

**INVERTER PACKAGED  
AIR-CONDITIONER**

For a better tomorrow  
High performance Air conditioner



# New Inverter Series

All models employ R410A, with RoHS\* directive



**RoHS**

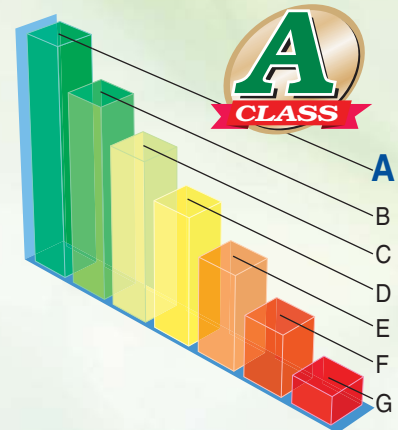
\*RoHS : Restriction of Hazardous Substances

## Industry Leading COP

Thanks to achievement of the highest COP level in the industry, the energy consumption has been cut by 30~49% compared with our former models (constant speed models).

## Energy labeling "Class A"

MHI models have cleared the class A standard, the highest energy saving level, with their high COP (coefficient of performance).



## Achieved COP 5.67

based on 50% capacity of FDT100V (inverter model) in heating operation

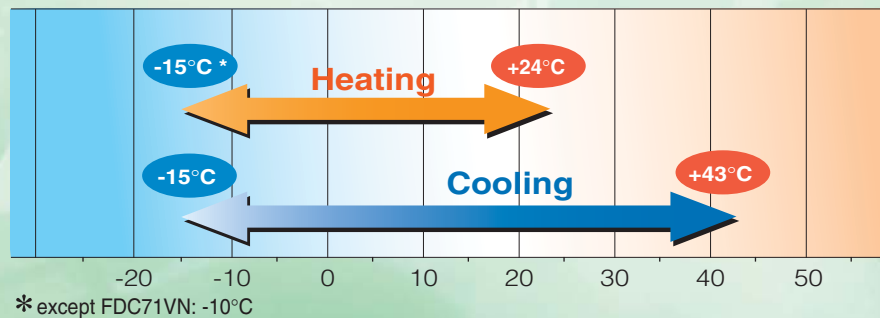
Air-conditioners are generally selected with the operation under the most severe ambient temperature conditions. The inverter constantly adjusts compressor output to meet the exact demand of the indoor units.

i.e. In case that selecting the capacity of an inverter air-conditioner based on heating operation at  $-5^{\circ}\text{C}$ , its capacity drops by 50% at  $7^{\circ}\text{C}$  (ISO-TI measurement condition) and operation period at 50% capacity is normally longer than that at 100% of nominal heating capacity.

Considering annual electrical power consumption of inverter air-conditioners, it is quite important to give the first priority to 50% actual capacity and selecting inverter air-conditioners is the best solution for saving energy and protecting the environment.

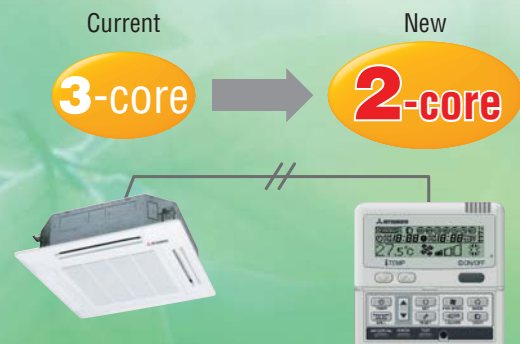
## Wide range of operation

Heating and cooling operation at  $-15^{\circ}\text{C}$   
Our new advanced technology has expanded the heating and cooling operation range.  
This permits installation of the units considering a heating and cooling operation under a low outdoor temperature conditions down to  $-15^{\circ}\text{C}$ .



## New remote control for all indoor units

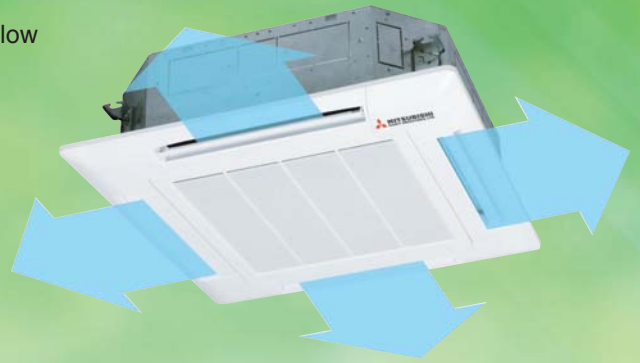
Applying nonpolar 2-core in new remote control line, it is very convenient for installation including renewal case.



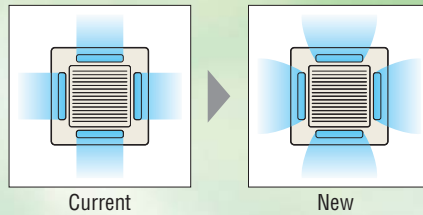
## Individual flap control system

According to room temperature conditions, four directions of air flow can be controlled by individual flap as preferred.

As individual flap control is available even after installation, installation area became wider than before.



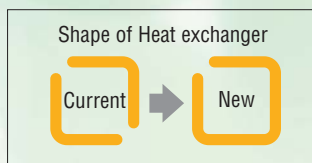
Due to optimization of outlet design of air flow with our new advanced technology, sufficient air flow is secured and long reach of air flow is realized.



## The thinnest design

Thanks to new design of heat exchanger changed from 2 parts to 1 part, the height of indoor unit is reduced drastically.

Furthermore applying DC fan motors, the highest energy efficiency level, reduction of weight and significant compact design are realized.



## High efficiency

### • Reduction of air flow pressure loss

Expansion of outlet air flow area realizes reduction of pressure loss caused by air flow in the indoor unit. Load of fan motor is decreased and efficiency is increased.

### • Increase of heat transfer efficiency

Applying high efficient piping in heat exchanger and optimization of heat exchanger (2parts → 1part) increases heat transfer efficiency.

## New outdoor units SRC50/60ZHX-S

SRC50/60ZHX-S is common for both of outdoor units of SRK50/60ZHX-S and 1.5, 2, 2.5HP of Inverter Packaged Air-Conditioners. Common components make for easy inventory control and the installation procedure will be the same.



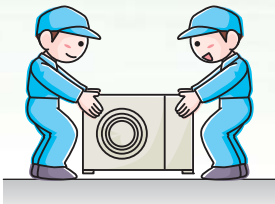
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# Industry leading energy efficiency and



Easy installation



Reduction in weight (kg)

	Former model	New model	Reduction
3.0HP	63	60	-3
4.0HP	82	74	-8
5.0HP	118	74	-44
6.0HP	125	74	-51
8.0HP	225	122	-103
10.0HP	225	140	-85

\* Comparison with former models

Fits into elevators



Reduction in volume (%)

	Former model	New model	Reduction
3.0HP	253	224	11%
4.0HP	328	303	8%
5.0HP	467	303	35%
6.0HP	467	303	35%
8.0HP	1643	467	72%
10.0HP	1643	540	67%

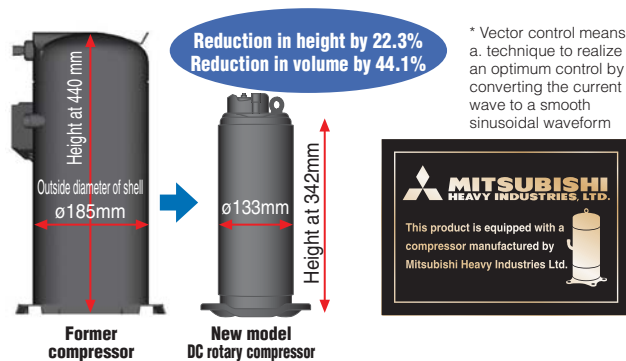
\* Comparison with former models

## Compact Design

### Size reduction and high efficiency performance on the DC twin rotary compressor(4-6HP)

Employment of DC twin rotary compressor has enabled to utilize a high-speed range of up to 120 rps at the maximum to secure the required capacity.

Optimum compressor control has been realized by employing the vector control\* and the starting current has been improved significantly compared with former models. Moreover, vibration has been reduced.

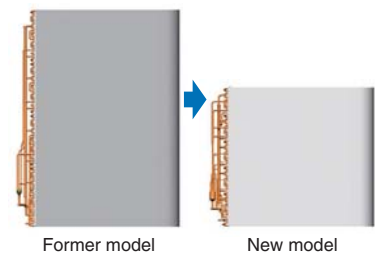


\* Vector control means a technique to realize an optimum control by converting the current wave to a smooth sinusoidal waveform

### Improved efficiency of heat exchanger

Redesigning the fins to a straight shape has reduced the pressure loss of the airflow in the heat exchanger. Surface treatment on the fin has enhanced the frost resistance capacity compared with former models.

Owing to the reduction in the size of heat exchanger, the appropriate number of circuits for each HP has been applied. Employment of a high-speed motor has increased the airflow and enabled to keep the cooling capacity under a condition of higher outdoor air temperatures\*.



\* Limitation of use is around 43°C at the maximum.

### Employment of the inverter compressor(8/10HP)

A control over wide range of capacity and a high efficiency has been realized by inverter-driven scroll compressors.

In addition, the starting current significantly is improved.

The size has also been reduced by 3.2% in height and 31.8% in volume.

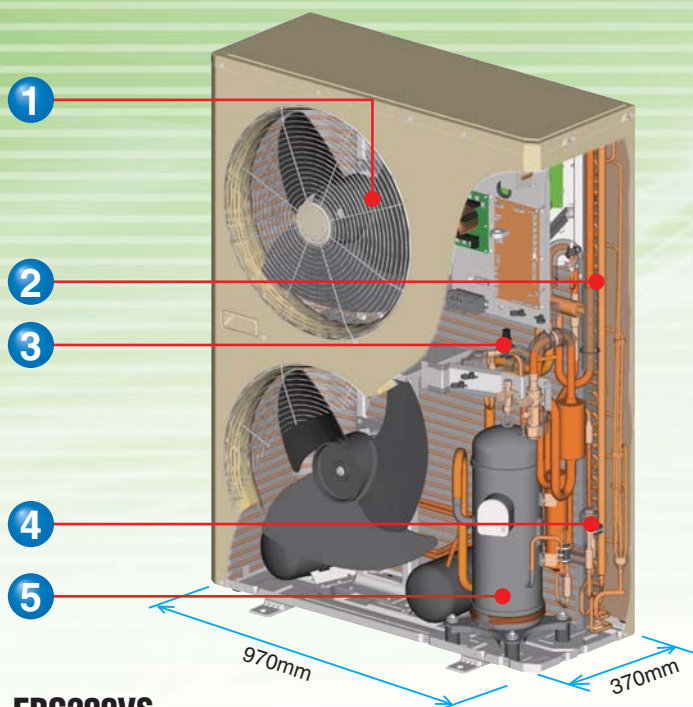
### Employment of DC fan motor

Employment of DC fan motor has enabled to realize an excellent efficiency of approx. 60% higher than former models.

### Controllability

Reliability in the protection of compressor has been improved by optimizing the controls of oil return, electronic expansion valve, etc.

# high reliability from our high technology

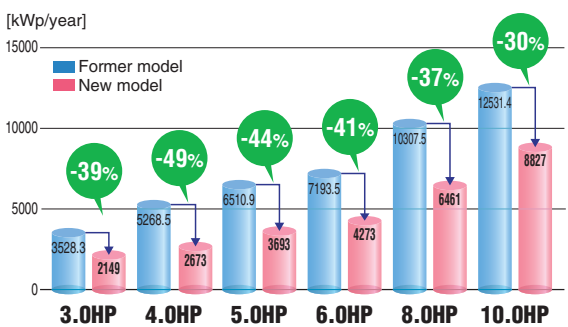


**FDC200VS**  
(8.0HP)

- POINT 1** DC fan motor uses less energy
- POINT 2** Optimization of heat exchanger path. More efficient heating and cooling
- POINT 3** Super heat control with low pressure sensor, works better in tough conditions
- POINT 4** High efficiency refrigeration circuit
- POINT 5** Newly developed High efficiency DC scroll compressor

## High Efficiency

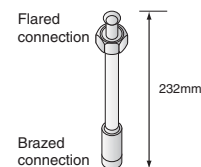
New Inverter Technology means a 30~49% decrease in annual energy consumption.



Calculation condition: based on JRA4048 place: Tokyo, type of the room: shop

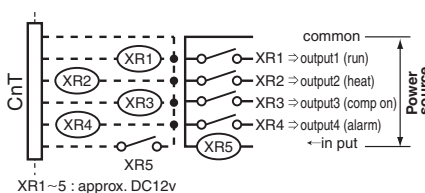
## Installation workability (8&10HP)

Using piping attachment that has flared connection and brazed connection ends, there is no need conduct brazing work inside the outdoor unit.



## Convenience

A dry contact is equipped on an indoor unit to meet a possible need for signal output on the site.



## Consideration on the Environment

### Employment of lead-free solder

#### Adapt to RoHS

In order to comply with RoHS standard, the new inverter series products use lead-free solder. It was considered to be too difficult to use lead-free solder because it requires higher soldering temperatures at assembling, which could jeopardize the reliability of assembly, etc. PbF soldering method developed by MHI, however, has enabled a higher reliability for lead-free printed circuit boards.

\*"RoHS" is the abbreviation of the new European standard, which means reduction of hazardous substances.
















### Employment of the new refrigerant **R410A**

All models of the New inverter series use a new refrigerant R410A characterized by the ozone depletion coefficient being 0.




















### Energy Conservation

A High Performance and Excellent Energy Conservation are achieved at the same time by an increased capacity of heat exchanger and employment of high efficiency DC motor etc.

