MITSUBISHI HEAVY INDUSTRIES

MOVE THE WORLD FORWARD MITSUBISHI HEAVY INDUSTRIES GROUP

VRF inverter multi-system Air-Conditioners

KXZ

High Performance Air-Conditioning

2020

50Hz

20KX01E
EU/EEA

High Performance Air-Conditioning 2020

KXZ

The Mitsubishi Heavy Industries Thermal Systems KXZ VRF series delivers high performance in cooling and heating for all commercial applications.
It offers the highest level of design flexibility, improved efficiency as well as enhanced operational functions.

MITSUBISHI HEAVY INDUSTRIES

Line Up

R410A INVERTER

Micro KXZ | Micro KXZ | KXZ Lite | KXZ | KXZ

Heat recovery system

RC-EX3A

Simple use with advanced setting Remote control

Contents

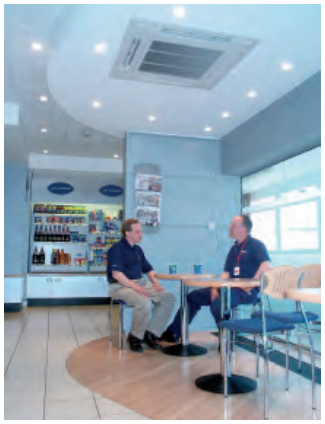
KXZ system is the best air conditioning solution for "Sophisticated" buildings

KX VRF series delivers high cooling/heating performance for all commercial applications.

High Efficiency & Comfort	•High energy efficiency with advanced technology •Energy saving control by VTCC (Variable Temperature & Capacity Control) •Individual, centralized and customized comfort control
Design Flexibility	•Long piping length and wide limitation of piping •Various indoor units to each application •Easy selection and design software
Easy & Customized Control	•Individual advanced control by wired and wireless remote controller •Various options for BMS & Centralized controller
Good Serviceability	•Easy access for maintenance •Engineering and monitoring tool available

"Micro KXZ series" for small offices, shops and residential applications

Industry leading compact design, energy efficiency, and high reliability from our high technology



Specific cases of VRF system installation from Mitsubishi Heavy Industries Thermal Systems

Case study: Hotel and Leisure

VRF heat recovery systems from Mitsubishi Heavy Industries Thermal Systems KX range are part of the exacting specification for luxury hotels and airport-style bus station. Mitsubishi Heavy Industries Thermal Systems VRF systems feature advanced inverter technology which adjusts compressor output to match the cooling or heating demands of the indoor units to save energy and eliminate temperature fluctuations. Simultaneous heating or cooling can be provided in different areas as required, with heat gain in sunnier, south facing rooms providing useful energy for rooms on the cooler, shadier side of the buildings.

Case study: Education

A VRF system with inverter control from Mitsubishi Heavy Industries Thermal Systems is helping to make Crossways Academy in Lewisham a cool place to learn for 500 students. Comfortable temperatures need to be maintained as economically as possible in rooms where large numbers of students will enter or leave at the same time. IT equipment being switched on and off and the use of electric blinds to control glare will all contribute to substantial fluctuations in heat load. A VRF KX system from Mitsubishi Heavy Industries Thermal Systems provides an ideal solution. Much of the building was designed to rely on natural ventilation, with windows operated electronically. The air conditioning system is linked to this control system to close down when windows are opened. Mitsubishi Heavy Industries Thermal Systems KX is particularly appropriate for many such retrofit applications.

KXZ

The KXZ product lineup has been extended to offer solutions delivering up to 60 horsepower (60HP) when using a combination of 3 outdoor units. Furthermore with the addition of the Hi-COP series, installation options have been greatly increased.

Previous Model	KXZE1	KXZXE1 (Hi-COP)
Up to 48HP	Up to 60HP	8-36HP

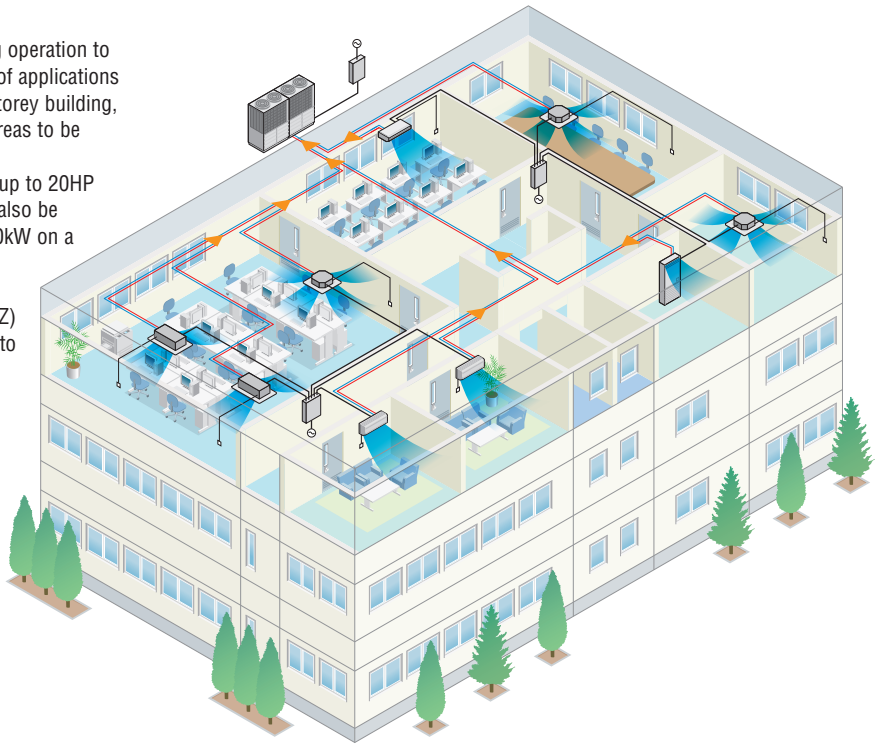
By combining 3 outdoor units 60HP can be achieved

Heat pump systems

The heat pump systems operate with 2 inter-connecting pipes, thus commonly referred to as a '2-pipe system'.

