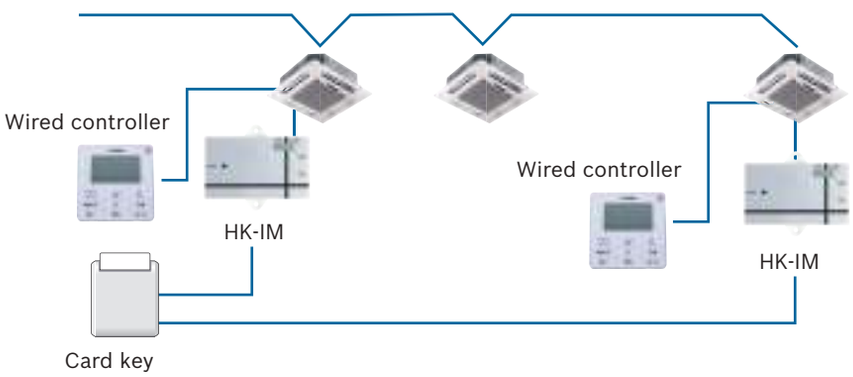
Model	IFS
Dimensions (H×W×D) (mm)	Sensor part: 46×30×25.6, Control box: 86×72.8×15.5
Power (V)	DC 5V

Hotel Card Key Interface Module

HK-IM

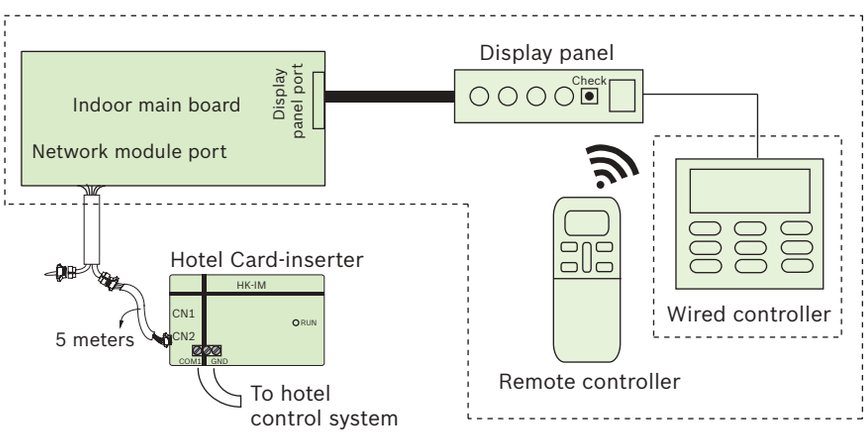
Cooperates with the wired controller to automate control.
Eliminates the need for high voltage power, making the device safe and steady.
Includes a build-in auto-restart function.
Remote controller or wired controller can control indoor unit.

Installation example



Electrical wiring

Hotel card key interface module



Specifications

Model	HK-IM
Dimensions (H×W×D) (mm)	86×72.8×15.5
Power (V)	DC 5V

Accessories

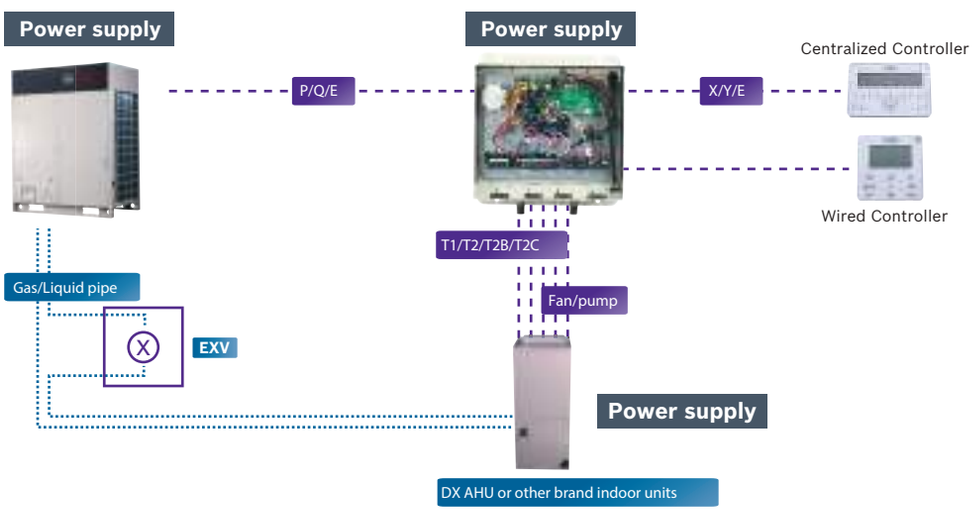
DX-AHU KIT

AHU KIT01-1/AHU KIT02-1/AHU KIT03-1

Can be used to connect VRF outdoor units with DX AHU or other brand indoor units.