# SINGLE [OUTDOOR UNIT : INDOOR UNIT = 1 : 1]

Type		Capacity			
		HP	2.0	2.5	
		kW	5.0	6.0	
		Btu	17,100	19,100	
		kcal	4,300	4,816	
CEILING CASSETTE	<b>4way FDT</b> 	Indoor unit			
			FDT40V	FDT50V	FDT60V
		Outdoor unit			
		1phase	SRC40ZHX-S	SRC50ZHX-S	SRC60ZHX-S
		3phase			
	Set	1phase	<b>FDT40ZH XV</b>	<b>FDT50ZH XV</b>	<b>FDT60ZH XV</b>
		3phase			
	<b>4way compact (600 x 600mm) FDTC</b> 	Indoor unit			
			FDTC40V	FDTC50V	
		Outdoor unit			
1phase		SRC40ZHX-S	SRC50ZHX-S		
Set		1phase	<b>FDTC40ZH XV</b>	<b>FDTC50ZH XV</b>	
DUCT CONNECTED	<b>High Static pressure FDU</b> 	Indoor unit			
		Outdoor unit			
		1phase			
		3phase			
		Set	1phase		
		3phase			
	<b>Low/Middle Static pressure FDUM</b> 	Indoor unit			
				FDUM50V	FDUM60V
		Outdoor unit			
		1phase		SRC50ZHX-S	SRC60ZHX-S
3phase					
Set	1phase		<b>FDUM50ZH XV</b>	<b>FDUM60ZH XV</b>	
	3phase				
CEILING SUSPENDED	<b>FDE</b> 	Indoor unit			
			FDE40V	FDE50V	FDE60V
		Outdoor unit			
	1phase	SRC40ZHX-S	SRC50ZHX-S	SRC60ZHX-S	
	3phase				
	Set	1phase	<b>FDE40ZH XV</b>	<b>FDE50ZH XV</b>	<b>FDE60ZH XV</b>
		3phase			

## Range (Rated Cooling Capacity)

3.0		4.0		5.0		6.0		8.0		10.0	
7.1		10.0		12.5		14.0		20.0		25.0	
23,900		34,100		42,700		47,800		68,300		85,400	
6,020		8,600		10,750		12,040		17,200		21,500	
											
FDT71V		FDT100V		FDT125V		FDT140V					
											
FDC71VN		FDC100VN		FDC125VN		FDC140VN					
		FDC100VS		FDC125VS		FDC140VS					
<b>FDT71VNV</b>		<b>FDT100VNV</b>		<b>FDT125VNV</b>		<b>FDT140VNV</b>					
		<b>FDT100VSV</b>		<b>FDT125VSV</b>		<b>FDT140VSV</b>					
											
FDU71V		FDU100V		FDU125V		FDU140V		FDU200V		FDU250V	
											
FDC71VN		FDC100VN		FDC125VN		FDC140VN		FDC200VS		FDC250VS	
		FDC100VS		FDC125VS		FDC140VS		FDC200VS		FDC250VS	
<b>*FDU71VNV</b>		<b>*FDU100VNV</b>		<b>*FDU125VNV</b>		<b>*FDU140VNV</b>					
		<b>*FDU100VSV</b>		<b>*FDU125VSV</b>		<b>*FDU140VSV</b>		<b>FDU200VSV</b>		<b>FDU250VSV</b>	
											
FDUM71V		FDUM100V		FDUM125V		FDUM140V					
											
FDC71VN		FDC100VN		FDC125VN		FDC140VN					
		FDC100VS		FDC125VS		FDC140VS					
<b>FDUM71VNV</b>		<b>FDUM100VNV</b>		<b>FDUM125VNV</b>		<b>FDUM140VNV</b>					
		<b>FDUM100VSV</b>		<b>FDUM125VSV</b>		<b>FDUM140VSV</b>					
											
FDEN71V		FDEN100V		FDEN125V		FDEN140V					
											
FDC71VN		FDC100VN		FDC125VN		FDC140VN					
		FDC100VS		FDC125VS		FDC140VS					
<b>FDEN71VNV</b>		<b>FDEN100VNV</b>		<b>FDEN125VNV</b>		<b>FDEN140VNV</b>					
		<b>FDEN100VSV</b>		<b>FDEN125VSV</b>		<b>FDEN140VSV</b>					

\*Not available in 60Hz



# MULTI [OUTDOOR UNIT : INDOOR UNIT = 1 : 2, 3, 4] – V MULTI SYSTEM

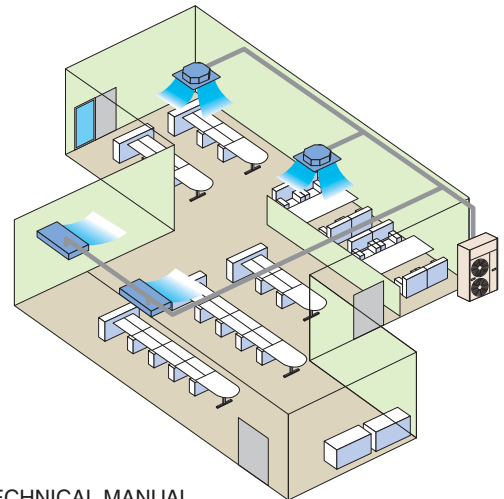
Type	Capacity				
	HP	3.0	4.0	5.0	
	kW	7.1	10.0	12.5	
	Btu	23,900	34,100	42,700	
	kcal	6,020	8,600	10,750	
<b>FDT</b> <b>FDTC</b> <b>FDUM</b> <b>FDE</b> <b>FDKNA*</b>	Indoor unit	Different models and capacities (FDT/FDUM/FDE: 40-125) can be selected freely. Exception : In case of FDTC, FDKNA:151~251 which are equivalent to 40-60 series are selected, same model and capacity combination is required.			
		Twin	40 x 2	50 x 2	60 x 2, 50+71
		Triple	—	—	—
	Branch Pipe	Twin	DIS-WA1	DIS-WA1	DIS-WA1
		Triple	—	—	—
		Double Twin	—	—	—
	Outdoor unit				
			<b>FDC71VN</b>	<b>FDC100VN</b> <b>FDC100VS</b>	<b>FDC125VN</b> <b>FDC125VS</b>

\*only used with V multi outdoor units

## V Multi System

Up to four individual indoor units can be connected to a single outdoor unit.

Ideal for the installation in Large, single zone open Areas and L-shaped rooms, the Multi-Type V series allows an extensive degree of flexibility in the selection of indoor units. Specifically, the selection of indoor units with differing capacities and differing or similar types is available, as is the selection of indoor units with similar capacities and differing types. Furthermore, a maximum of up to four individual indoor units can be operated with a single outdoor unit.



## V Multi System Refrigerant piping work

Diagrams below show the application as samples. For further information, please refer to TECHNICAL MANUAL.

### Decision of piping specification

Twin type

**Models FDC71~140**  
**[Branch pipe set : DIS-WA1]**

Item	Indoor unit combinations	Liquid pipe		Gas pipe	
		Main pipe	Branch pipe	Main pipe	Branch pipe
FDC71	40+40				φ12.7X10.8
FDC100	50+50	φ9.52X10.8	φ9.52X10.8	φ15.88X11.0	
FDC125	60+60				φ15.88X11.0
FDC140	71+71				

Notes (1) If you are using this model in combination with the 40 ~ 60 Series indoor units, use the irregular fittings 3 supplied with the branch piping set and make the branch piping (branch ~ indoor unit) liquid piping size φ9.52.  
(2) Mark is ⊕ to FDC71, 100 only.

**Chart of shapes of branch piping parts (DIS-WA1)**

Notes (1) ⊕ to ⊙ in the drawing include parts provided in the branch piping set. It shows the codes for the shapes of different-diameter connections.  
(2) Branch piping should always be arranged to have level or perpendicular branch. (Refer to the preceding page for details.)

**Models FDC200, 250**  
**[Branch pipe set : DIS-WB1]**

Item	Indoor unit combinations	Liquid pipe		Gas pipe	
		Main pipe	Branch pipe	Main pipe	Branch pipe
FDC200	100+100	φ9.52X10.8	φ9.52X10.8	φ25.4X10.8	φ15.88X11.0
FDC250	125+125	φ12.7X10.8	φ9.52X10.8	φ25.4X10.8	φ15.88X11.0

Notes (1) In the case of the FDC200, if the length of the main pipe exceeds 40 m, make the liquid piping size φ12.7.  
(2) Branch piping should always be arranged to have level or perpendicular branch. (Refer to the preceding page for details.)

**Chart of shapes of branch piping parts (DIS-WB1)**

Notes (1) ⊕ to ⊙ in the drawing include parts provided in the branch piping set. It shows the codes for the shapes of different-diameter connections.  
(2) Branch piping should always be arranged to have level or perpendicular branch. (Refer to the preceding page for details.)

**The branch piping (both gas and liquid lines) should always be arranged to have a level or perpendicular branch.**

**2-Way Branch**

Mount — sections level with the floor.

Mount — sections perpendicular to the floor.

**3-Way Branch**

Mount — sections level with the floor.

Mount — sections perpendicular to the floor.



Indoor units connected to the same outdoor unit must be installed under the same operation conditions in the same room. If the operation conditions of any indoor units are different, there might be shortage of capacity. All indoor units must be controlled by single remote control.

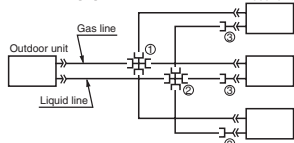
Range (Cooling Capacity)		
6.0	8.0	10.0
14.0	20.0	25.0
47,800	68,300	85,400
12,040	17,200	21,500

71 x 2 50+50+50 *1	100 x 2, 71+125 71 x 3 *2 50+50+50+50	125 x 2 60+60+125, 71+71+100 *3 60+60+60+60
DIS-WA1	DIS-WB1	DIS-WB1
DIS-TA1 or DIS-WA1 x 2 *1	DIS-TB1 or DIS-WA1+DIS-WB1 *2 DIS-WA1 x 2, DIS-WB1 x 1	DIS-WA1+DIS-WB1 *3 DIS-WA1 x 2, DIS-WB1 x 1
*1 When the length differences among piping running between the outdoor unit and indoor units are less than 3m, DIS-TA1 is required. When the difference is 3m or more, DIS-WA1x2 pieces are required.	*2 When the length differences among piping running between the outdoor unit and indoor units are less than 3m, DIS-TB1 is required. When the difference is 3m or more, DIS-WA1 and DIS-WB1 are required.	*3 The length differences among piping running between the outdoor unit and the indoor units must be less than 3m.
<b>FDC140VN</b> <b>FDC140VS</b>	<b>FDC200VS</b>	<b>FDC250VS</b>

Triple type

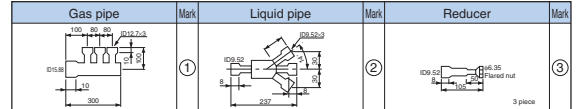
**Model FDC140**  
[Branch pipe set : DIS-TA1]



Item	Indoor unit combinations	Liquid pipe		Gas pipe	
		Main pipe	Branch pipe	Main pipe	Branch pipe
FDC140	50+50+50	φ9.52X10.8	φ9.52X10.8	φ15.88X11.0	φ12.7X10.8

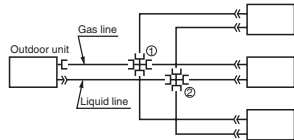
Notes (1) Use the irregular fittings ⑤ supplied with the branch piping set on the indoor unit side, and make the branch piping (branch ~ indoor unit) liquid piping size φ9.52.

Chart of shapes of branch piping parts (DIS-TA1)



Notes (1) ① to ⑤ in the drawing include parts provided in the branch piping set. It shows the codes for the shapes of different-diameter connections.  
(2) Branch piping should always be arranged to have level or perpendicular branch. (Refer to the preceding page for details.)

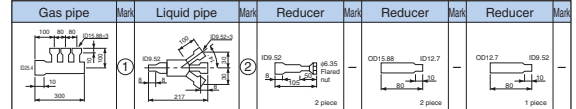
**Model FDC200**  
[Branch pipe set : DIS-TB1]



Item	Indoor unit combinations	Liquid pipe		Gas pipe	
		Main pipe	Branch pipe	Main pipe	Branch pipe
FDC200	71+71+71	φ9.52X10.8	φ9.52X10.8	φ25.4X11.0	φ15.88X10.8

Notes (1) If the length of the main pipe exceeds 40 m, make the liquid piping size φ12.7.

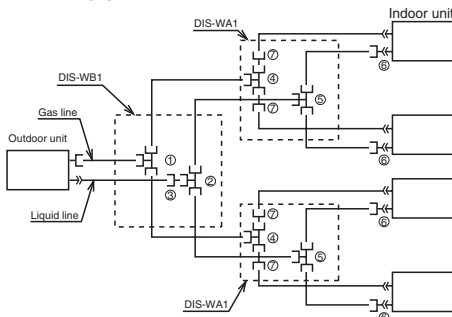
Chart of shapes of branch piping parts (DIS-TB1)



Notes (1) ① to ⑤ in the drawing include parts provided in the branch piping set. It shows the codes for the shapes of different-diameter connections.  
(2) Branch piping should always be arranged to have level or perpendicular branch. (Refer to the preceding page for details.)

Double twin type

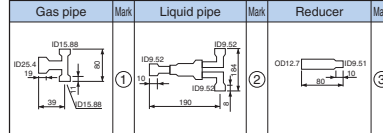
**Models FDC200, 250**  
[Branch pipe set : DIS-WA1x2set, DIS-WB1x1set]



Item	Indoor unit combinations	Liquid pipe			Gas pipe		
		Main pipe	1st branch pipe	2nd branch pipe	Main pipe	1st branch pipe	2nd branch pipe
FDC200	50+50+50+50	φ9.52X10.8	φ9.52X10.8	φ9.52X10.8	φ25.4X11.0	φ15.88X11.0	φ12.7X10.8
FDC250	60+60+60+60	φ12.7X10.8	φ9.52X10.8	φ9.52X10.8	φ25.4X11.0	φ15.88X11.0	φ15.88X11.0

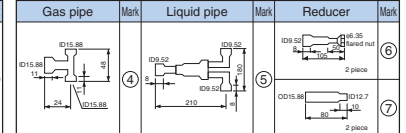
Notes (1) In the case of the FDC200, if the length of the main pipe exceeds 40 m, make the liquid piping size φ12.7.  
(2) Use the irregular fittings ⑤ supplied with the branch piping set on the indoor unit side, and make the branch piping (branch ~ indoor unit) liquid piping size φ9.52.  
(3) Mark ③ is ② to FDC200 only.

Chart of shapes of branch piping parts (DIS-WB1)



Notes (1) ① to ⑤ in the drawing include parts provided in the branch piping set. It shows the codes for the shapes of different-diameter connections.  
(2) Branch piping should always be arranged to have level or perpendicular branch.  
(3) Mark ③ shows for the FDC200 model only.

Chart of shapes of branch piping parts (DIS-WA1)



**Installation manual for pipe size reducer kit**

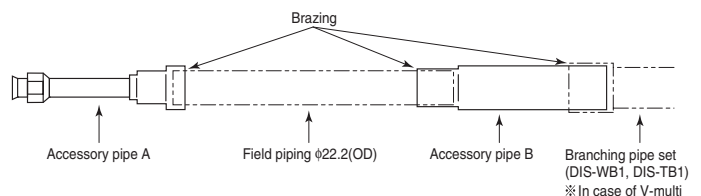
Applicable outdoor models	FDC200	φ22.2 (OD) size of the refrigerant gas pipe can be used by using this kit, although φ25.4 (OD) size of the refrigerant gas pipe is standard. (When φ25.4 (OD) size of the refrigerant gas pipe is used, this kit doesn't be needed.) (-) OD: Outer diameter.
	FDC250	

● This kit includes the following parts.

A		B	
ID25.4		OD25.4	
ID22.2		ID22.2	

(\*) ID: Inner diameter.

● Install this kit according to the following.