These systems provide either a heating or cooling operation to all indoor units and are suitable for a wide range of applications from an individual apartment to an entire multi storey building, especially where there are significant open plan areas to be controlled.
The range starts with a 12.1kW cooling capacity, up to 20HP with 56.0kW cooling capacity. Outdoor units can also be "twinned" or "tripled" providing up to 60HP/168.0kW on a single system.

The range has a total piping length of 1000m (KXZ) and the furthest indoor unit can be connected up to 160m (KXZ) from the outdoor unit.



Capacity Range

Capacity	4HP	5HP	6HP	8HP	10HP	12HP	14HP	16HP	17HP	18HP	20HP
Model Code : kW	12.1	14	15.5	22.4	28	33.5	40.0	45.0	47.5	50.0	56.0
BTU / h	41,300	47,800	52,900	76,400	95,500	114,300	136,500	153,500	162,100	170,600	191,100

Capacity	22HP	24HP	26HP	28HP	30HP	32HP	34HP	36HP	38HP	40HP
Model Code : kW	61.5	67.0	73.5	80.0	85.0	90.0	95.0	100.0	106.0	112.0
BTU / h	209,800	228,600	250,800	273,000	290,000	307,100	324,100	341,200	361,700	382,100

Capacity	42HP	44HP	46HP	48HP	50HP	52HP	54HP	56HP	58HP	60HP
Model Code : kW	120.0	125.0	130.0	135.0	142.5	145.0	150.0	156.0	162.0	168.0
BTU / h	409,400	426,500	443,600	460,600	486,200	494,700	511,800	532,200	552,700	573,200

Product Line Up

<Outdoor units>

Micro KXZ

12.1kW	14.0kW	15.5kW
4HP	5HP	6HP
FDC121KXZEN1	FDC140KXZEN1	FDC155KXZEN1
FDC121KXZES1	FDC140KXZES1	FDC155KXZES1

Micro KXZ

22.4kW	28.0kW
8HP	10HP
FDC224KXZME1	FDC280KXZME1

KXZ Lite

22.4kW	28.0kW
8HP	10HP
FDC224KXZPE1	FDC280KXZPE1

Standard model KXZE1

FDC280,335

FDC400~560

28.0kW	33.5kW	40.0kW	45.0kW	47.5kW	50.0kW	56.0kW
10HP	12HP	14HP	16HP	17HP	18HP	20HP
FDC280KXZE1	FDC335KXZE1	FDC400KXZE1	FDC450KXZE1	FDC475KXZE1	FDC500KXZE1	FDC560KXZE1

FDC615,670

61.5kW	67.0kW	73.5kW	80.0kW	85.0kW	90.0kW	95.0kW	100.0kW	106.0kW	112.0kW
22HP	24HP	26HP	28HP	30HP	32HP	34HP	36HP	38HP	40HP
FDC615KXZE1	FDC670KXZE1	FDC735KXZE1	FDC800KXZE1	FDC850KXZE1	FDC900KXZE1	FDC950KXZE1	FDC1000KXZE1	FDC1060KXZE1	FDC1120KXZE1
FDC280KXZE1	FDC335KXZE1	FDC335KXZE1	FDC400KXZE1	FDC400KXZE1	FDC450KXZE1	FDC475KXZE1	FDC500KXZE1	FDC500KXZE1	FDC560KXZE1
FDC335KXZE1	FDC335KXZE1	FDC400KXZE1	FDC400KXZE1	FDC450KXZE1	FDC450KXZE1	FDC475KXZE1	FDC500KXZE1	FDC560KXZE1	FDC560KXZE1

FDC735

FDC800~1120

FDC1200~1680

120.0kW	125.0kW	130.5kW	135.0kW	142.5kW	145.0kW	150.0kW	156.0kW	162.0kW	168.0kW
42HP	44HP	46HP	48HP	50HP	52HP	54HP	56HP	58HP	60HP
FDC1200KXZE1	FDC1250KXZE1	FDC1300KXZE1	FDC1350KXZE1	FDC1425KXZE1	FDC1450KXZE1	FDC1500KXZE1	FDC1560KXZE1	FDC1620KXZE1	FDC1680KXZE1
FDC400KXZE1	FDC400KXZE1	FDC400KXZE1	FDC450KXZE1	FDC475KXZE1	FDC475KXZE1	FDC500KXZE1	FDC500KXZE1	FDC500KXZE1	FDC560KXZE1
FDC400KXZE1	FDC400KXZE1	FDC450KXZE1	FDC450KXZE1	FDC475KXZE1	FDC475KXZE1	FDC500KXZE1	FDC500KXZE1	FDC560KXZE1	FDC560KXZE1
FDC400KXZE1	FDC450KXZE1	FDC450KXZE1	FDC450KXZE1	FDC475KXZE1	FDC500KXZE1	FDC500KXZE1	FDC560KXZE1	FDC560KXZE1	FDC560KXZE1

Hi-COP model KXZXE1

FDC224

FDC280,335

22.4kW	28.0kW	33.5kW
8HP	10HP	12HP
FDC224KXZXE1	FDC280KXZXE1	FDC335KXZXE1

FDC450

FDC500

FDC560~670

45.0kW	50.0kW	56.0kW	61.5kW	67.0kW
16HP	18HP	20HP	22HP	24HP
FDC450KXZXE1	FDC500KXZXE1	FDC560KXZXE1	FDC615KXZXE1	FDC670KXZXE1
FDC224KXZXE1	FDC224KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC335KXZXE1
FDC224KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC335KXZXE1	FDC335KXZXE1

FDC735

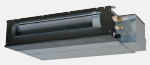
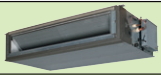
FDC800

FDC850~1000

73.5kW	80.0kW	85.0kW	90.0kW	95.0kW	100.0kW
26HP	28HP	30HP	32HP	34HP	36HP
FDC735KXZXE1	FDC800KXZXE1	FDC850KXZXE1	FDC900KXZXE1	FDC950KXZXE1	FDC1000KXZXE1
FDC224KXZXE1	FDC224KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC335KXZXE1
FDC224KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC335KXZXE1	FDC335KXZXE1
FDC280KXZXE1	FDC280KXZXE1	FDC280KXZXE1	FDC335KXZXE1	FDC335KXZXE1	FDC335KXZXE1

<Indoor units>

A range of 17 types of exposed or concealed indoor units available in a wide range of capacities (total 93 indoor models).
The best solution of indoor units for all applications is available from our full lineup.