Introduction

AHU KIT01-1/AHU KIT02-1/AHU KIT03-1 is an independent control box that can connect an AHU to SDCI series system to realize centralized control with SDCI system. Control box wiring is as follows:



Specifications

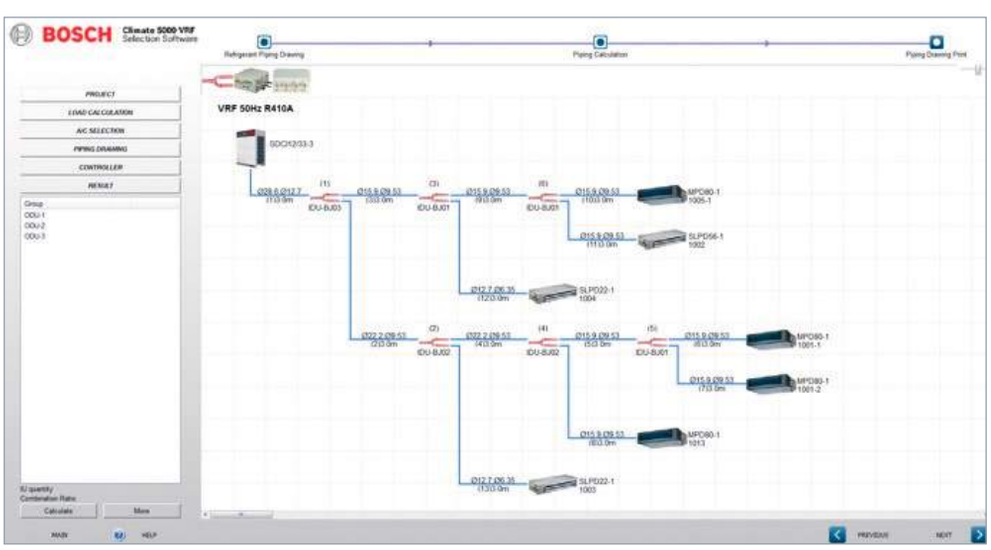
Model	AHU KIT01-1/AHU KIT02-1/AHU KIT03-1
Dimensions (H×W×D) (mm)	335×375×150
Power (V)	220 – 240V ~ 50 Hz

Selection software

To meet designers, consultants and installers requirements, Bosch has developed an advanced design automation tool that can be used in Windows-based version and online version (coming soon). The software provides quick and convenient selectable options for users, supports multiple languages, and greatly improves the selection process.

Windows Version

Load calculation: Provides two calculation methods (detailed room load calculation and rough load calculation). Indoor & outdoor units selection: There are versatile indoor units and different outdoor units for choosing. Piping drawing: Displays the detailed layout of an A/C system and the parameters for piping and branch distributors. Controller selection: Provides a selection of controllers for indoor units and outdoor units, including wireless and remote controllers for indoor units.
Report output: Outputs a comprehensive selection report as a Word and the material take off in Excel document.



Heat Recovery Ventilation Units (HRV)