# INDOOR UNIT

## CEILING CASSETTE -4way-

# FDT



FDT 40/50/60/71/  
100/125/140V



Wireless remote control

Wired remote control



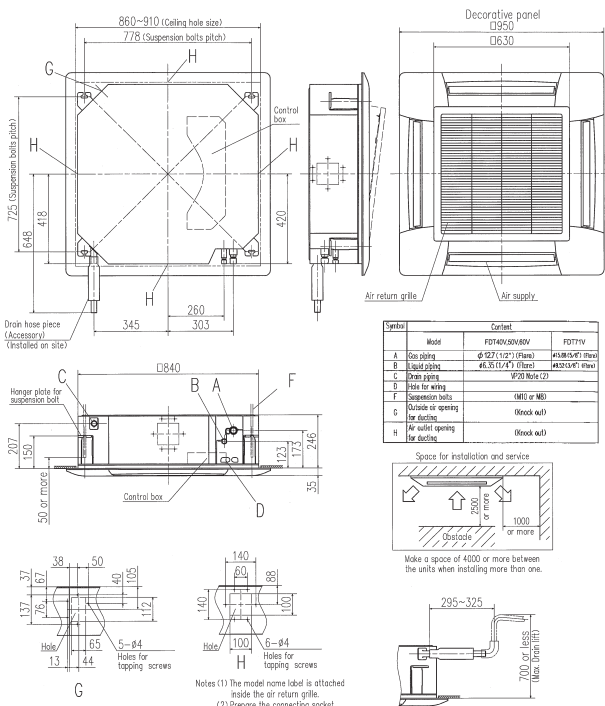
RCN-T-36W-E  
(Option)



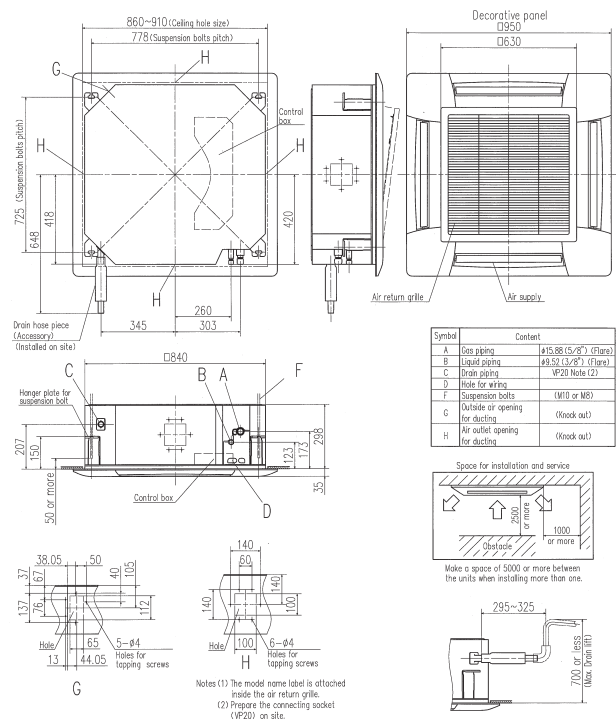
RC-E3  
(Option)

### Outline drawing (Unit:mm)

Model FDT40,50,60,71V



Model 100,125,140V



## Point 1 Arrangement of installation balance of indoor unit

Checking from access ports with detachable covers at each corner, arrangement of installation balance of indoor unit can be available without removing a panel. Workability is improved and time of installation is reduced.



For wireless control simply insert the infra-red receiver kit on a corner of the panel



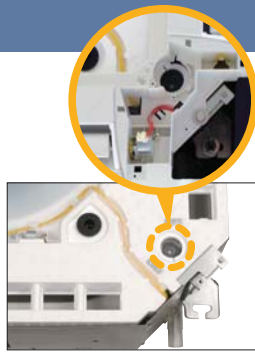
wireless remote control



RCN-T-36W-E

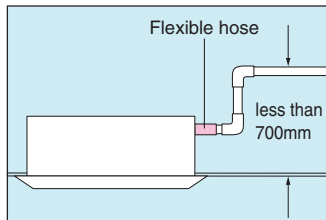
## Point 2 Easy checking of drain pan

Easy checking of drain pan condition is available by removing corner lid only. Due to new design changing fan motor is available without removing a panel. Temporally setting of drain pan is also available.



## Point 3 700mm Drain Pump

Drain can be discharged upwards by 700mm from the ceiling surface. It allows a piping layout with a high degree of freedom Depending on the installation location and 260mm flexible hose as a standard equipment supports easy workability.



## SPECIFICATIONS

Set model name		FDT40ZHXV		FDT50ZHXV		FDT60ZHXV		
Indoor name		FDT40V		FDT50V		FDT60V		
Outdoor name		SRC40ZHX-S		SRC50ZHX-S		SRC60ZHX-S		
Power source		1Phase 220-240V 50Hz , 1Phase 220V 60Hz						
Type		Inverter						
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	4.0 (1.8~4.7)	5.0 (2.2~5.6)	5.6 (2.8~6.3)			
	ISO-T1(JIS)	kW	4.5 (2.0~5.4)	5.4 (2.5~6.3)	6.7 (3.1~7.1)			
Nominal heating capacity (Min~Max)	ISO-T1(JIS)	kW	4.5 (2.0~5.4)	5.4 (2.5~6.3)	6.7 (3.1~7.1)			
Input	Cooling/Heating	kW	0.93/1.15	1.29/1.29	1.57/1.85			
COP	Cooling/Heating		4.30/3.91	3.88/4.19	3.57/3.62			
Energy label	Cooling/Heating		A/A	A/A	A/A			
Inrush current		A	5					
Sound level*1	Indoor	dB(A)	Hi:33 Me:31 Lo:30					
	Outdoor		47			48		
Air flow	Indoor	CMM	Hi:18 Me:16 Lo:14					
	Outdoor		40					
Indoor unit	Exterior dimensions	Height x Width x Depth	mm 246x840x840					
	Panel	Height x Width x Depth	mm 35x950x950					
	Net weight	Unit+Panel	kg 22+5.5			24+5.5		
Panel+Remote control			T-PSA-36W-E+RCN-T-36W-E, T-PSA-36W-E+RC-E3					
Outdoor unit	Exterior dimensions	Height x Width x Depth	mm 640x800(+71)x290					
	Net weight		kg 45					
	Type of compressor		Scroll					
	Ref.control		EEV					
	Ref.amount precharged		kg(m)	1.4(15)				
Range of usage	Ref.piping size	Liquid/Gas	ø		6.35/12.7			
	Ref.piping length		m 30					
	Vertical height difference	between O/U and I/U	<O/U	20				
Limitations	Air temp.	Cooling	I/U	18~30				
			O/U	-15~43*2				
		Heating	I/U	18~30				
			O/U	-15~24				

## SPECIFICATIONS

Set model name		FDT71VNV		FDT100VNV		FDT125VNV		FDT140VNV		FDT100VSV		FDT125VSV		FDT140VSV		
Indoor name		FDT71V		FDT100V		FDT125V		FDT140V		FDT100V		FDT125V		FDT140V		
Outdoor name		FDC71VN		FDC100VN		FDC125VN		FDC140VN		FDC100VS		FDC125VS		FDC140VS		
Power source		1Phase 220-240V 50Hz , 1Phase 220V 60Hz								3phase,380-415V 50Hz/380V 60Hz						
Type		Inverter														
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	7.1 (3.2~8.0)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	
	ISO-T1(JIS)	kW	8.0 (3.6~9.0)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	
Input	Cooling/Heating	kW	1.90/2.07	2.76/2.74	4.05/3.77	4.98/4.57	2.76/2.74	4.05/3.77	4.98/4.57	2.76/2.74	4.05/3.77	4.98/4.57	2.76/2.74	4.05/3.77	4.98/4.57	
COP	Cooling/Heating		3.74/3.86	3.62/4.09	3.09/3.71	2.81/3.50	3.62/4.09	3.09/3.71	2.81/3.50	3.62/4.09	3.09/3.71	2.81/3.50	3.62/4.09	3.09/3.71	2.81/3.50	
Energy label	Cooling/Heating		A/A	A/A	B/A	C/B	A/A	B/A	C/B	A/A	B/A	C/B	A/A	B/A	C/B	
Inrush current		A	5													
Sound level*1	Indoor	dB(A)	Hi:35 Me:33 Lo:31	Hi:40 Me:37 Lo:35	Hi:42 Me:40 Lo:37	Hi:43 Me:41 Lo:38	Hi:40 Me:37 Lo:35	Hi:42 Me:40 Lo:37	Hi:43 Me:41 Lo:38	Hi:40 Me:37 Lo:35	Hi:42 Me:40 Lo:37	Hi:43 Me:41 Lo:38	Hi:40 Me:37 Lo:35	Hi:42 Me:40 Lo:37	Hi:43 Me:41 Lo:38	
	Outdoor		48	49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51	
Air flow	Indoor	CMM	Hi:21 Me:19 Lo:17	Hi:27 Me:24 Lo:20	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	Hi:27 Me:24 Lo:20	Hi:30 Me:27 Lo:23	Hi:27 Me:24 Lo:20	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	Hi:30 Me:27 Lo:23	
	Outdoor		Cooling:60 Heating:50	Cooling:76 Heating:74	Cooling:75	Heating:73	Cooling:76 Heating:74	Cooling:75	Heating:73	Cooling:76 Heating:74	Cooling:75	Heating:73	Cooling:75	Heating:73	Cooling:75	Heating:73
Indoor unit	Exterior dimensions	Height x Width x Depth	mm 246x840x840		298x840x840											
	Panel	Height x Width x Depth	mm 35x950x950													
	Net weight	Unit+Panel	kg 24+5.5			27+5.5										
Panel+Remote control			T-PSA-36W-E+RCN-T-36W-E, T-PSA-36W-E+RC-E3													
Outdoor unit	Exterior dimensions	Height x Width x Depth	mm 750x880(+88)x340		845x970x370											
	Net weight		kg 60		74											
	Type of compressor		Rotary													
	Ref.control		EEV													
	Ref.amount precharged		kg(m)	2.95(30)		3.8(30)										
Range of usage	Ref.piping size	Liquid/Gas	ø		9.52/15.88											
	Ref.piping length		m 50													
	Vertical height difference	between O/U and I/U	<O/U	30												
Limitations	Air temp.	Cooling	I/U	18~30												
			O/U	-15~43*2												
		Heating	I/U	18~30												
			O/U	-10~24												

The data are measured under the following conditions(ISO-T1).

Cooling:Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating:Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

\*1 : Indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

\*2 : If a cooling operation is conducted when the outdoor air temperature is -5°C or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind. If wind blows, the low pressure will drop and compressor frequency will increase, this will cause the capacity to drop and may cause the unit to break down.



# INDOOR UNIT

## CEILING CASSETTE -4way Compact (600 X 600mm)-

# FDTC



FDTC 40/50V

Wireless remote control

Wired remote control

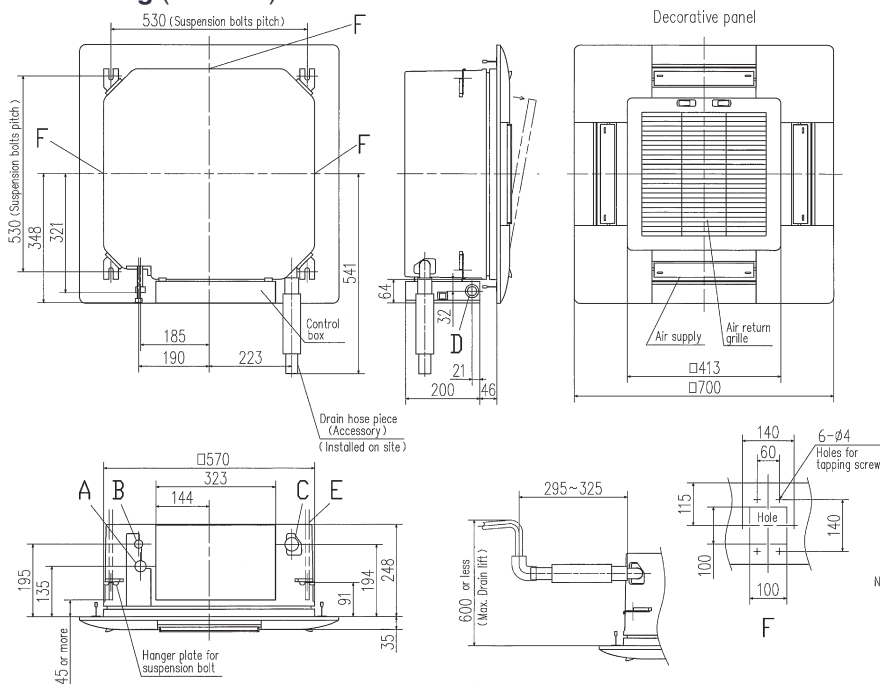


RCN-TC-24W-ER  
(Option)

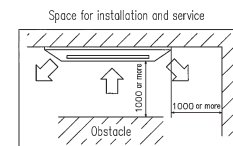


RC-E3  
(Option)

### Outline drawing (Unit:mm)



Symbol	Content
	Model FDTC40V, 50V
A	Gas piping $\phi 12.7 (1/2")$ (Flare)
B	Liquid piping $\phi 6.35 (1/4")$ (Flare)
C	Drain piping VP20 Note (2)
D	Hole for wiring $\phi 25$
E	Suspension bolts (M10 or M8)
F	Air outlet opening for ducting (Knock out)

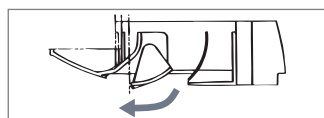
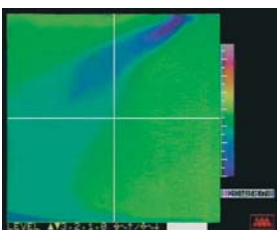


Make a space of 4000 or more between the units when installing more than one.

- Notes (1) The model name label is attached on the control box lid inside the air return grille.  
 (2) Prepare the connecting socket (VP20) on site.  
 (3) This unit is designed for 2x2 grid ceiling. If it is installed on a ceiling other than 2x2 grid ceiling, provide an inspection port on the control box side.

Point 1

## "CLEARER" AIR FLOW



New shape & angled louvre redirects the air current away from the ceiling, to reduce ceiling stains

Point 2

## INSTALLATION WORKABILITY



For wireless control simply insert the infra-red receiver kit on a corner of the panel



wireless remote control  
RCN-TC-24W-ER



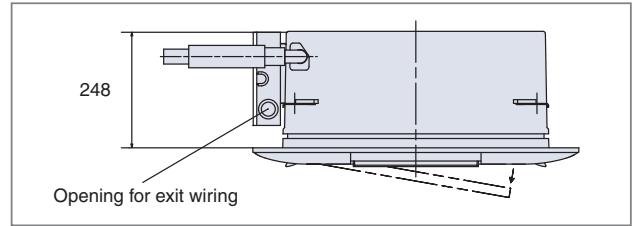
Point  
3

## Compact Concept

### The industry's lowest level 248mm height.

Panel size (700×700) is suitable for 600×600 ceiling panel.  
All indoor unit size is (W×D: 570×570). It brings easy installation for 600×600 ceiling panel.

Ultra slim design at just 248mm above the ceiling



Point  
4

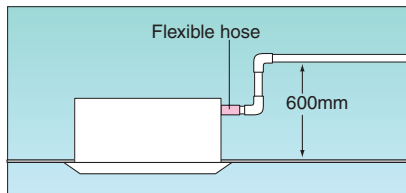
## Comfortable and Convenient

- Wired remote control or Wireless remote control can be selected.
- All units are 18.5kg, light weight unit.
- Thanks to width and depth of exterior dimensions of a indoor unit are 570mm each, the installation work can be conducted smoothly with a beautiful finishing in 2x2 ceiling size.