				1.5kW <0.5HP>	2.2kW <0.8HP>	2.8kW <1HP>	3.6kW <1.25HP>
Micro KXZ (4~6HP) NEW (4HP)				←	←	←	←
Micro KXZ (8·10HP) NEW				←	←	←	←
KXZ Lite				←	←	←	←
Standard model **KXZE1**				←	←	←	←
Hi-COP model **KXZXE1**				←	←	←	←
Heat recovery system **KXZRE1**				←	←	←	←
Ceiling Cassette	4way	FDT				FDT28KXZE1	FDT36KXZE1
	4way Compact	FDTC		FDTC15KXZE1	FDTC22KXZE1	FDTC28KXZE1	FDTC36KXZE1
	2way	FDTW				FDTW28KXE6F	
	1way	FDTS					
	1way Compact	FDTQ			FDTQ22KXE6F	FDTQ28KXE6F	FDTQ36KXE6F
Duct Connected	High Static Pressure	FDU					
	Low/Middle Static Pressure	FDUM			FDUM22KXE6F	FDUM28KXE6F	FDUM36KXE6F
	Low Static Pressure(thin)	FDUT		FDUT15KXE6F-E	FDUT22KXE6F-E	FDUT28KXE6F-E	FDUT36KXE6F-E
	Compact & Flexible	FDUH			FDUH22KXE6F	FDUH28KXE6F	FDUH36KXE6F
Wall Mounted		FDK		FDK15KXZE1	FDK22KXZE1	FDK28KXZE1	FDK36KXZE1
Ceiling Suspended		FDE					FDE36KXZE1
Floor Standing	2way	FDFW				FDFW28KXE6F	
	With Casing	FDFL					
	Without Casing	FDFU				FDFU28KXE6F	
OA Processing unit		FDU-F			• FDU-F series are not connectable to Micro model (4~6HP), KXZ		
			Air flow m³/h	150	250	350	500
Fresh Air Ventilation and Heat Exchange unit		SAF		SAF150E7	SAF250E7	SAF350E7	SAF500E7
Fresh Air Assembly		SAF-DX			SAF-DX250E6	SAF-DX350E6	SAF-DX500E6

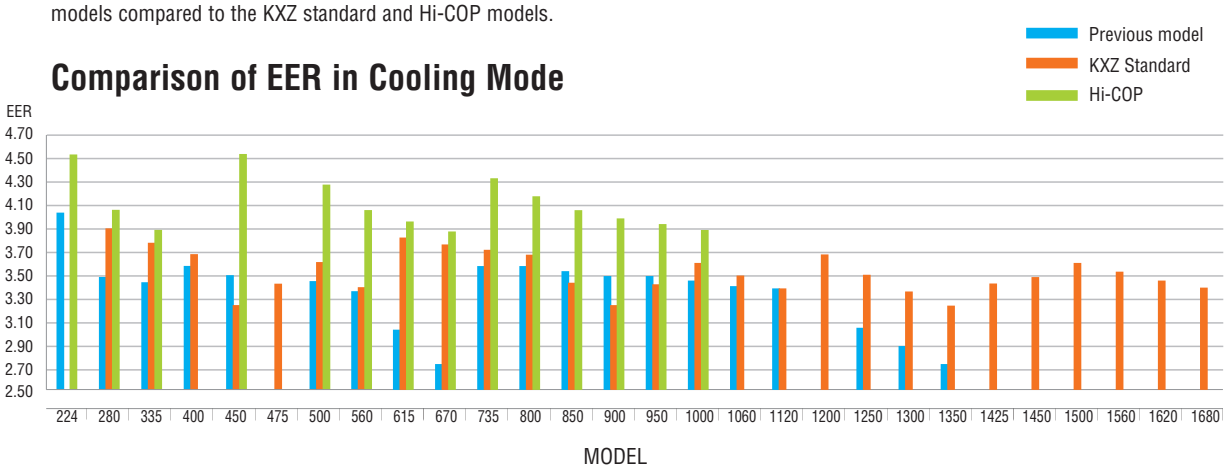
	4.5kW <1.6HP>	5.6kW <2HP>	7.1kW <2.5HP>	9.0kW <3.2HP>	11.2kW <4HP>	14.0kW <5HP>	16.0kW <6HP>	22.4kW <8HP>	28.0kW <10HP>
	FDT45KXZE1	FDT56KXZE1	FDT71KXZE1	FDT90KXZE1	FDT112KXZE1	FDT140KXZE1	FDT160KXZE1		
	FDTC45KXZE1	FDTC56KXZE1							
	FDTW45KXE6F	FDTW56KXE6F	FDTW71KXE6F	FDTW90KXE6F	FDTW112KXE6F	FDTW140KXE6F			
	FDTS45KXE6F		FDTS71KXE6F						
	FDU45KXE6F	FDU56KXE6F	FDU71KXE6F	FDU90KXE6F	FDU112KXE6F	FDU140KXE6F	FDU160KXE6F	FDU224KXZE1	FDU280KXZE1
	FDUM45KXE6F	FDUM56KXE6F	FDUM71KXE6F	FDUM90KXE6F	FDUM112KXE6F	FDUM140KXE6F	FDUM160KXE6F		
	FDUT45KXE6F-E	FDUT56KXE6F-E	FDUT71KXE6F-E						
	FDK45KXZE1	FDK56KXZE1	FDK71KXZE1	FDK90KXZE1					
	FDE45KXZE1	FDE56KXZE1	FDE71KXZE1		FDE112KXZE1	FDE140KXZE1			
	FDFW45KXE6F	FDFW56KXE6F							
			FDFL71KXE6F						
	FDFU45KXE6F	FDFU56KXE6F	FDFU71KXE6F						
Lite.				FDU650FKXZE1		FDU1100FKXZE1		FDU1800FKXZE1	FDU2400FKXZE1
		800	1000						
		SAF800E7	SAF1000E7						
		SAF-DX800E6	SAF-DX1000E6						