Non-EU countries only

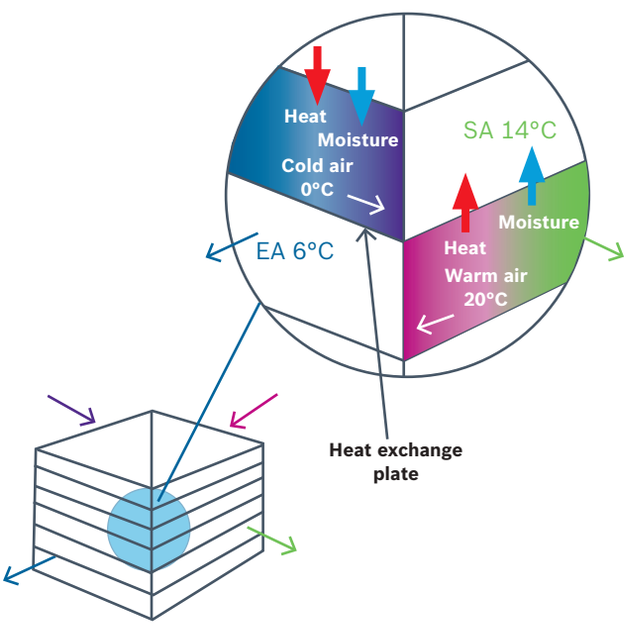
Larger air supply rate enhanced heat exchange efficiency enhanced energy saving

The heat recovery ventilation unit (HRV) can regain heat energy lost through ventilation and reduce the room temperature fluctuation caused by ventilation process. By utilizing the most advanced technology and technics, Bosch HRV has extremely good performance. The heat exchanger core is made of special paper processed with chemical treatment, which could realize better temperature and humidity control of the room environment.
Temperature exchange efficiency is above 65 % and enthalpy exchange efficiency between 50 – 65 %.

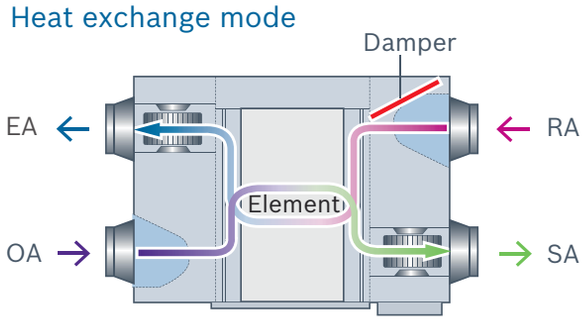
Model Names

HRV200-1
HRV300-1
HRV400-1
HRV500-1
HRV800-1
HRV1000-1

HRV1500-3
HRV2000-3



Heat exchange mode



RA (Return air from room)
SA (Supply air from room)
EA (Exhaust air to outdoors)
OA (Fresh air from outdoors)

Low noise

Sound proof material is used to guarantee quiet operation.

Compact design, flexible installation and easy maintenance

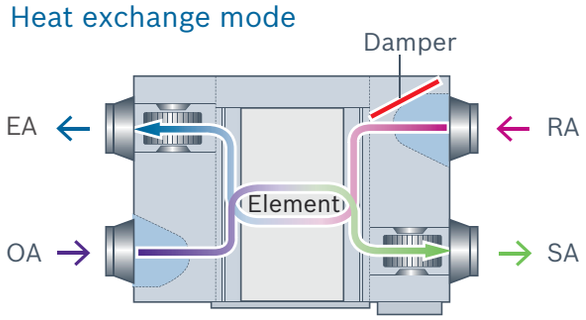
With a minimum height of only 264 mm and 23 kg weight, the unit provides best convenience and possibility for installation in limited spaces (HRV200-1 model).

Multi-modes for different Situations

Heat exchange mode

When air flow formed by the fans goes through the heat exchanged core in cross way, due to temperature difference between two channels of the core, thermal transmission happens naturally. In summer days, high temperature outdoor air gets cooled by indoor exhaust air; in winter, low temperature outdoor air gets heated by indoor exhaust air. So the energy contained in exhaust air can be reclaimed and energy efficiency gets improved.

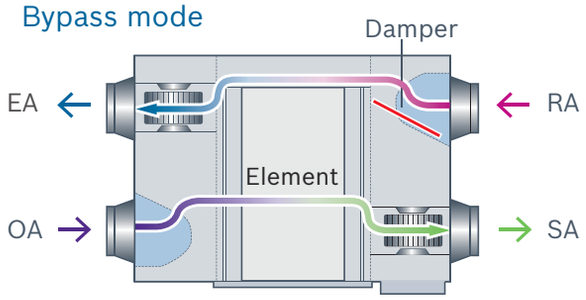
Heat exchange mode



Bypass mode

In mild climate areas or seasons, when temperature and humidity level difference between indoor and outdoor is small, the unit works as a conventional ventilation fan. Both supply fan and exhaust fan work at the same speed (Hi/mid/low/auto).