### • 600mm Drain Pump is mounted.

Drain can be discharged upward by 600 mm from the ceiling surface close to the indoor unit.

It allows a piping layout with a high degree of freedom depending on the installation location.



- New designed panel is developed exclusively for FDTC series.



## SPECIFICATIONS

Set model name			FDTC40ZH XV	FDTC50ZH XV
Indoor name			FDTC40V	FDTC50V
Outdoor name			SRC40ZH X-S	SRC50ZH X-S
Power source			1Phase 220-240V 50Hz ,1Phase 220V 60Hz	
Type			Inverter	
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	4.0 (1.8~4.7)	5.0 (2.2~5.6)
	ISO-T1(JIS)	kW	4.5 (2.0~5.4)	5.4 (2.5~6.3)
Input	Cooling/Heating	kW	1.04/1.10	1.56/1.45
COP	Cooling/Heating		3.85/4.09	3.21/3.72
Energy label	Cooling/Heating		A/A	
Inrush current		A	5	
Sound level*1	Indoor	dB(A)	Hi:42 Me:38 Lo:35	
	Outdoor		47	
Air flow	Indoor	CMM	Hi:11.5 Me:10 Lo:8	
	Outdoor		40	
Indoor unit	Exterior dimensions	Height x Width x Depth	248x570x570	
	Panel	Height x Width x Depth	35x700x700	
	Net weight	Unit+Panel	15+3.5	
Panel+Remote control			TC-PSA-24W-ER+RCN-TC-24W-ER, TC-PSA-24W-ER+RC-E3	
Outdoor unit	Exterior dimensions	Height x Width x Depth	640x800(+71)x290	
	Net weight	kg	45	
	Type of compressor		Scroll	
	Ref.control		EEV	
	Ref.amount precharged	kg(m)	1.4(20)	
Range of usage	Ref.piping size	Liquid/Gas	ø 6.35/12.7	
	Ref.piping length	m	30	
	Vertical height difference	between O/U and I/U	<O/U	20
Limitations	Air temp.	Cooling	I/U	18-30
			O/U	-15-43*2
		Heating	I/U	18-30
			O/U	-15-24

The data are measured under the following conditions(ISO-T1).

Cooling:Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating:Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

\*1 : Indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

\*2 : If a cooling operation is conducted when the outdoor air temperature is -5°C or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind. If wind blows, the low pressure will drop and compressor frequency will increase, this will cause the capacity to drop and may cause the unit to break down.

# INDOOR UNIT

DUCT CONNECTED -High Static pressure-

# FDU

**NEW**



Wired remote control



RC-E3  
(Option)



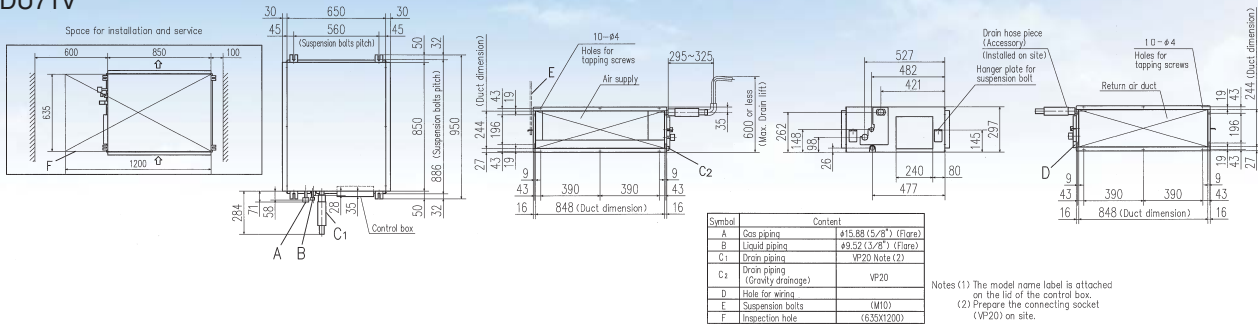
FDU71/100/125/140V



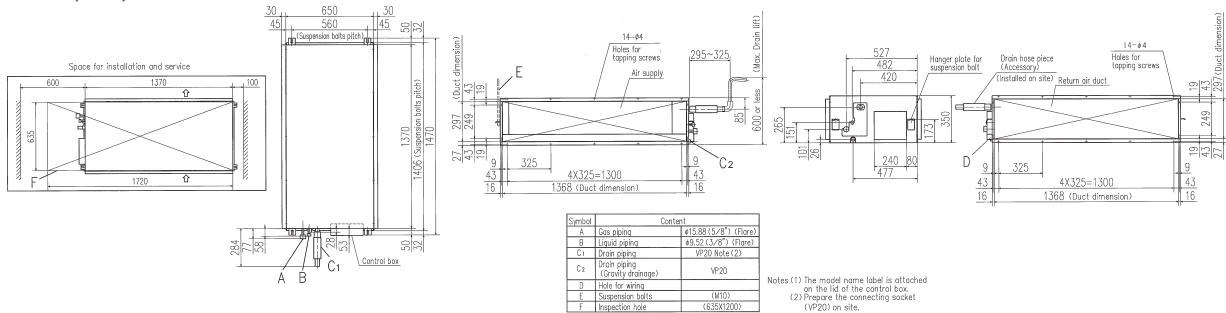
FDU200/250V

## Outline drawing (Unit:mm)

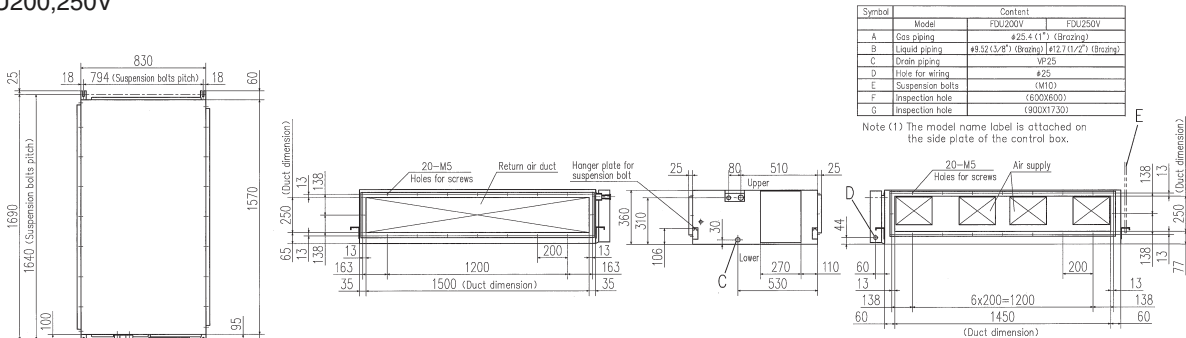
### FDU71V



### FDU100,125,140V

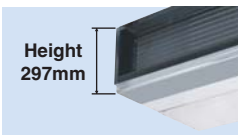


### FDU200,250V



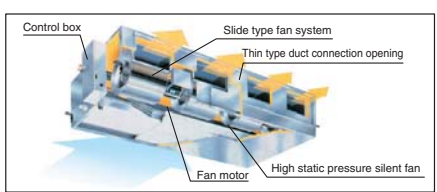
## Point 1 Enhanced installation workability

**Quiet, Lightweight and Compact**  
 With the FDU71, the noise level is only 37dB (low), weight is only 40kg and height is only 297mm. In addition 600mm Drain Pump is mounted in FDU71/100/125/140V. The indoor unit is completely hidden in the ceiling, so this is suitable for spaces with classy interior decoration.



## Point 2 Adaptability to higher static pressures

**High static pressure of 200 Pa (FDU200/250V) extends the degree of freedom in the designing of air conditioners.**  
 This is a real and earnest model for duct air-conditioning. A unit external static pressure of up to 200 Pa (FDU200/250V) is possible. Precise air flow designing is possible.



## SPECIFICATIONS

\*Not available in 60Hz

Set model name			*FDU71VNV	*FDU100NVV	*FDU125NVV	*FDU140NVV	*FDU100VSV	*FDU125VSV	*FDU140VSV
Indoor name			FDU71V	FDU100V	FDU125V	FDU140V	FDU100V	FDU125V	FDU140V
Outdoor name			FDC71VN	FDC100VN	FDC125VN	FDC140VN	FDC100VS	FDC125VS	FDC140VS
Power source			1Phase 220-240V 50Hz				3phase,380-415V 50Hz		
Type									
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	7.1 (3.2~8.0)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)
Nominal heating capacity (Min~Max)	ISO-T1(JIS)	kW	8.0 (3.6~9.0)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)
Input	Cooling/Heating	kW	2.08/2.21	2.88/2.99	4.04/3.79	4.95/4.43	2.88/2.99	4.04/3.79	4.95/4.43
COP	Cooling/Heating		3.41/3.62	3.47/3.75	3.09/3.69	2.83/3.61	3.47/3.75	3.09/3.69	2.83/3.61
Energy label	Cooling/Heating		A/A	A/A	B/A	C/A	A/A	B/A	C/A
Inrush current			A		5				
Sound level *1	Indoor	dB(A)	Hi:41 Lo:37	Hi:42 Lo:37	Hi:43 Lo:38		Hi:42 Lo:37	Hi:43 Lo:38	
	Outdoor		48	49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51
Air flow	Indoor	CMM	Hi:25 Lo:20	Hi:34 Lo:27	Hi:42 Lo:33.5		Hi:34 Lo:27	Hi:42 Lo:33.5	
	Outdoor		Cooling:60 Heating:50	Cooling:76 Heating:74	Cooling:75 Heating:73		Cooling:76 Heating:74		
Static pressure			Pa		standard:50, Max:130				
Exterior dimensions	Height x Width x Depth	mm	297x850x650		350x1,370x650				
Net weight			kg		63				
Remote control			RC-E3						
Exterior dimensions	Height x Width x Depth	mm	750x880(+88)x340		845x970x370				
Net weight			kg		74				
Type of compressor			Rotary						
Ref.control			EEV						
Ref.amount precharged			kg(m)		2.95(30)		3.8(30)		
Ref.piping size			Liquid/Gas		ø 9.52/15.88				
Range of Usage	Ref.piping length			m		50			
	Vertical height difference	between O/U and I/U	<O/U		30				
		>O/U			15				
Limitations	Air temp.	Cooling	I/U			18~30			
			O/U			-15~43*2			
		Heating	I/U			18~30			
			O/U			-10~24			

## SPECIFICATIONS

Set model name			FDU200VSV				FDU250VSV		
Indoor name			FDU200V				FDU250V		
Outdoor name			FDC200VS				FDC250VS		
Power source			3Phase,380-415V,50Hz,380V,60Hz						
Type			Inverter						
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	20.0 (7.0~22.4)				25.0 (10.0~28.0)		
Nominal heating capacity (Min~Max)	ISO-T1(JIS)	kW	22.4 (7.6~25.0)				28.0 (9.5~31.5)		
Input	Cooling/Heating	kW	50Hz:6.59/6.08 60Hz:6.58/5.84				50Hz: 9.91/8.50 60Hz:10.21/8.22		
COP	Cooling/Heating		50Hz:3.03/3.68 60Hz:3.04/3.83				50Hz:2.52/3.29 60Hz:2.45/3.41		
Energy label	Cooling/Heating		B/A				E/B		
Inrush current			A		5				
Sound level *1	Indoor	dB(A)	51				52		
	Outdoor		57				Cooling:57 Heating:58		
Air flow	Indoor	CMM	50Hz:51, 60Hz:60				50Hz:68, 60Hz:80		
	Outdoor				Cooling:150 Heating:145				
Static pressure			Pa		standard:100, Max:200				
Exterior dimensions	Height x Width x Depth	mm	360x1,570x830						
Net weight			kg		92				
Remote control			RC-E3						
Exterior dimensions	Height x Width x Depth	mm	1,300x970x370				140		
Net weight			kg		122		140		
Type of compressor			Scroll						
Ref.control			EEV						
Ref.amount precharged			kg(m)		5.4(30)		7.2(30)		
Ref.piping size			Liquid/Gas		ø 9.52/25.4		ø 12.7/25.4		
Range of Usage	Ref.piping length			m		70			
	Vertical height difference	between O/U and I/U	<O/U		30				
		>O/U			15				
Limitations	Air temp.	Cooling	I/U			18~30			
			O/U			-15~43 *2			
		Heating	I/U			18~30			
			O/U			-15~24			

The data are measured under the following conditions(ISO-T1).

Cooling:Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating:Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

\*1 : Indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

\*2 : If a cooling operation is conducted when the outdoor air temperature is -5°C or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind. If wind blows, the low pressure will drop and compressor frequency will increase, this will cause the capacity to drop and may cause the unit to break down.

# INDOOR UNIT

DUCT CONNECTED - Middle Static pressure-

# FDUM



FDUM 50/60/71/100/125/140V



Wired remote control



RC-E3  
(Option)



## Point 1 Various Adaptability

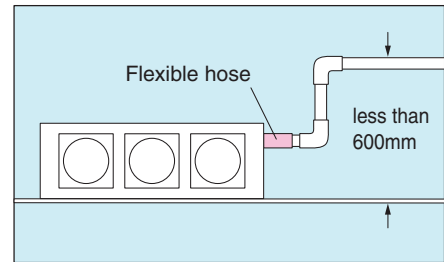
Selectable static pressure and Flexible duct design with selectable air suction (direct suction /duct suction) can meet wide pattern of installation.

Static pressure Pa

model	Standard	Max
50/60/71V	50	85
100V	60	90
125/140V	60	85

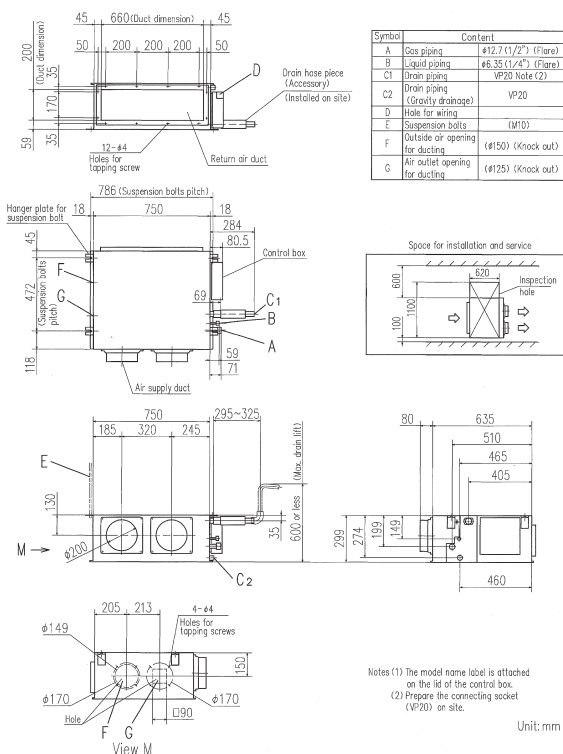
## Point 2 600mm Drain Pump

Drain can be discharged upwards by 600mm from the ceiling surface. It allows a piping layout with a high degree of freedom Depending on the installation location.