1. High Efficiency & Comfort

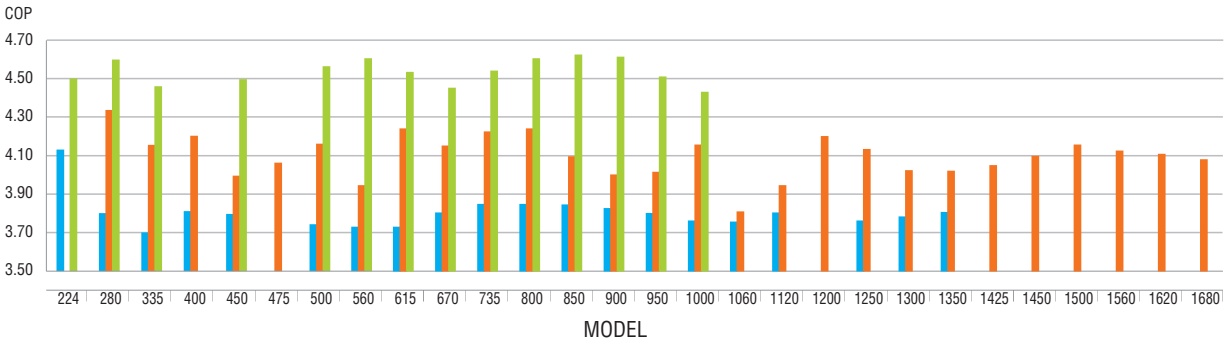
Improved Efficiency

The below graphs highlight the improved efficiencies between the previous models compared to the KXZ standard and Hi-COP models.

Comparison of EER in Cooling Mode

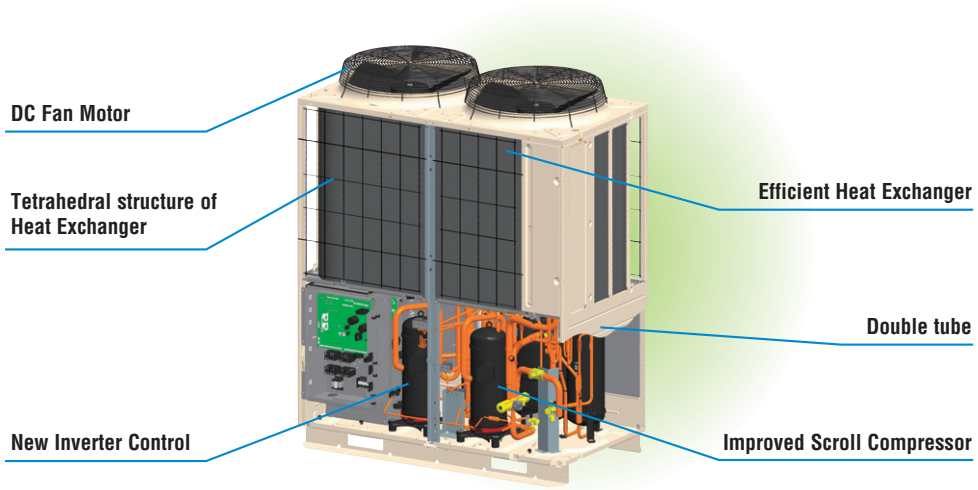


Comparison of COP in Heating Mode



High efficiency and compact design are achieved by applying advanced components

10~60HP



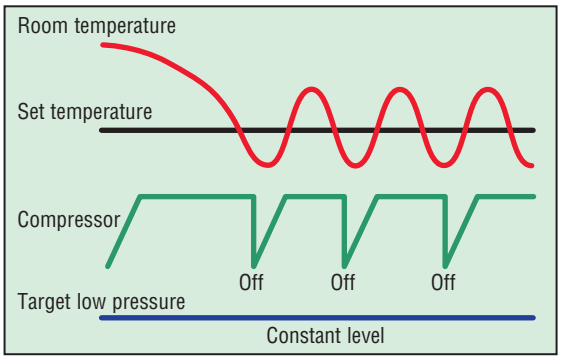
Variable Temperature and Capacity Control

VTCC

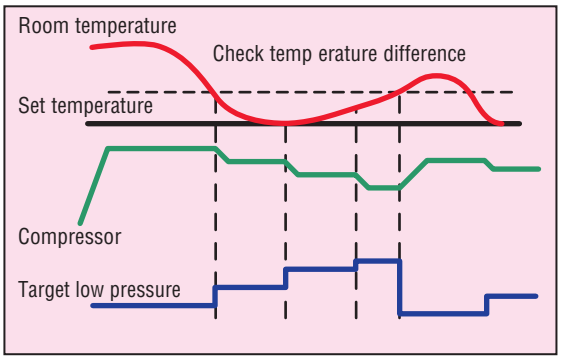
- The VTCC is a newly developed energy saving function designed by Mitsubishi Heavy Industries Thermal Systems.
- A new feature to all our KXZ ranges which provides up to 34%* energy savings in both cooling and heating mode.
- VTCC is a function specifically designed to maximise energy savings in partial load conditions throughout all seasons.

*34% energy savings are based on comparison with a KXZ standard model with VTCC vs. a KXZ standard model both under partial load condition.