Bypass mode



Air supply mode

It is one kind of bypass mode with air supply fan speed higher than exhaust fan speed. It can be used in mild climate areas where a large amount of fresh air is needed.

Exhaust air mode

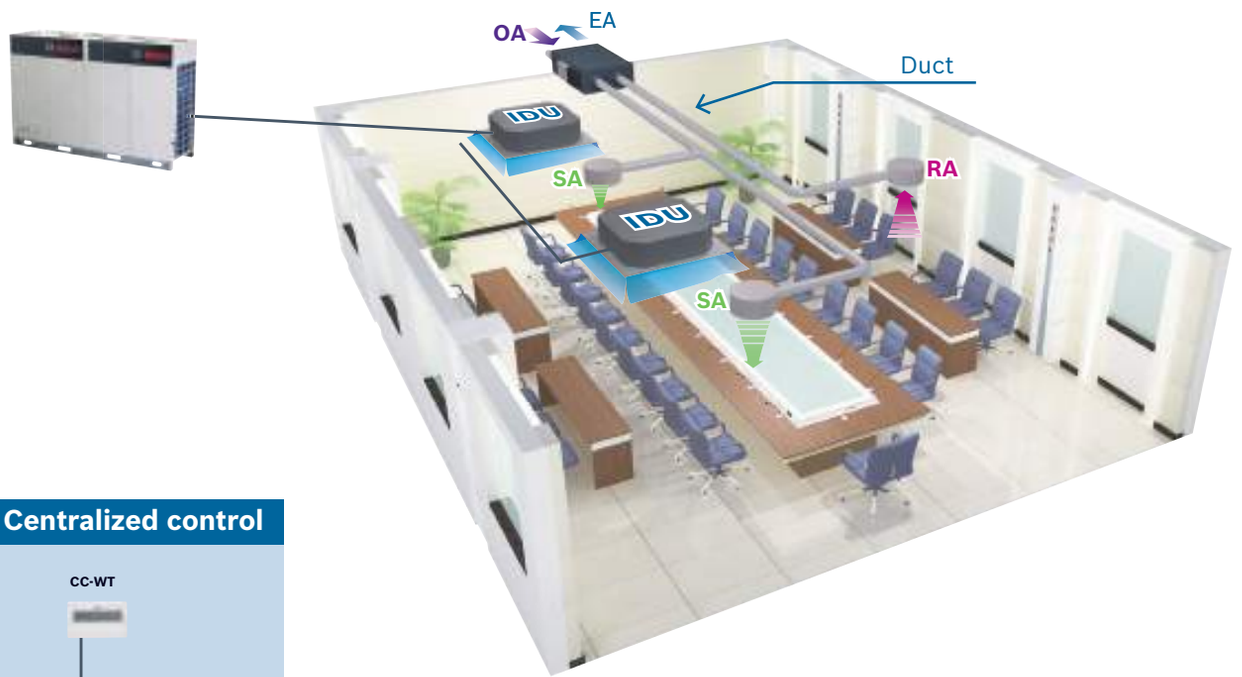
It is also one kind of bypass mode with exhaust fan speed higher than air supply fan speed. It can be used in mild climate areas where a large amount of exhaust air needs to be expelled.

Auto mode

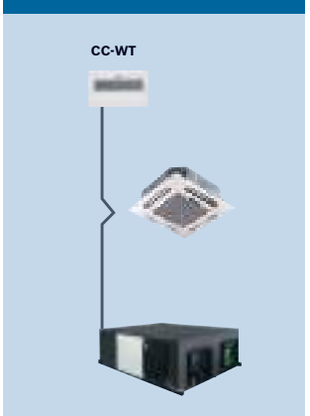
The controller chooses heat exchange mode or bypass mode according to the temperature difference between outdoor and indoor temperature. Both the two fans work at low speed.

Flexible Control

Interlocking control with other indoor units by controller is possible.