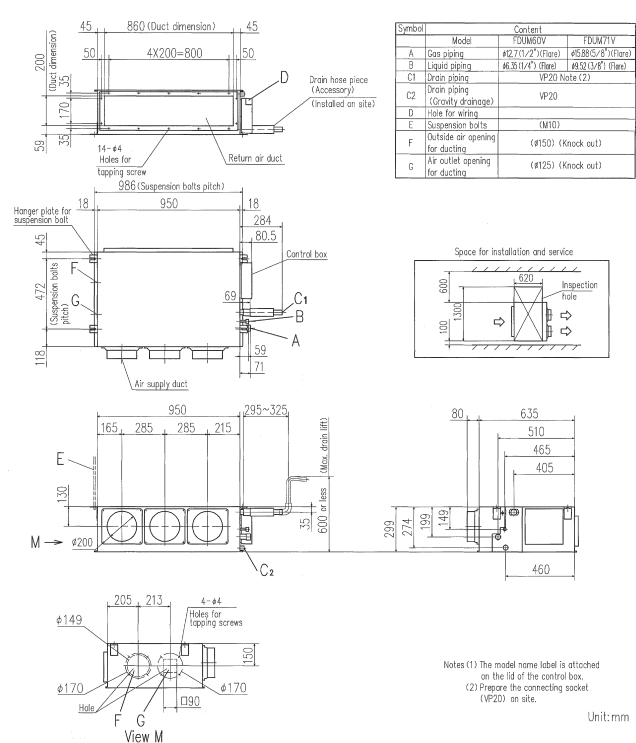


## Outline drawing (Unit:mm)

Model FDUM50V



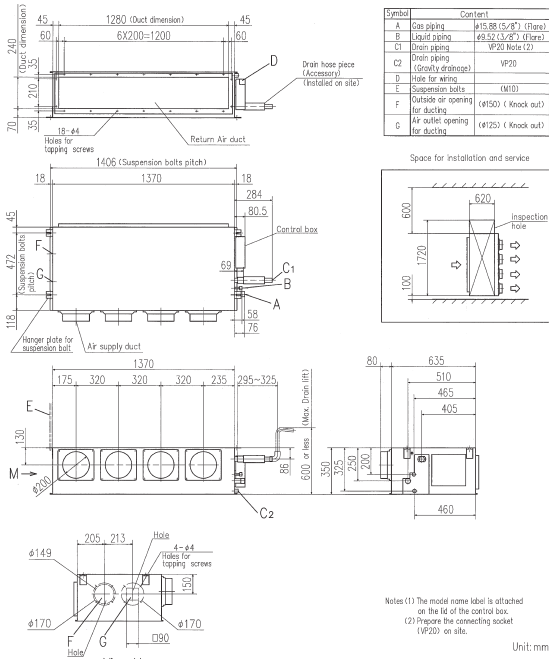
Models FDUM60V,71V





## Outline drawing(Unit:mm)

Models FDUM100V,125V,140V



## SPECIFICATIONS

Set model name		FDUM50ZHxV	FDUM60ZHxV	FDUM71VNV	
Indoor name		FDUM50V	FDUM60V	FDUM71V	
Outdoor name		SRC50ZHx-S	SRC60ZHx-S	FDC71VN	
Power source		1Phase 220-240V 50Hz , 1Phase 220V 60Hz			
Type		Inverter			
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	5.0 (2.2~5.6)	5.6 (2.8~6.3)	7.1 (3.2~8.0)
Nominal heating capacity (Min~Max)	ISO-T1(JIS)	kW	5.4 (2.5~6.3)	6.7 (3.1~7.1)	8.0 (3.6~9.0)
Input	Cooling/Heating	kW	1.52/1.41	1.86/1.96	2.08/2.21
COP	Cooling/Heating		3.29/3.83	3.01/3.42	3.41/3.62
Energy label	Cooling/Heating		A/A	B/B	A/A
Inrush current		A	5		
Sound level *1	Indoor	dB(A)	Hi:34 Me:31 Lo:28		Hi:35 Me:32 Lo:29
	Outdoor		47		48
Air flow	Indoor	CMM	Hi:14 Me:12 Lo:11	Hi:18 Me:16 Lo:14	Hi:20 Me:18 Lo:15
	Outdoor		40		Cooling:60 Heating:50
Static pressure		Pa	standard:50, Max:85		
Exterior dimensions	Height x Width x Depth	mm	299x750x635		299x950x635
Net weight		kg	34		40
Remote control			RC-E3		
Exterior dimensions	Height x Width x Depth	mm	640x800(+71)x290		750x880(+88)x340
Net weight		kg	45		60
Type of compressor			Scroll		Rotary
Ref.control			EEV		
Ref.amount precharged		kg(m)	1.4(15)		2.95(30)
Ref.piping size	Liquid/Gas	ø	6.35/12.7		9.52/15.88
Ref.piping length		m	30		50
Vertical height difference	between O/U and I/U	<O/U	20		30
		>O/U	20		15
Air temp.	Cooling	I/U	18~30		
		O/U	-15~43*2		
	Heating	I/U	18~30		
		O/U	-15~24		-10~24

## SPECIFICATIONS

Set model name		FDUM100VNV	FDUM125VNV	FDUM140VNV	FDUM100VSV	FDUM125VSV	FDUM140VSV	
Indoor name		FDUM100V	FDUM125V	FDUM140V	FDUM100V	FDUM125V	FDUM140V	
Outdoor name		FDC100VN	FDC125VN	FDC140VN	FDC100VS	FDC125VS	FDC140VS	
Power source		1Phase 220-240V 50Hz , 1Phase 220V 60Hz			3phase,380-415V 50Hz/380V 60Hz			
Type		Inverter						
Nominal cooling capacity (Min~Max)	ISO-T1(JIS)	kW	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)
Nominal heating capacity (Min~Max)	ISO-T1(JIS)	kW	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)
Input	Cooling/Heating	kW	50Hz:2.80/2.77 60Hz:2.80/2.80	50Hz:4.03/3.80 60Hz:4.03/3.85	50Hz:4.95/4.89 60Hz:4.95/4.91	50Hz:2.80/2.77 60Hz:2.80/2.80	50Hz:4.03/3.80 60Hz:4.03/3.85	50Hz:4.95/4.89 60Hz:4.95/4.91
COP	Cooling/Heating		50Hz:3.57/4.04 60Hz:3.57/4.00	50Hz:3.10/3.68 60Hz:3.10/3.64	50Hz:2.83/3.27 60Hz:2.83/3.26	50Hz:3.57/4.04 60Hz:3.57/4.00	50Hz:3.10/3.68 60Hz:3.10/3.64	50Hz:2.83/3.27 60Hz:2.83/3.26
Energy label	Cooling/Heating		A/A	B/A	C/C	A/A	B/A	C/C
Inrush current		A	5					
Sound level *1	Indoor	dB(A)	Hi:37 Me:35 Lo:32	Hi:38 Me:36 Lo:33		Hi:37 Me:35 Lo:32	Hi:38 Me:36 Lo:33	
	Outdoor		49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51
Air flow	Indoor	CMM	Hi:28 Me:25 Lo:22	Hi:34 Me:31 Lo:27		Hi:28 Me:25 Lo:22	Hi:34 Me:31 Lo:27	
	Outdoor		Cooling:76 Heating:74	Cooling:75 Heating:73	Cooling:76 Heating:74	Cooling:75 Heating:73	Cooling:75 Heating:73	
Static pressure		Pa	standard:60, Max:90	standard:60, Max:85		standard:60, Max:90	standard:60, Max:85	
Exterior dimensions	Height x Width x Depth	mm	350x1,370x635					
Net weight		kg	59					
Remote control			RC-E3					
Exterior dimensions	Height x Width x Depth	mm	845x970x370					
Net weight		kg	74					
Type of compressor			Rotary					
Ref.control			EEV					
Ref.amount precharged		kg(m)	3.8(30)					
Ref.piping size	Liquid/Gas	ø	9.52/15.88					
Ref.piping length		m	50					
Vertical height difference	between O/U and I/U	<O/U	30					
		>O/U	15					
Air temp.	Cooling	I/U	18-30					
		O/U	-15~43*2					
	Heating	I/U	18-30					
		O/U	-15~24					

The data are measured under the following conditions(ISO-T1).

Cooling:Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating:Indoor temp. of 7°CDB, 6°CWB.

\*1 : Indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

\*2 : If a cooling operation is conducted when the outdoor air temperature is -5°C or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind. If wind blows, the low pressure will drop and compressor frequency will increase, this will cause the capacity to drop and may cause the unit to break down.

Option (Filter kits) : UM-FL1E(FDUM50V), UM-FL2E(FDUM60,71V), UM-FL3E(FDUM100,125,140V)

# INDOOR UNIT

## CEILING SUSPENDED FDEN



FDEN 40/50/60/71/100/125/140V

Wireless remote control



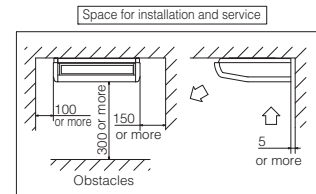
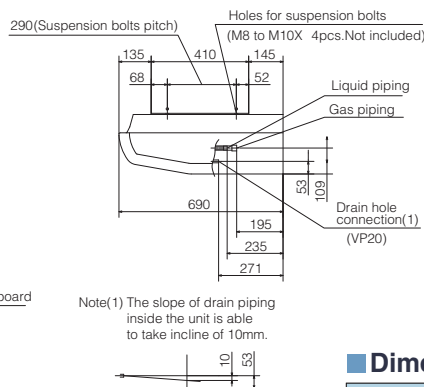
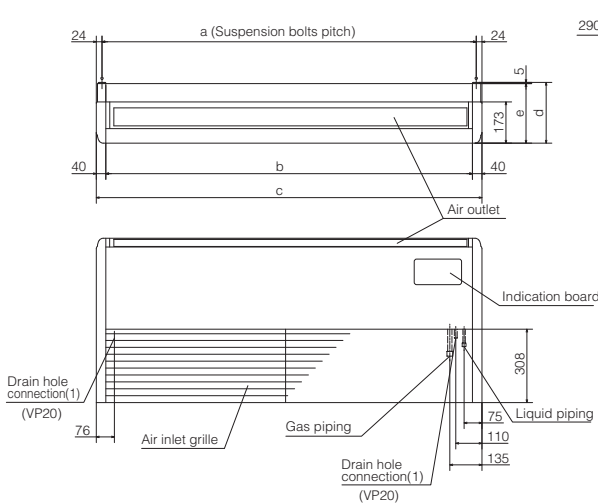
RCN-E1R  
(Option)

Wired remote control



RC-E3  
(Option)

### Outline drawing (Unit:mm)



### Dimension Table

model	a	b	c	d	e
FDEN40,50	1022	990	1070	215	210
FDEN60,71	1272	1240	1320	215	210
FDEN100-140	1572	1540	1620	255	250

### Point 1 Improved installation workability

Increased freedom of a piping layout



The refrigerant pipe from the unit can be arranged in three directions, rear, right and up. The drain pipe can be arranged in two directions, left and right. This will allow a free layout of piping for various installation conditions. The unit can only be serviced from the bottom.

### Point 2 Compact and modern design

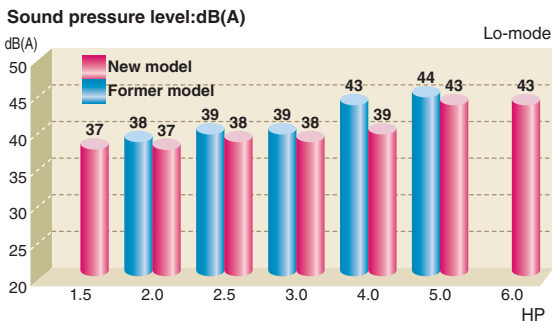


All models fit compactly on ceiling. (Height-210mm or 250mm). Plain, modern design featuring rounded edges gives room a comfortable atmosphere. FDEN40V, 50V weights 30kg the lightest level in the industry. Convenient and quick installation.

**Point 3** **New design --- Drastic-reduction of noise level**



Reviewing sirocco fan (diameter and wide) enables drastic reduction of noise level.



**SPECIFICATIONS**

Set model name		FDEN40ZH XV	FDEN50ZH XV	FDEN60ZH XV
Indoor name		FDEN40V	FDEN50V	FDEN60V
Outdoor name		SRC40ZH X-S	SRC50ZH X-S	SRC60ZH X-S
Power source		1Phase 220-240V 50HZ , 1Phase 220V 60Hz		
Type		Inverter		
Nominal cooling capacity (Min~Max)	ISO-T1(JIS) kW	4.0 (1.8~4.7)	5.0 (2.2~5.6)	5.6 (2.8~6.3)
Nominal heating capacity (Min~Max)	ISO-T1(JIS) kW	4.5 (2.0~5.4)	5.4 (2.5~6.3)	6.7 (3.1~7.1)
Input	Cooling/Heating kW	1.04/1.13	1.59/1.58	1.95/2.12
COP	Cooling/Heating	3.85/3.98	3.14/3.42	2.87/3.16
Energy label	Cooling/Heating	A/A	B/B	C/D
Inrush current		A 5		
Sound level *1	Indoor	Hi:39 Me:38 Lo:37		Hi:41 Me:39 Lo:38
	Outdoor	47		48
Air flow	Indoor	Hi:11 Me:9 Lo:7		Hi:18 Me:14 Lo:12
	Outdoor	40		
Indoor unit	Exterior dimensions	Height x Width x Depth	mm 210x1,070x690	210x1,320x690
	Net weight	kg	30	36
Remote control		RCN-E1R, RC-E3		
Outdoor unit	Exterior dimensions	Height x Width x Depth	mm 640x800(+71)x290	
	Net weight	kg	45	
Type of compressor		Scroll		
Ref.control		EEV		
Ref.amount precharged		kg(m)	1.4(15)	
Ref.piping size		Liquid/Gas	ø 6.35/12.7	
Range of usage	Ref.piping length	m	30	
	Vertical height difference	between O/U and I/U	<O/U 20	>O/U 20
Limitations	Air temp.	Cooling	I/U 18~30	O/U -15~43
		Heating	I/U 18~30	O/U -15~24