Normal operation (in the cooling mode)



Energy saving operation (in the cooling mode)

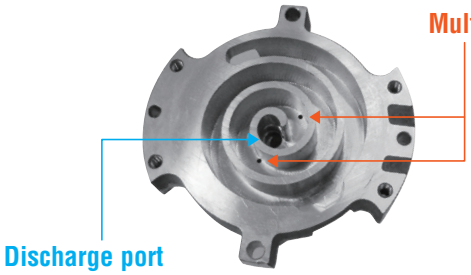


VTCC adjusts the target pressure of the refrigerant cycle in the outdoor unit automatically according to the demand of the indoor units in partial load conditions.
These smooth adjustments ensure an optimal capacity usage of the indoor units as well as maximised energy savings. Ultimately this also increases comfort for the user.

For example, in partial load conditions where you have low cooling and heating requirements, VTCC reduces the compressor frequency and controls the actuators in the outdoor unit.
Overall with the VTCC functionality you will always have an additional energy saving of up to 34% (depending on configuration and usage of system) in low cooling and heating load requirements.

Multiport compressor that achieves high efficiency

The new multiport discharge area in the compressor has optimized pressure control with better balancing.
The performance improvement at medium Hz has resulted in higher annual efficiencies.

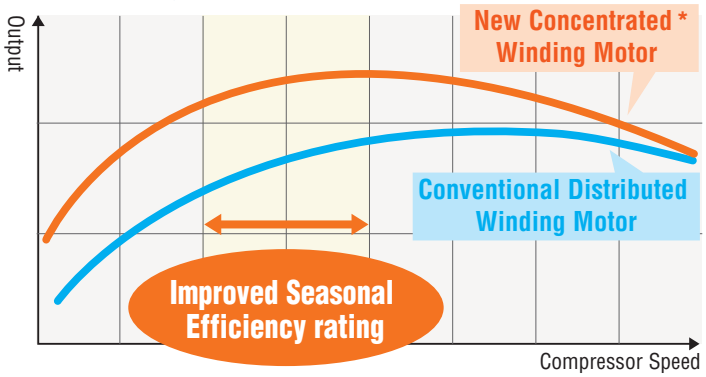


By optimizing pressure adjustment in decompression, the compressor realizes higher efficiency.

Concentrated winding motor achieves "High Output" and "Total Efficiency Improvement"

The newly designed high performance CPU enables high precision optimization for compressor speed, which leads to concentrated winding motor use.
Our product achieves high output and better energy saving effects and
in particular improves seasonal efficiency rating.

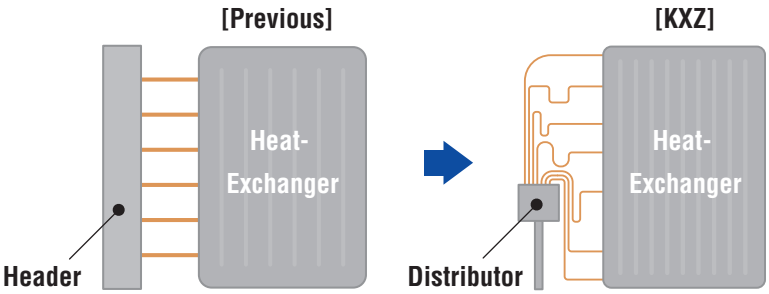
Total Efficiency



*Applied for KXZE1:10/12/17/18/20HP, KXZXE1:8HP & KXZ Lite:8/10HP

Improved Heat-exchanger

With piping layout rearranged from header to heat exchanger, refrigerant distribution flow has improved and maximum energy efficiency has been achieved. Heat exchanger has improved refrigerant distribution and increased effectiveness.
Furthermore due to expansion of effective heat transfer area in heat exchanger, energy efficiency has increased.



Strengthened resistance against frost

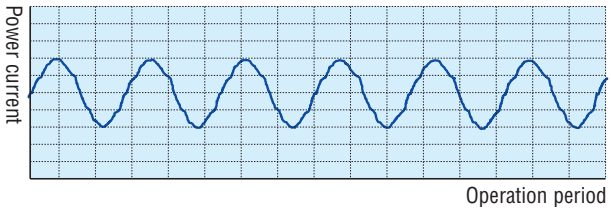
Resistance against frost has been strengthened by achieving improved heat-exchanger.

Vector control

New applied Vector control has a high efficiency and many new advanced features.

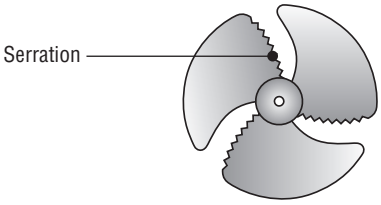
- Smooth operation from low speed to high speed
- Smooth Sine Voltage Wave form are attained
- Energy efficiency is further improved in low speed range

Vector Control



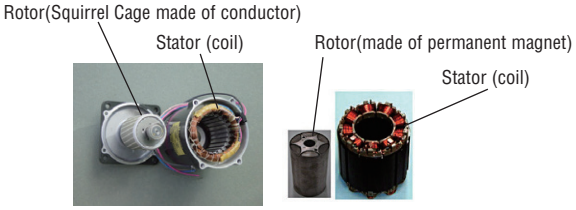
Long-chorded 3 propeller fan with serration

Fan blade design adapted from Mitsubishi Heavy Industries aerospace division - with serrated edges that deliver increased air volume with less power input.



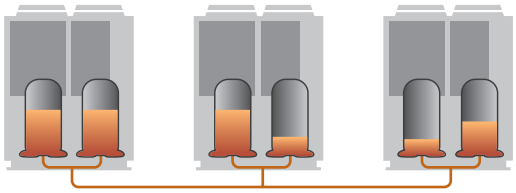
DC Fan Motor

Adoption of DC fan motor has enabled to realize an excellent efficiency of approximate 60% higher than previous models.



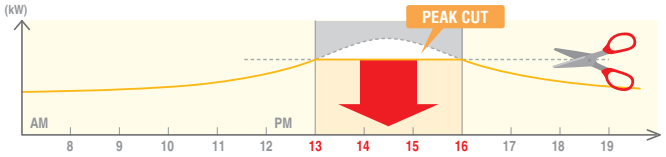
Oil level control capability

Our proprietary technology adjusts the oil level when combining two or three outdoor units, achieving level operation rate, keeping performance of the units and ensuring long life of the system.