Centralized control



IDU = VRF Indoor Unit
SA = Supply Air
RA = Return Air
OA = Outdoor Air (Fresh Air)
EA = Exhaust Air

Specifications

Model				HRV200-1	HRV300-1	HRV400-1	HRV500-1
Power supply			V/Ph/Hz	220-240/1/50	220-240/1/50	220-240/1/50	220-240/1/50
Cooling	Temperature exchange efficiency	High	%	55	55	55	55
		Medium	%	55	55	55	55
		Low	%	60	60	60	60
	Enthalpy exchange efficiency	High	%	50	50	50	50
		Medium	%	50	50	50	50
		Low	%	55	55	55	55
Heating	Temperature exchange efficiency	High	%	60	60	60	65
		Medium	%	60	60	60	65
		Low	%	65	65	65	70
	Enthalpy exchange efficiency	High	%	55	55	60	60
		Medium	%	55	55	60	60
		Low	%	60	60	65	65
Sound pressure level	Heat exchange mode	High	dB(A)	27	30	32	35
		Medium	dB(A)	26	29	31	34
		Low	dB(A)	20	23	25	28
	Bypass mode	High	dB(A)	28	31	33	36
		Medium	dB(A)	27	30	32	35
		Low	dB(A)	22	25	27	30
Net dimension (W×D×H)			mm	866×655×264	944×722×270	944×927×270	1038×1026×270
Packing size (W×D×H)			mm	960×770×445	1020×810×452	1020×1020×452	1120×1120×452
Net/gross weight			kg	23/40	26/44	31/52	41/64
Casing				Galvanized steel plate			
Heat exchange system				Air to air cross flow total heat (sensible heat + latent heat) exchange			
Heat exchange element material				Specially processed nonflammable paper			
Fan	Type			Centrifugal fan			
	Airflow rate	High	m^3/h	200	300	400	500
		Medium	m^3/h	200	300	400	500
		Low	m^3/h	150	225	300	375
	ESP	High	Pa	75	75	80	80
		Medium	Pa	58	60	65	68
		Low	Pa	35	40	43	45
	Motor output		W	20	40	80	120
Duct diameter			mm	Φ144	Φ144	Φ144	Φ194
Operating temperature range			°C	-7~43 DB, 80% RH or less			

Notes:

1. For the units model of HRV (200–1000), there are 3-speed adjustable air volume (Hi, Med, Low), but for the units model of HRV (1500–2000), there are only 1-speed which cannot be adjusted.
2. Sound level is measured at 1.4m below the center of the body in an anechoic chamber.
3. Efficiency is measured under the following conditions:

* Cooling Condition: Air Exhaust Temp. 27° C DB, 19.5° C WB., Fresh Air Temp. 35° C DB, 28° C WB.

* Heating Condition: Air Exhaust Temp. 21° C DB, 13° C WB., Fresh Air Temp. 5° C DB, 2° C WB.

Model				HRV800-1	HRV1000-1	HRV1500-3	HRV2000-3
Power supply			V/Ph/Hz	220-240/1/50	220-240/1/50	380-415/3/50	380-415/3/50
Cooling	Temperature exchange efficiency	High	%	55	55	55	55
		Medium	%	55	55	–	–
		Low	%	60	60	–	–
	Enthalpy exchange efficiency	High	%	50	50	50	50
		Medium	%	50	50	–	–
		Low	%	55	55	–	–
Heating	Temperature exchange efficiency	High	%	65	65	65	65
		Medium	%	65	65	–	–
		Low	%	70	70	–	–
	Enthalpy exchange efficiency	High	%	60	60	60	60
		Medium	%	60	60	–	–
		Low	%	65	65	–	–
Sound pressure level	Heat exchange mode	High	dB(A)	39	40	51	53
		Medium	dB(A)	38	39	–	–
		Low	dB(A)	32	33	–	–
	Bypass mode	High	dB(A)	40	41	52	54
		Medium	dB(A)	39	40	–	–
		Low	dB(A)	34	35	–	–
Net dimension (W×D×H)			mm	1286×1006×388	1286×1256×388	1600×1270×540	1650×1470×540
Packing size (W×D×H)			mm	1380×1100×573	1400×1370×573	1710×1410×720	1760×1610×720
Net/gross weight			kg	62/88	79/110	163/224	182/247
Casing				Galvanized steel plate			
Heat exchange system				Air to air cross flow total heat (sensible heat + latent heat) exchange			
Heat exchange element material				Specially processed nonflammable paper			
Fan	Type			Centrifugal fan			
	Airflow rate	High	m^3/h	800	1000	1500	2000
		Medium	m^3/h	800	1000	–	–
		Low	m^3/h	600	750	–	–
	ESP	High	Pa	100	100	160	170
		Medium	Pa	82	85	–	–
		Low	Pa	54	58	–	–
	Motor output		W	360	360	450	450
Duct diameter			mm	Φ242	Φ242	346×326	346×326
Operating temperature range			°C	-7~43 DB, 80 % RH or less			