**SPECIFICATIONS**

Set model name		FDEN71VNV	FDEN100VNV	FDEN125VNV	FDEN140VNV	FDEN100VSV	FDEN125VSV	FDEN140VSV
Indoor name		FDEN71V	FDEN100V	FDEN125V	FDEN140V	FDEN100V	FDEN125V	FDEN140V
Outdoor name		FDC71VN	FDC100VN	FDC125VN	FDC140VN	FDC100VS	FDC125VS	FDC140VS
Power source		1Phase 220-240V 50HZ , 1Phase 220V 60Hz				3phase,380-415V 50Hz/380V 60Hz		
Type		Inverter						
Nominal cooling capacity (Min~Max)	ISO-T1(JIS) kW	7.1 (3.2~8.0)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)	10.0 (4.0~11.2)	12.5 (5.0~14.0)	14.0 (5.0~14.5)
Nominal heating capacity (Min~Max)	ISO-T1(JIS) kW	8.0 (3.6~9.0)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)	11.2 (4.0~12.5)	14.0 (4.0~16.0)	16.0 (4.0~16.5)
Input	Cooling/Heating kW	2.01/2.21	2.85/2.97	4.10/3.65	4.98/4.69	2.85/2.97	4.10/3.65	4.98/4.69
COP	Cooling/Heating	3.53/3.62	3.51/3.77	3.05/3.84	2.81/3.41	3.51/3.77	3.05/3.84	2.81/3.41
Energy label	Cooling/Heating	A/A	A/A	B/A	C/B	A/A	B/A	C/B
Inrush current		A 5						
Sound level *1	Indoor	Hi:41 Me:39 Lo:38	Hi:44 Me:41 Lo:39	Hi:46 Me:44 Lo:43		Hi:44 Me:41 Lo:39	Hi:46 Me:44 Lo:43	
	Outdoor	48	49	Cooling:50 Heating:51	51	49	Cooling:50 Heating:51	51
Air flow	Indoor	Hi:18 Me:14 Lo:12	Hi:26 Me:23 Lo:21	Hi:29 Me:26 Lo:23		Hi:26 Me:23 Lo:21	Hi:29 Me:26 Lo:23	
	Outdoor	Cooling:60 Heating:50	Cooling:76 Heating:74	Cooling:75	Heating:73	Cooling:76 Heating:74	Cooling:75	Heating:73
Indoor unit	Exterior dimensions	Height x Width x Depth	mm 210x1,320x690		250x1,620x690			
	Net weight	kg	36		46			
Remote control		RCN-E1R, RC-E3						
Outdoor unit	Exterior dimensions	Height x Width x Depth	mm 750x880(+88)x340		845x970x370			
	Net weight	kg	60		74			
Type of compressor		Rotary						
Ref.control		EEV						
Ref.amount precharged		kg(m)	2.95(30)		3.8(30)			
Ref.piping size		Liquid/Gas	ø 9.52/15.88		9.52/15.88			
Range of usage	Ref.piping length	m	50					
	Vertical height difference	between O/U and I/U	<O/U 30		>O/U 15			
Limitations	Air temp.	Cooling	I/U 18~30	O/U -15~43*2				
		Heating	I/U 18~30	O/U -10~24				

The data are measured under the following conditions(ISO-T1).  
Cooling:Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB.  
Heating:Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

\*1 : Indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

\*2 : If a cooling operation is conducted when the outdoor air temperature is -5°C or lower, the outdoor unit should be installed at a place where it is not influenced by natural wind. If wind blows, the low pressure will drop and compressor frequency will increase, this will cause the capacity to drop and may cause the unit to break down.



# OUTDOOR UNIT (1.5-10.0HP)



SRC40ZHX-S  
SRC50ZHX-S  
SRC60ZHX-S  
(1.5HP~2.5HP)



FDC71VN  
(3.0HP)



FDC100VN  
FDC125VN  
FDC140VN  
FDC100VS  
FDC125VS  
FDC140VS  
(4.0HP~6.0HP)



FDC200VS  
(8.0HP)



FDC250VS  
(10.0HP)

## Installation workability

Enhanced installation workability thanks to the extended pipe length – longest level in the industry, pre-charged refrigerant and reduced piping size.

Point 1

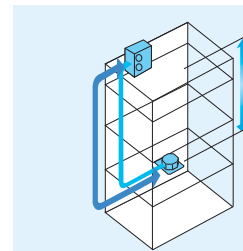
### Pipe length – 70m

Pipe length can be extended up to 70m. (8.0-10.0 HP) This opens up the possibility to apply to large-scale commercial facilities as well, which conventionally called for multiple type models.

Point 2

### Refrigerant pre-charged pipe length extending to 30m

Refrigerant pre-charged pipe length extends up to 30m. (1.5~2.5HP:15m) This eliminates the need to add refrigerant on site, which sets it free from trouble of excessive or insufficient charging of refrigerant, and allows carrying out the installation smoothly.



#### Height difference (Outdoor>indoor)

1.5~2.5HP ⇒ 20m  
3~10.0HP ⇒ 30m

#### Piping length

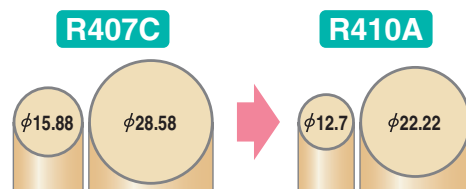
1.5~2.5HP : 30m  
3.0~6.0HP : 50m  
8.0~10.0HP : 70m

Point 3

### Reduced refrigerant piping size that significantly enhances the installation workability

Refrigerant piping size has been reduced in order to adapt to new high-density and high-pressure refrigerant R410A. This has enabled to realize a higher refrigeration capacity and reduced the pressure loss, which allows further reducing the piping work cost.

Refrigerant may be recharged, of course, when it has leaked accidentally.



### Piping size (diameter) reduced

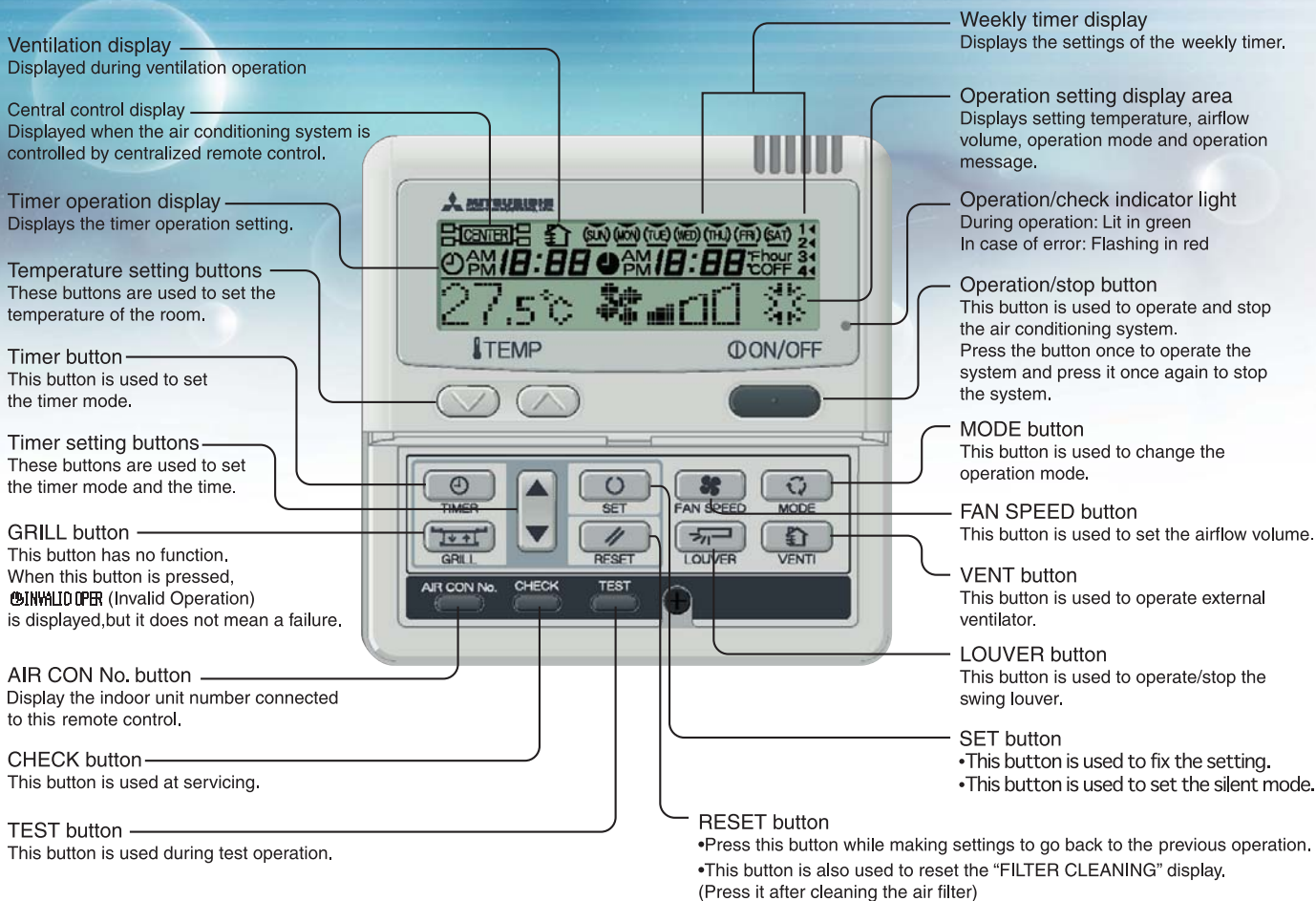
HP		1.5	2.0	2.5	3.0	4.0	5.0	6.0	8.0	10.0
Liquid	New model (R410A)	6.35	6.35	6.35	9.52	9.52	9.52	9.52	9.52	12.7
	Former model (R407C)	-	6.35	9.52	9.52	9.52	9.52	-	12.7	15.88
Gas	New model (R410A)	12.7	12.7	12.7	15.88	15.88	15.88	15.88	22.22*	22.22*
	Former model (R407C)	-	15.88	15.88	15.88	19.05	19.05	-	25.4	28.58

\*Use the reducer kit.



# WIRED CONTROL (RC-E3)

The RC-E3 control enables extensive access to service and maintenance technical data combined with easy to use functions and a clear LCD display.



## Lucid indication and easy operation

### Adoption of a large dot LCD

A new type remote control unit adopting a completely new design has further improved the visibility of information displayed on the screen such as function settings, operation data and error data by employing a dot LCD.

### Rubber buttons to improve the feeling of a touch

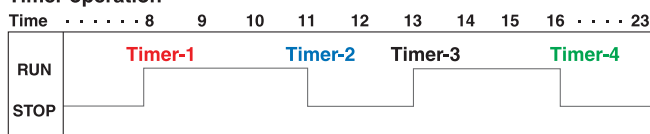
Having adopted rubber buttons for operation, it now offers the improved feeling of a touch.

## Further improved functionality

### Weekly timer function as standard

RC-E3 provides (as a standard feature) a weekly timer, which allows one-week operation schedules to be registered. A user can specify up to four times a day to start/stop the air conditioner. (Temperature setting is also possible with the timer).

#### Timer operation



### Room temperature controlled by the remote control sensor

The temperature sensor is housed in the top section of the remote control unit. This arrangement has improved the sensitivity of the remote control unit's sensor, which permits more finely controlled air conditioning.



### Changeable set temperature ranges

RC-E3 allows the upper and lower limits of a set temperature range to be specified separately. By adjusting a set temperature range, you can ensure energy saving air conditioning by avoiding excessive cooling or heating.

Changeable range	
Upper limit	20~30°C (effective for heating operation)
Lower limit	18~26°C (effective for non-heating operation)

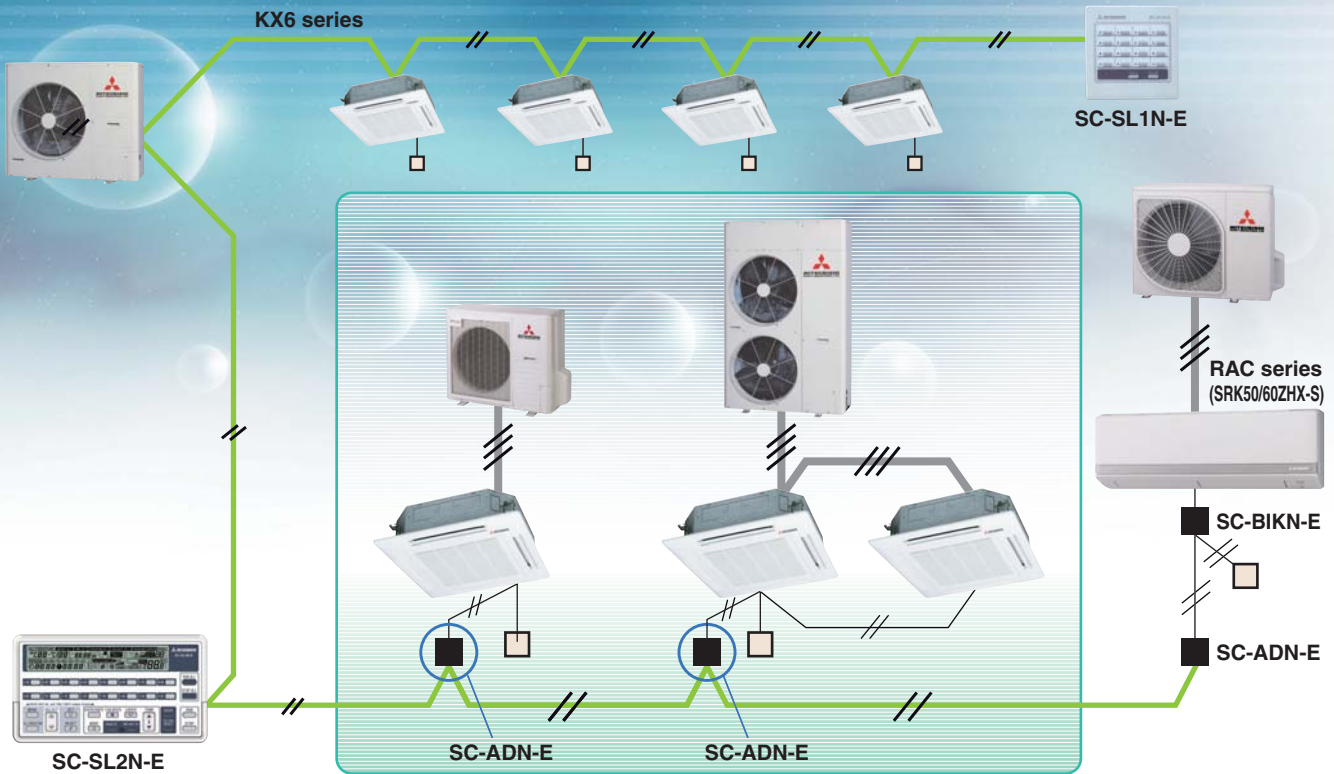
### Run hour meters to facilitate maintenance checking

RC-E3 stores operation data when an anomaly occurs and indicates the error on the LCD. It also displays cumulative operation hours of the air conditioner and compressor since commissioning.

### Optional mode settings

Following functions can be made available by setting the remote control button. Fan Speed setting, Filter Sign setting and Remote Control Sensor setting etc.

# Control System SUPERLINK-II



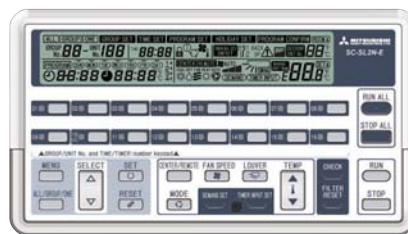
## Central Control

### SC-SL1N-E



Start/stop control of up to 16 indoor units is possible either individually or collectively. With simple operations, you can effect centralized control.

### SC-SL2N-E



Centralized control of up to 64 indoor units. It can allow connection with a weekly timer without using any interface.

### SC-SL3N-AE/BE



Easy operation realized with a large color LCD and touch panel. Up to 128 indoor units can be controlled, when three SUPERLINK-II systems are connected.

## PC windows central control

### SC-WGWN-A/B\*

(SC-WGWN-B is with electric power calculation function)



Up to 96 groups (64 indoor unit x 2 SUPERLINK-II systems) are controlled from the Internet Explorer.