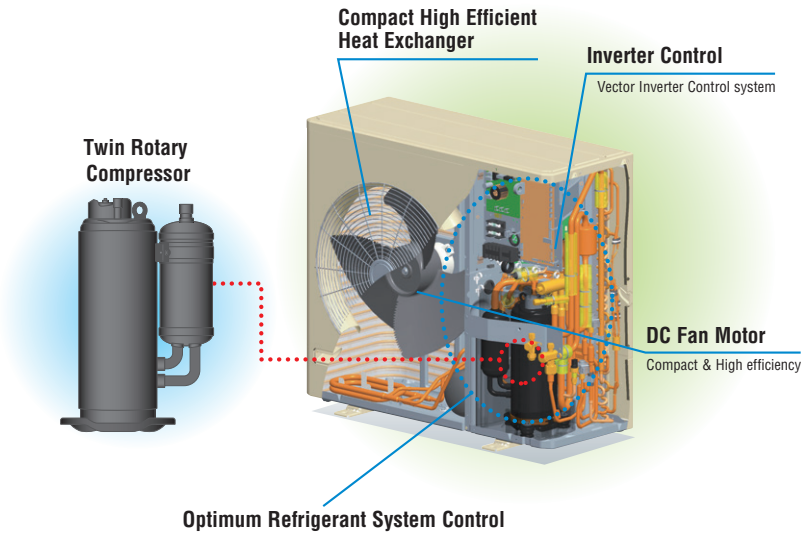


Capacity control

Capacity control can be set by peak cut function with RC-EX3A for better energy saving.
Five-step capacity control is available. (100-80-60-40-0%)



4~6HP

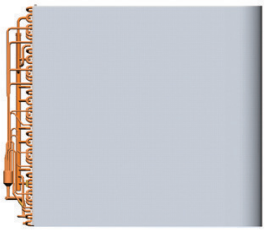


- Optimum heat exchanger refrigerant distribution
- Advanced refrigerant liquid return protection control system
- High speed system control by new Superlink system

Compact high efficiency Heat Exchanger

- Optimizing relationship of the air flow velocity & fin pattern
- Improvement of air distribution Maximizing efficiency of heat exchanger

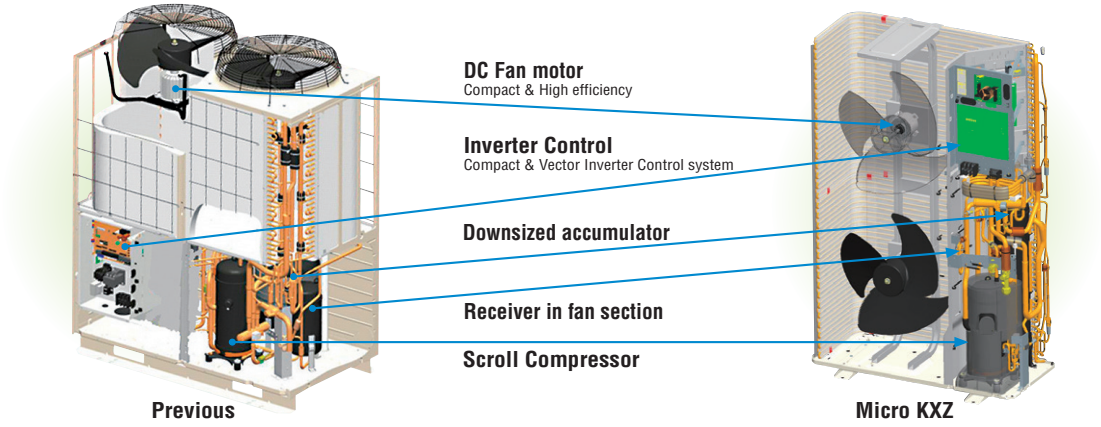
Heat Exchanger



Compact Integrated PCB

- Control Box size reduction
- PCB size reduced by 50%
  Control PCB: Single-sided board ➡ Double-sided board
  Inverter PCB: Power transistor size reduction
- New Superlink system control
- New Design method applid

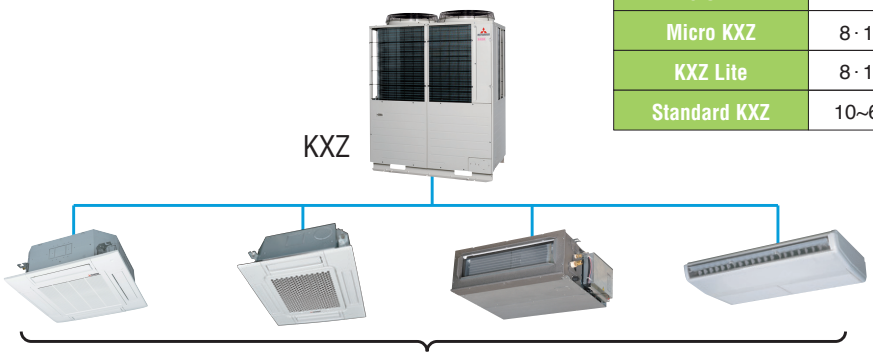
8･10HP



2. Design Flexibility

Indoor unit capacity connection

	HP	Capacity connection
Micro KXZ	4~6	150%
Micro KXZ	8·10	150%
KXZ Lite	8·10	120%
Standard KXZ	10~60	130%