Notes:

1. For the units model of HRV (200–1000), there are 3-speed adjustable air volume (Hi, Med, Low), but for the units model of HRV (1500–2000), there are only 1-speed which cannot be adjusted.
2. Sound level is measured at 1.4 m below the center of the body in an anechoic chamber.
3. Efficiency is measured under the following conditions:

* Cooling Condition: Air Exhaust Temp. 27° C DB, 19.5° C WB., Fresh Air Temp. 35° C DB, 28° C WB.

* Heating Condition: Air Exhaust Temp. 21° C DB, 13° C WB., Fresh Air Temp. 5° C DB, 2° C WB.

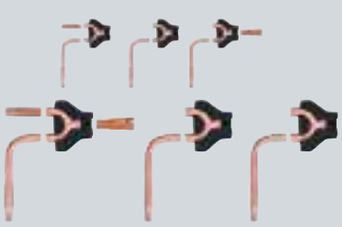
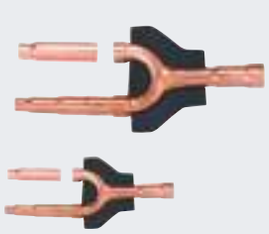
Joints

Joints
Dimensions

94 ▶ Joints
96 ▶ Dimensions

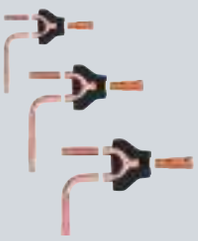
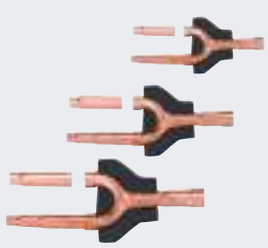
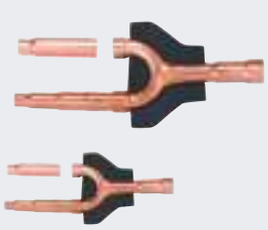
Joints

Branch joints of two-pipe system (Heat Pump VRF)

Model	Appearance	Model name	Packing Size (mm)/ Gross Weight (kg)	Description
Branch joint for outdoor unit		ODU-BJ02	255×150×185/1.5	For two outdoor units connection
		ODU-BJ03	345×160×285/3.4	For three outdoor units connection
		ODU-BJ04	475×165×300/4.8	For four outdoor units connection
Branch joint for indoor unit		IDU-BJ01	290×105×100/0.4	X <16.6 kW
		IDU-BJ02	290×105×100/0.6	16.6 ≤ X <33 kW
		IDU-BJ03	310×130×125/0.9	33 kW ≤ X <66 kW
		IDU-BJ04	350×180×170/1.5	66 kW ≤ X <92 kW
		IDU-BJ05	365×195×215/1.9	92 kW ≤ X