## BMS interface unit

### SC-BGWN-A\* (BACnet gateway)



Up to 96 groups (64 indoor unit x 2 SUPERLINK-II systems) are controlled centrally from a BMS.

### SC-LGWN-A\* (LonWorks gateway)



Up to 96 indoor units (48 indoor unit x 2) are linked as an open network! Centrally controlled through LonWorks!

\*Additional engineering service cost etc. is required. Shipment will be available from July 2008.

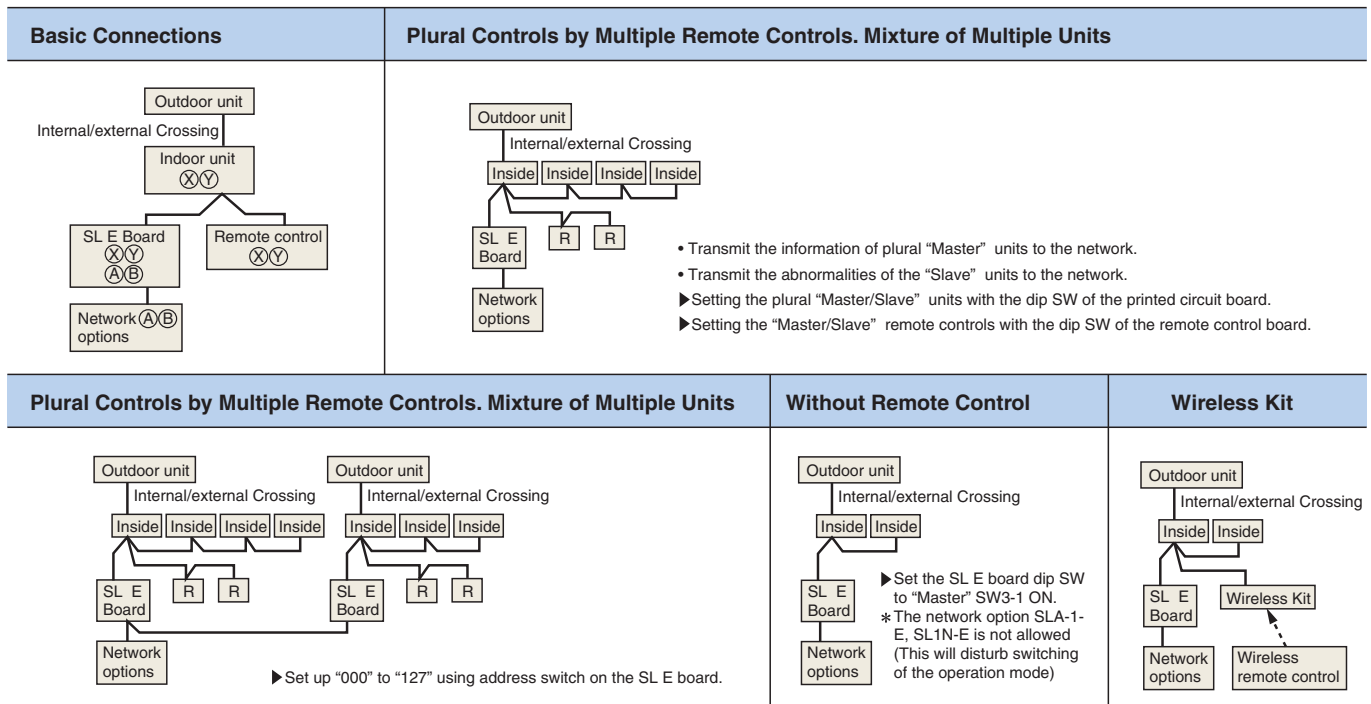
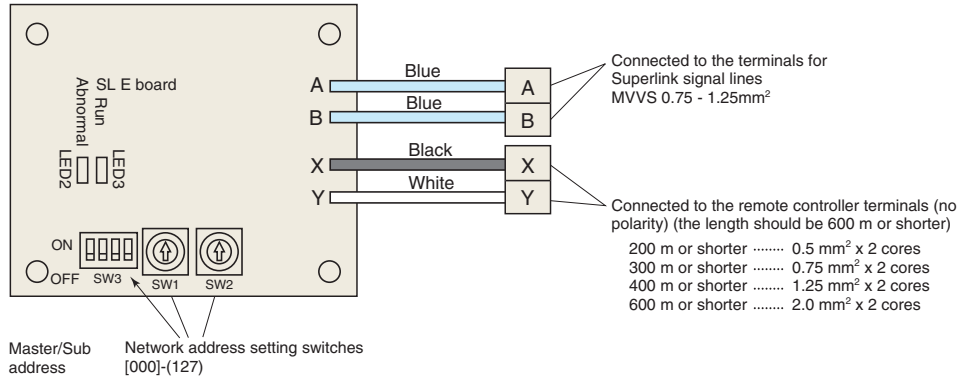
# SUPERLINK E BOARD (SC-ADN-E)

This board is used when conducting control of the single package (wired remote control unit) 1-type series using a network option (SC-SL1N-E, SC-SL2N-E, etc).

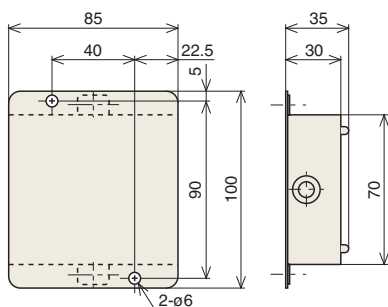
## (1) Functions

- (a) Transmits the settings from the network option to the indoor units.
- (b) Returns the priority indoor unit data in response to a data request from the network option.
- (c) Inspects the error status of connected indoor units and transmits the inspection codes to the network option.
- (d) A maximum of 16 units can be controlled (if in the same operation mode).

## (2) Wiring connection diagram



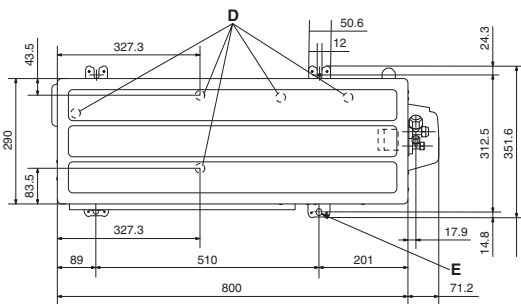
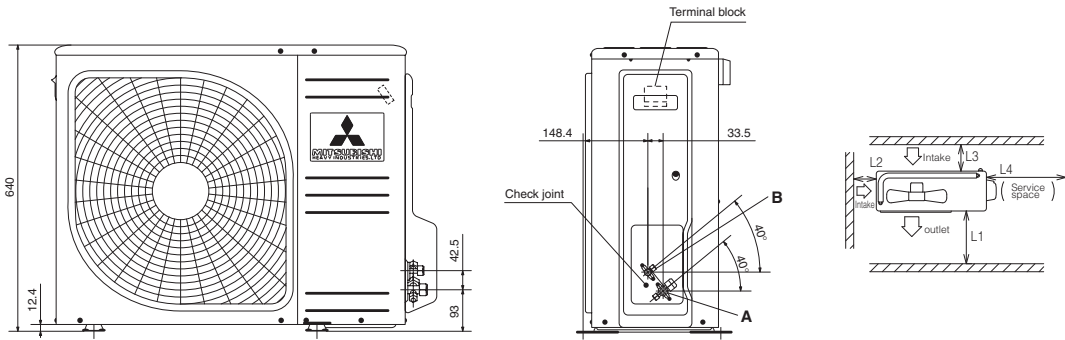
## (3) Metal box dimension





# OUTDOOR UNIT Dimensions

SRC40ZH-S, 50ZH-S, 60ZH-S (unit:mm)



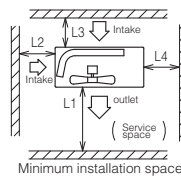
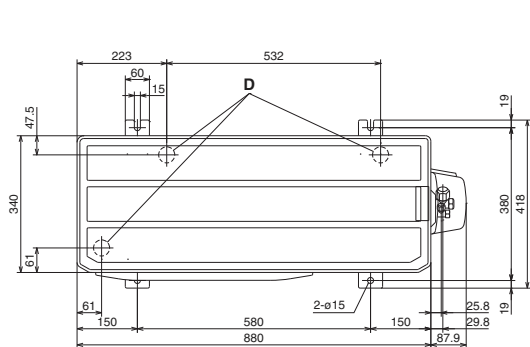
Examples of installation Dimensions	1	2	3
L1	Open	280	280
L2	100	75	Open
L3	100	80	80
L4	250	Open	250

Mark	Item	
A	Refrigerant gas side pipe connection tap	ø12.7(flare)
B	Refrigerant liquid side pipe connection tap	ø6.35(flare)
D	Drain discharge port	ø20.5x5places
E	Anchor bolt hole	M10x4places

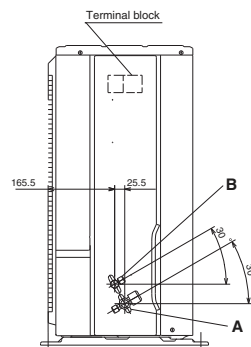
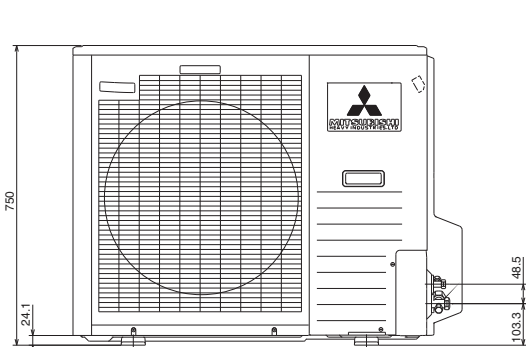
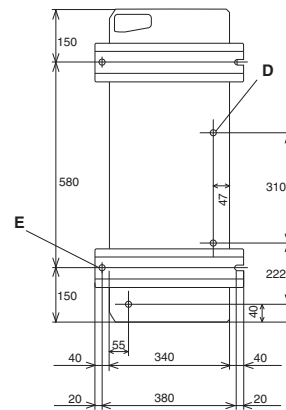
Notes:

- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave a 1m or larger space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The unit name plate is attached on the lower right corner of the front panel.

FDC71VN (unit:mm)



Examples of installation Dimensions	1	2	3
L1	Open	Open	500
L2	300	250	Open
L3	100	150	100
L4	250	250	250

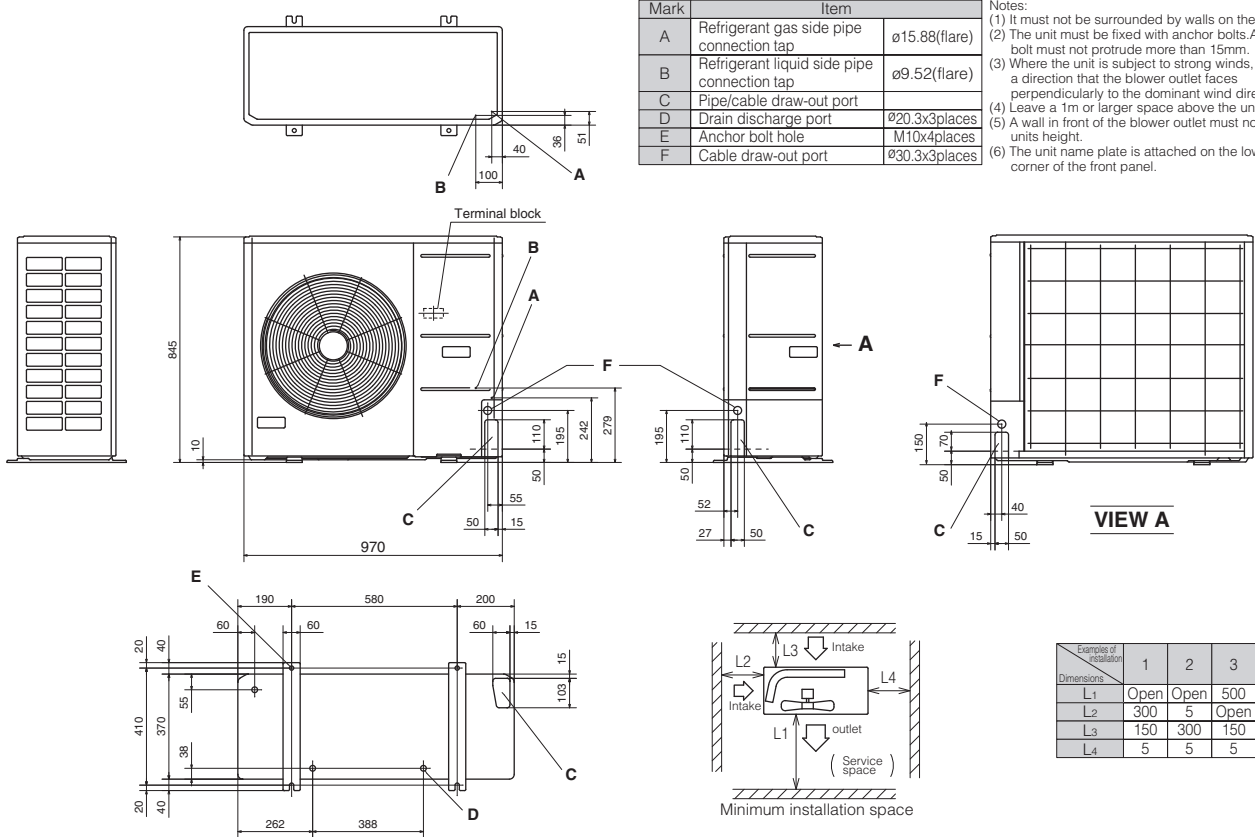


Mark	Item	
A	Refrigerant gas side pipe connection tap	ø15.88(flare)
B	Refrigerant liquid side pipe connection tap	ø9.52(flare)
C	Pipe/cable draw-out port	
D	Drain discharge port	ø20.3x3places
E	Anchor bolt hole	M10x4places
F	Cable draw-out port	ø30.3x3places