Connectable indoor units

Micro KXZ						
	HP	4	5	6	8	10
	Numbers	8	10*	10*	22	24

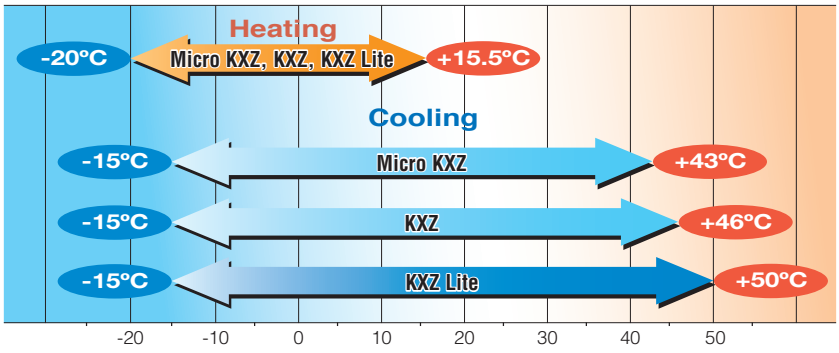
KXZ Lite			
	HP	8	10
	Numbers	8	8

Standard KXZ															
	HP	10	12	14	16	17	18	20	22	24	26	28	30	32	34
	Numbers	24	29	34	39	41	43	48	53	58	63	69	73	78	80
	HP	36	38	40	42	44	46	48	50	52	54	56	58	60	
	Numbers	80	80	80	80	80	80	80	80	80	80	80	80	80	

*When connecting 9 units or more, set the total capacity as follows : 5HP : 110% or less, 6HP : 100% or less.

Wide Range of Operation

KXZ series permits an extensible system design considering a heating range operation down to -20˚C and a cooling range operation up to 46˚C. Furthermore KXZ Lite extends a cooling range operation up to 50˚C.



Control Systems

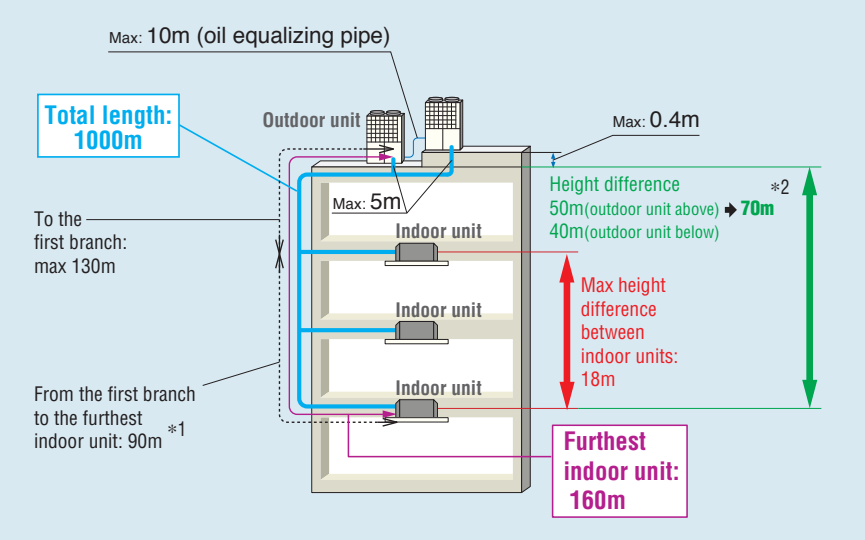
All series offer wide choice of control system and provide the best solution.

[Control system units with SUPERLINK-Ⅱ]

Classification	Type		Model	Connectable Indoor units (Maximum)	Electric power calculation
Individual controller	Wired		RC-E5	16	—
			RC-EX3A	16	—
	Wireless		RCN-T-5AW-E2 etc.	16	—
Center Console	Push buttons		SC-SL1N-E	16	—
			SC-SL2NA-E	64	—
	Touch screen		SC-SL4-AE	128	—
			SC-SL4-BE	128	●
	BMS interface units	Web gateway & BACnet	SC-WBGW256	256(128x2)	●
		Lonworks	SC-LGWNB	96	—

Long Pipe Length 10~60HP

Piping length has extended max height difference between indoor units up to 18m and enables us to put indoor units on extra three floors.
The furthest indoor unit: 160m or total length: 1000m contributes to system design flexibility.

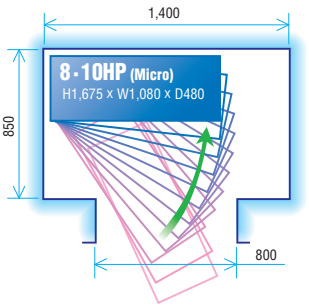


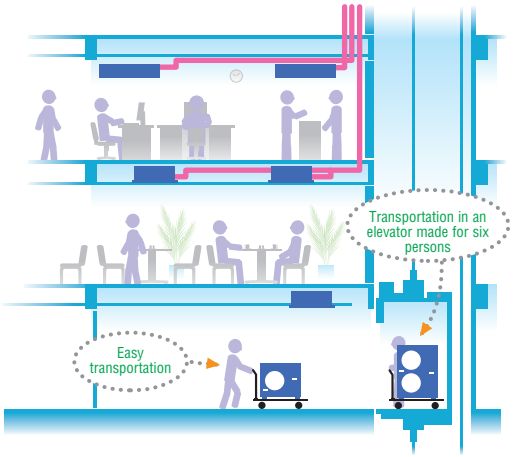
*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

*2 In case of height difference up to 70m, please contact your dealer.
Height difference up to 90m is possible with High Head series.

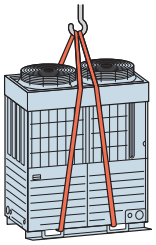
Easy Transportation & Installation

Due to realization of significant reduction in size and foot print which is one of the smallest in the industry, transportation in an elevator made for six persons (Width:1400mm, Depth:850, Open area:800mm) is possible, eliminating cost of a crane and reducing labor.





KXZ is portable and the uniform reduced footprint allows neat, continuous installation.



Blue Fin

Due to application of blue coated fins for the heat exchanger of new outdoor unit, corrosion resistance has been improved compared to previous models.

Automatic Select functions for capacity control (KXZ Lite)

The following 3 items are available for capacity control function. User can select one item individually or select 2or3 items at the same time.
In case of selecting 2or3 items, the unit will operate with the most effective function automatically.

• Compressor speed control

User can set compressor speed at 100%-80%-60%-40% before starting operation with PWB in the outdoor unit or with a demand controller (procured locally).