X: The total capacity of indoor units which is connected to this branch joint

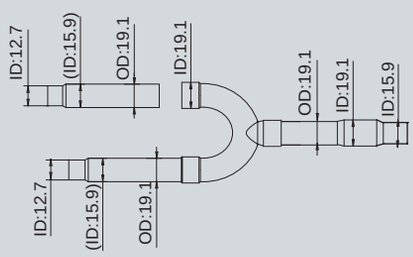
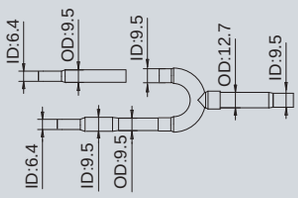
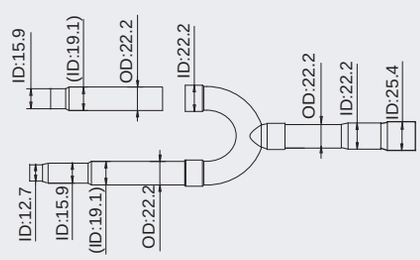
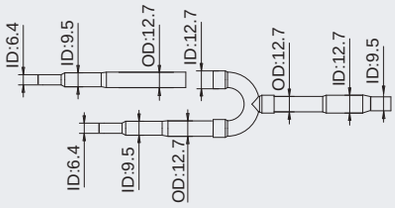
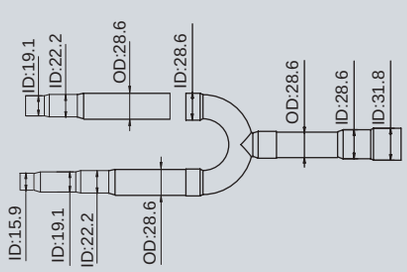
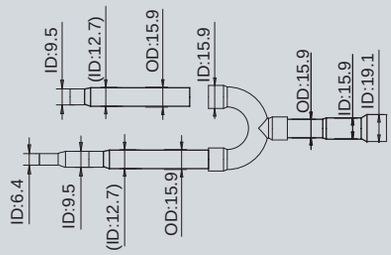
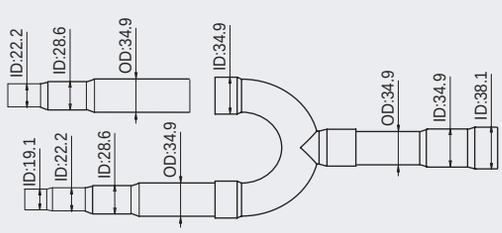
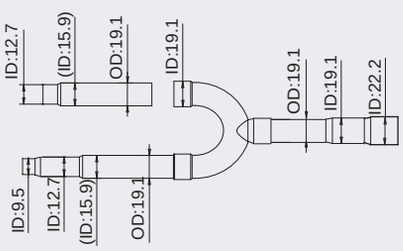
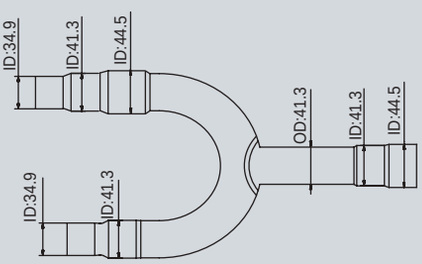
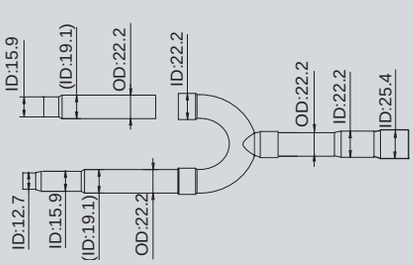
Branch joints of three-pipe system (Heat Recovery VRF)

Model	Appearance	Model name	Packing Size (mm)/ Gross Weight (kg)	Description
Branch joint between outdoor unit		ODU-BJR02	272×167×232/2.2	For two outdoor units connection
		ODU-BJR03	472×157×312/5.0	For three outdoor units connection
		ODU-BJR04	745×160×335/7.5	For four outdoor units connection
Branch joint between SBOX and outdoor unit		IDU-BJR01	257×127×107/0.8	X <16.6 kW
		IDU-BJR02	287×137×107/0.9	16.6 ≤ X <33 kW
		IDU-BJR03	297×167×177/1.4	33 kW ≤ X <66 kW
		IDU-BJR04	372×197×187/2.3	66 kW ≤ X <92 kW
		IDU-BJR05	432×222×227/3.3	92 kW ≤ X
Branch joint between SBOX and indoor unit		IDU-BJ01	290×105×100/0.4	X <16.6 kW