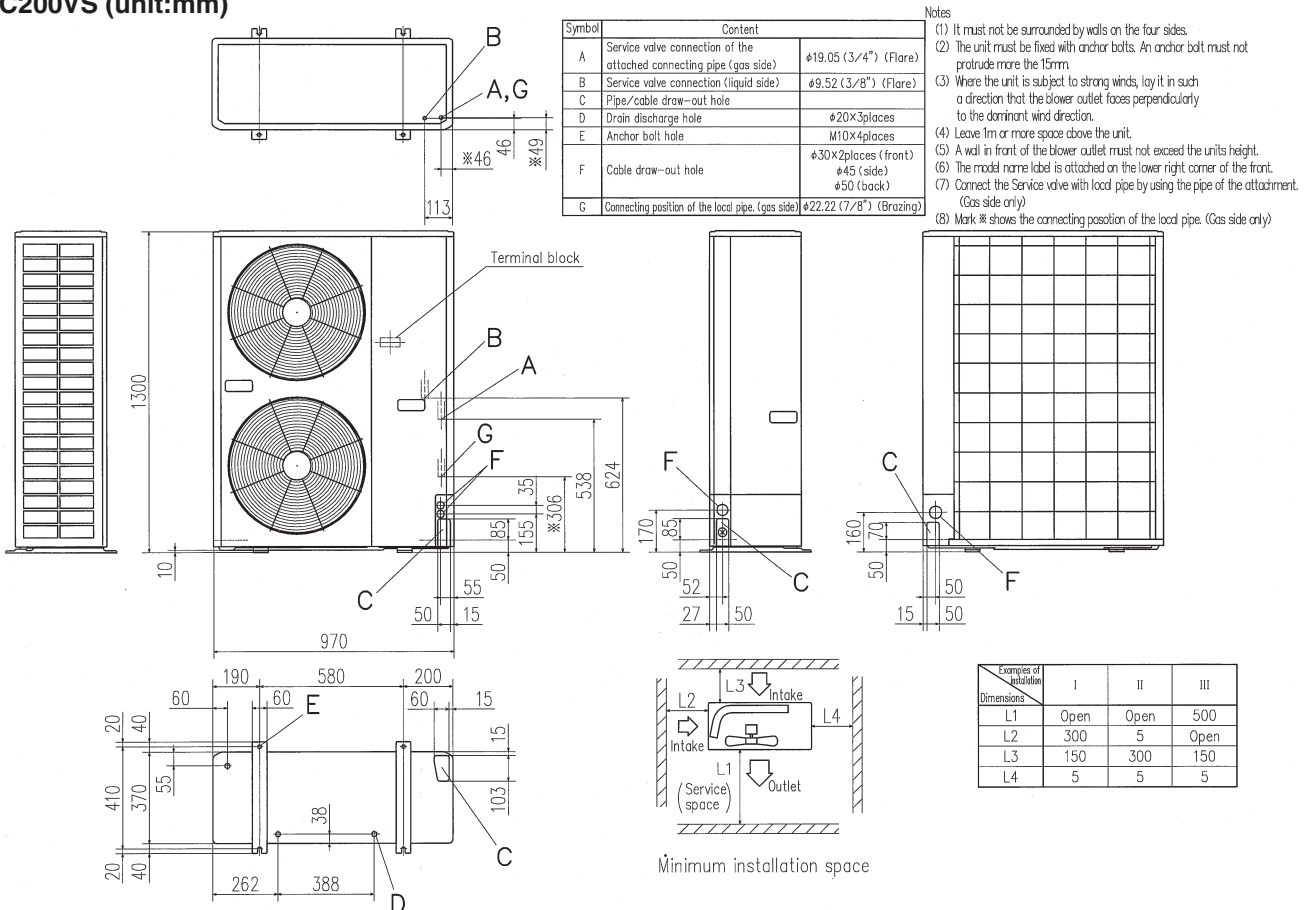
Notes:

- (1) It must not be surrounded by walls on the four sides.
- (2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- (3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
- (4) Leave a 1m or larger space above the unit.
- (5) A wall in front of the blower outlet must not exceed the units height.
- (6) The unit name plate is attached on the lower right corner of the front panel.

## FDC100VN, 125VN, 140VN 100VS, 125VS, 140VS (unit:mm)

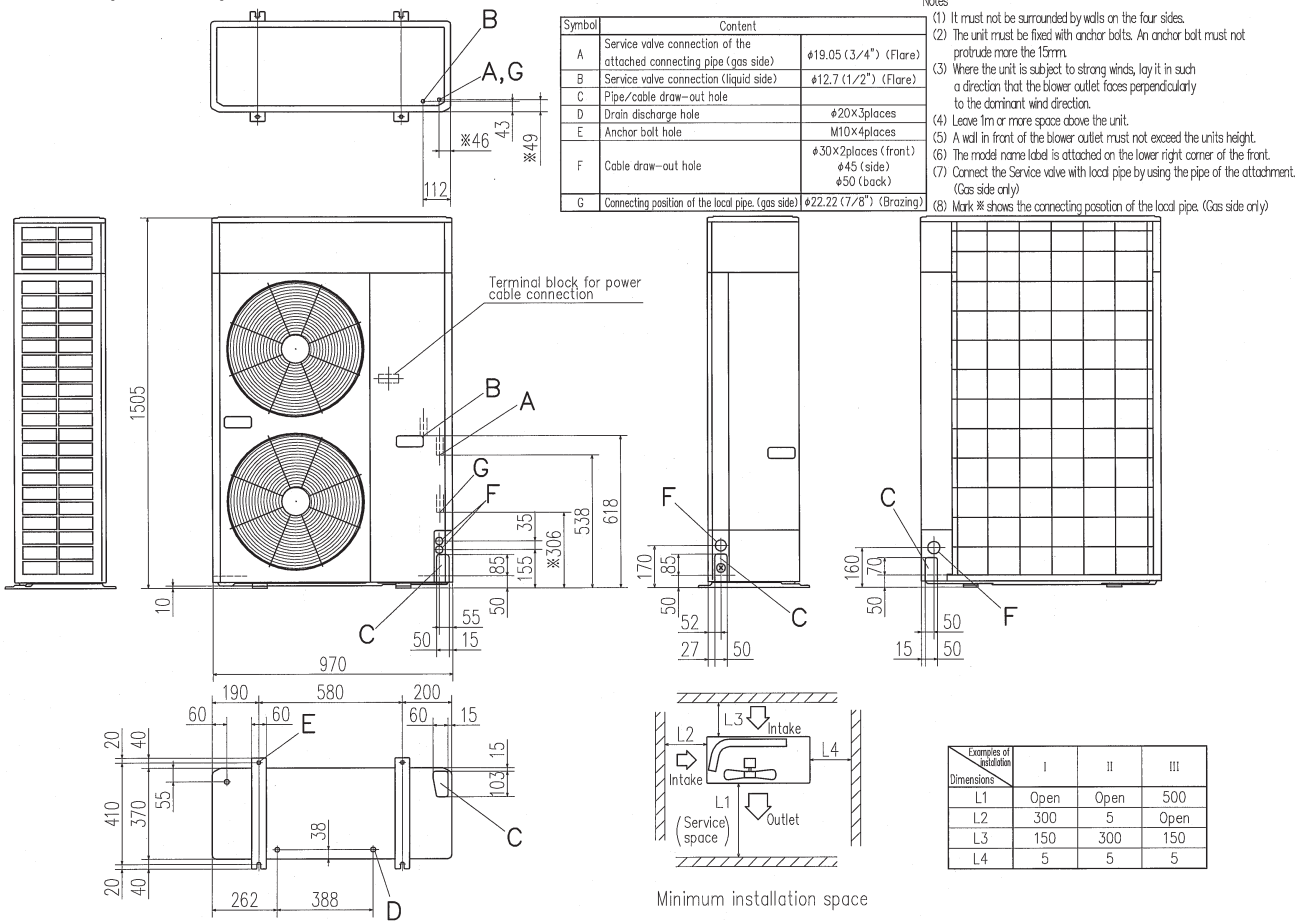


## FDC200VS (unit:mm)



# OUTDOOR UNIT Dimensions

## FDC250VS (unit:mm)





# Optional Parts

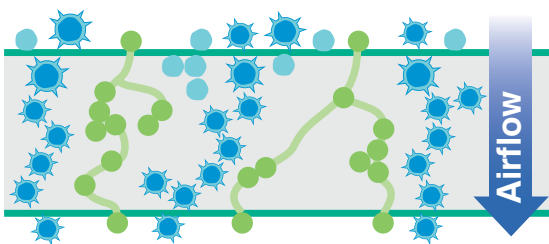
## Enzyme Sterilizing Filter

A debut of the enzyme sterilizing filter to which enzymes used in detergent, etc. are chemically bonded.

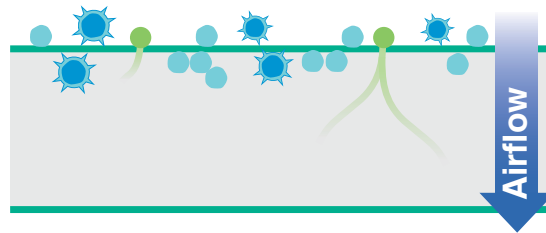


Enzymes used for filters are natural lytic enzymes. The lytic enzymes attack cell walls of microorganisms trapped on a filter and destroy them, so that they will show a powerful sterilizing effect to decrease the number of molds and bacteria. Where such enzymes exist, air filters are kept sanitary and clean. Naturally, air passing through such filters is clean and safe.

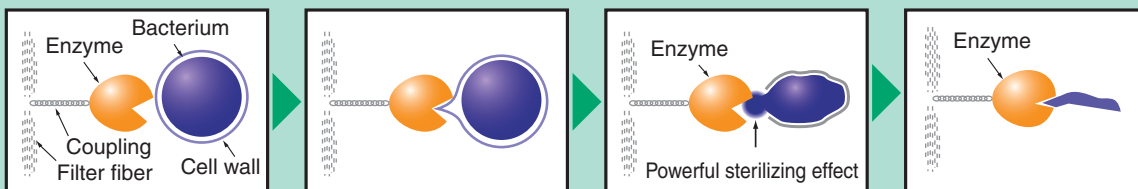
### Conventional Filter



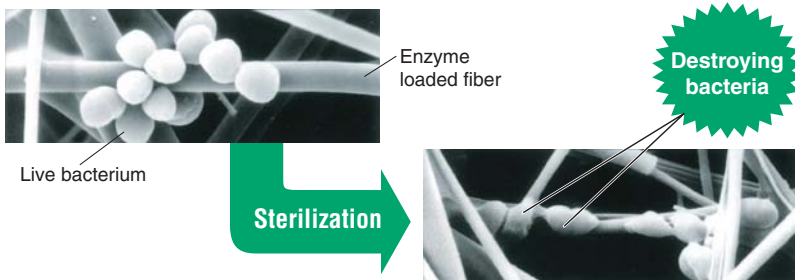
### Enzyme Filter



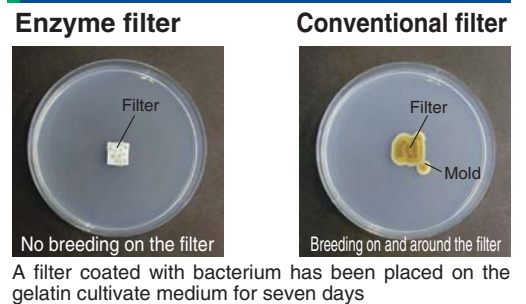
### Enzyme's sterilizing mechanism



### Effect on bacterium



### Effect on molds



Applicable indoor unit models

Ceiling cassette -4way- FDT, Ceiling suspended FDE

## Before starting use

### Heating performance

The heating performance values (kW) described in catalog are the values obtained by operating at an outdoor temperature of 7°C and indoor temperature of 20°C as set forth in the ISO Standards. As the heating performance decreases as the outdoor temperature drops, if the outdoor temperature is too low and the heating performance is insufficient, use other heating appliances as well.

### Indication of sound values

The sound values are the values (A scale) measured in a chamber such as an anechoic chamber following the ISO Standards. In the actual installation state, the value is normally larger than the values given in the catalog due to the effect of surrounding noise and echo. Take this into consideration when installing.

### Use in oil atmosphere

Avoid installing this unit in as atmosphere where oil scatters or builds up, such as in a kitchen or machine factory. If the oil adheres to the heat exchanger, the heat exchanging performance will drop, mist may be generated, and the synthetic resin parts may deform and break.

### Use in acidic or alkaline atmosphere

If this unit is used in an acidic or alkaline atmosphere such as hot spring areas having high levels of sulfuric gases, places where the exhaust of the heat exchanger is sucked in, or at coastal areas where the unit is subject to salt breezes, the outer plate or heat exchanger, etc., will corrode.

### Use in places with high ceilings

If the ceiling is high, install a circulator to improve the heat and air flow distribution when heating.

### Refrigerant leakage

The refrigerant gas (R410A) used for Air conditioner is non-toxic and inflammable in its original state. However, in consideration of a state where the refrigerant leaks into the room, measures against refrigerant leaks must be taken in small rooms where the tolerable level could be exceeded. Take measures by installing ventilation devices, etc.

### Use in snowy areas

Take the following measures when installing the outdoor unit in snowy areas.

#### •Snow show

Install a snow-prevention hood so that the snow does not obstruct the air intake port, and so that the snow does not enter and freeze in the outdoor unit.

#### •Snow piling

In areas with heavy snow fall, the piled snow could block the air intake port. In this case, a frame that is 50cm or higher than the estimated snow fall must be installed underneath the outdoor unit.

### Automatic defrosting device

If the temperature is low, and the humidity is high, frost will stick to the heat exchanger of the outdoor unit. If use is continued, the heating performance will drop.

The "Automatic defrosting device" will function to remove this frost.

After heating for approx, three to ten minutes, it will stop, and the frost will be removed. After defrosting, hot air will be blown again.

### Servicing the air-conditioner

After the air-conditioner is used for several seasons, dirt will build up in the air-conditioner causing the performance to drop. In addition to regular servicing, we recommend the maintenance contract (charged for) by a specialist.

## ⚠ Safety Precautions

### Air-conditioner usage target

The air-conditioner described in this catalog is a dedicated cooling/heating device for human use.

Do not use it for special applications such as the storage of foodstuffs, animals or plants, precision devices or valuable art, etc.

This could cause the quality of the items to drop, etc.

Do not use this for cooling vehicles or ships. Water leakage or current leaks could occur.

### Before use

Always read the "User's Manual" thoroughly before starting use.

### Installation

Always commission the installation to a dealer or specialist. Improper installation will lead to water leakage, electric shocks and fires.

Use the MHI-designated products for the accessories such as the air purifier, humidifier, and auxiliary electric heater for heating.

### Usage place

Do not install in places where combustible gas could leak or where there are sparks.

Installation in a place where combustible gas could be generated, flow or accumulate, or places containing carbon fibers could lead to fires.



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<http://www.mhi.co.jp>

### Our factories are ISO9001 and ISO14001 certified.

#### Certified ISO 9001



**BIWAJIMA PLANT**  
Mitsubishi Heavy Industries, Ltd.  
Air-conditioning & Refrigeration Systems Headquarters  
Certificate number: JGA-0130  
Date of certification: December 1994



**MITSUBISHI HEAVY INDUSTRIES-  
MAHAJAK AIR CONDITIONERS CO., LTD.**  
Certificate Number: 04104 1998 0813  
Date of Registration: October 1998



**Mitsubishi Heavy  
Industries-Haier (Quangdao)  
Air-conditioners Co., Ltd.**  
Certificate Number: S170-1998-AD-RSG-R/A  
Date of certification: April 1998

#### Certified ISO 14001



**BIWAJIMA PLANT**  
Mitsubishi Heavy Industries, Ltd.  
Air-conditioning & Refrigeration Systems Headquarters  
Certificate number: JGA-EM0256  
Date of certification: November 1998



**MITSUBISHI HEAVY INDUSTRIES-  
MAHAJAK AIR CONDITIONERS CO., LTD.**  
Certificate Number: 04104 1998 0813 E5  
Date of Registration: December 2005



**Mitsubishi Heavy  
Industries-Haier (Quangdao)  
Air-conditioners Co., Ltd.**  
Certificate number: 01-1998-083  
Date of certification: December 1998



Because of our policy of continuous improvement, we reserve right to make changes in all specifications without notice.