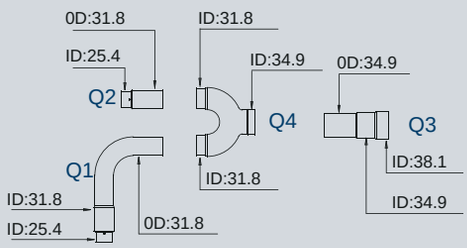
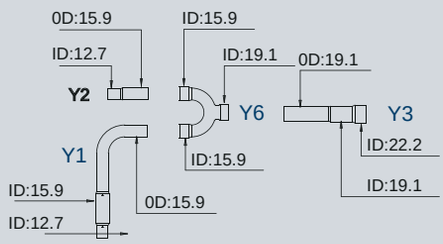
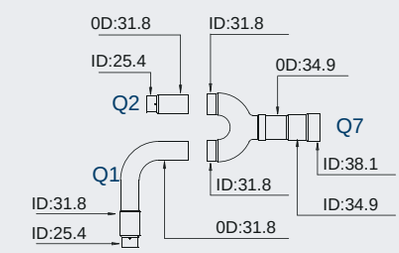
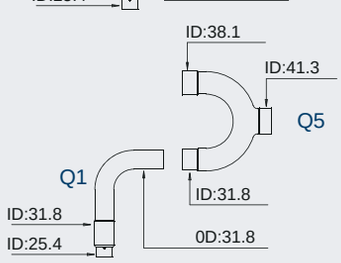
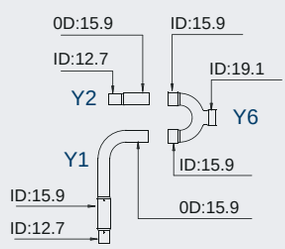
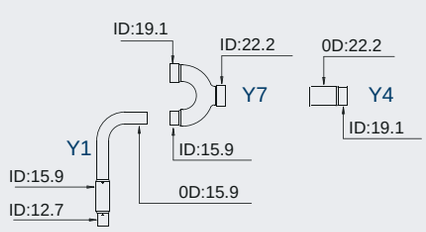
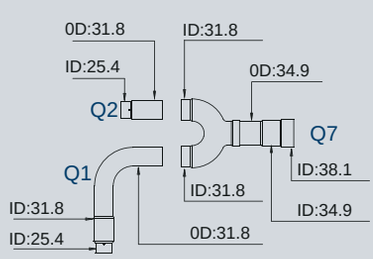
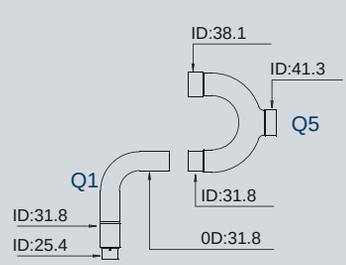
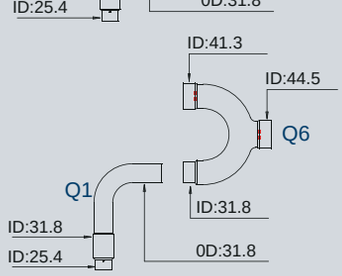
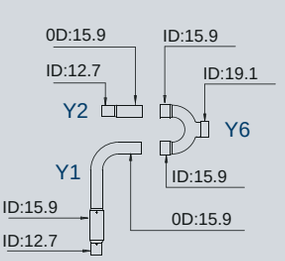
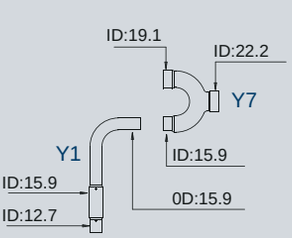
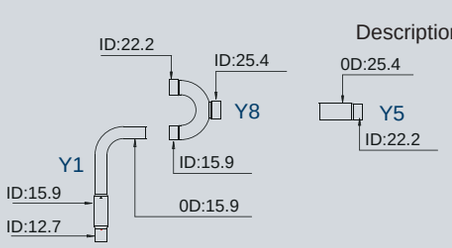
X: The total capacity of indoor units which is connected to this branch joint

Dimensions

Indoor branch joints

Branch model	Gas side joints	Liquid side joints
IDU-BJ01		
IDU-BJ02		
IDU-BJ03		
IDU-BJ04		
IDU-BJ05		

Outdoor branch joints

Branch model	Gas side joints	Liquid side joints
ODU-BJ02		
ODU-BJ03	 	 
ODU-BJ04	  	  

Robert Bosch S.A.
Bosch termotecnología
El Cacique 0258, Providencia
Santiago
Chile

Tel.: + 56 22 4055 500
Email: termotecnologia.info@cl.bosch.com
www.bosch-climate.cl

© Bosch Thermotechnik GmbH, 2017
Las imágenes son sólo ejemplos |
Nos reservamos el derecho a realizar
cambios | 09/2017