• Capacity control timer

User can set※ capacity control with RC-EX3A up to 4 times per day maximum.
The timer setting can be changed using 5 minute intervals.

※Please refer to page 13.

• Silent mode

Considering noise regulations or surrounding circumstances, you can now select 4 levels of silent mode.
Setting the combination of silent mode is available by using timer function of RC-EX3A.

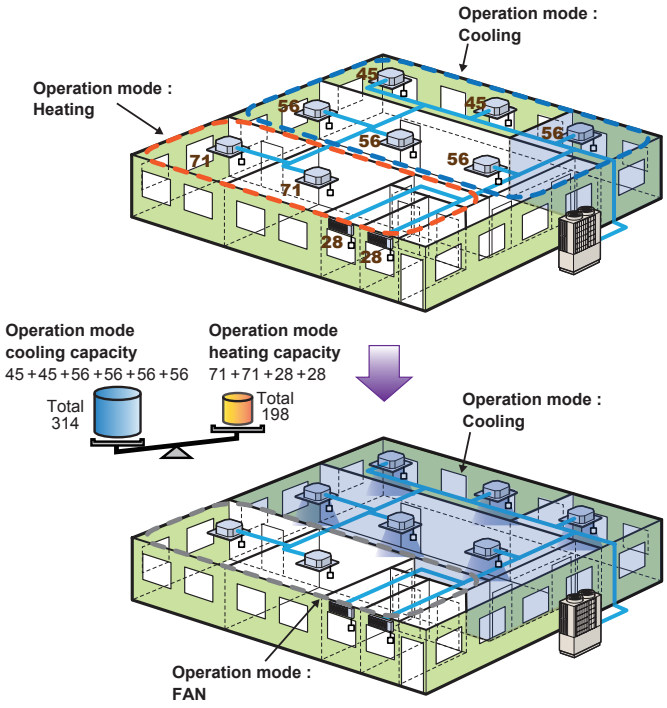
Priority operation mode rule

User can select the following priority operation mode. (for whole system)

1. First unit's operation mode (by default setting)
2. Last unit's operation mode
3. Majority operation mode (see below)
4. Master operation mode (see below)

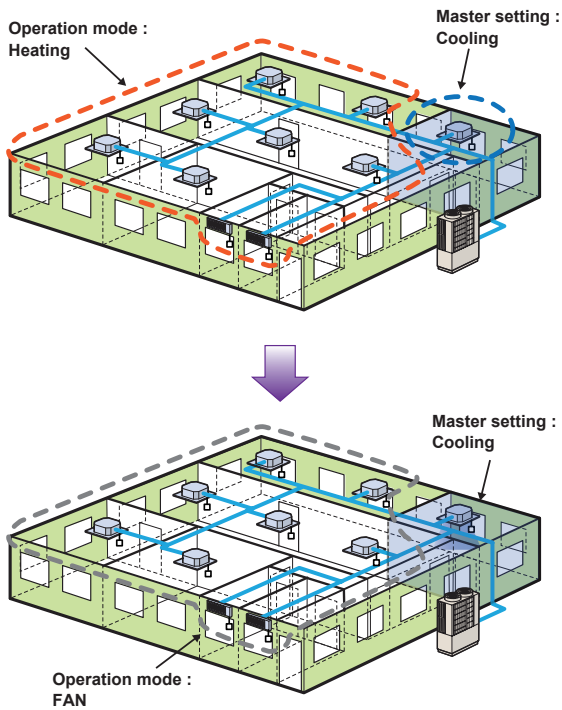
<Majority operation mode>

The system is operated according to the mode selected by the majority of units in operation (whichever greater capacity between the sums of cooling mode and heating mode).
The operation mode in minority is set to fan mode automatically.



<Master operation mode>

The system is operated according to master operation mode.
When master operation mode is set at cooling mode, units selected as heating mode is set to fan mode automatically.



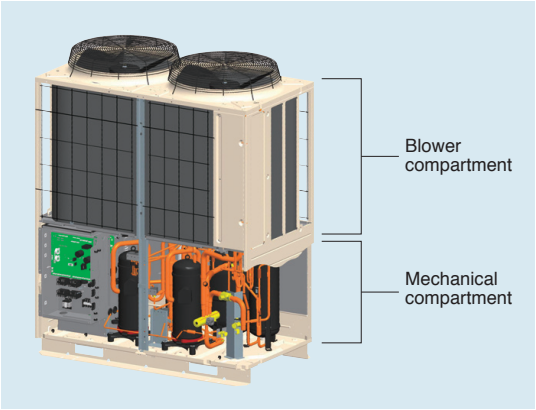
Fixed Cooling mode/fixed heating mode (summer/winter switch)

It is possible to fix the operational mode of the system (either cooling or heating) using a switch (SW3-7) on the outdoor unit PC board - this enables the building user to decide the operation of the system (e.g. cooling only in summer/heating only in winter), to avoid unnecessary energy wastage.
It is also possible to wire the control switch to a remote location (inside the building) to a control room, or even linked to an ambient thermostat.

3. Serviceability

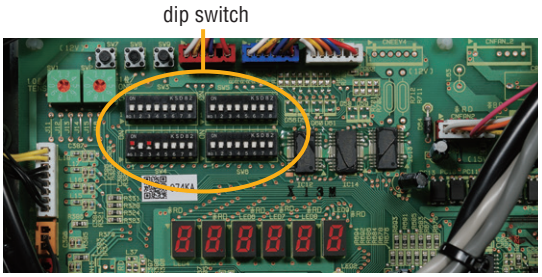
Easy Service

Quick and easy access to service parts by separation of compartments.



Check Operation (10~60HP)

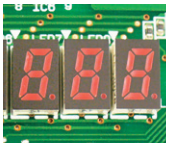
Closing of Service valve, crossing connection of refrigerant piping and electrical wiring, proper operation of EEV (Electrical Expansion Valve) can be checked automatically in cooling operation. This check operation can be done at 0~43ºC outdoor temperature and 10~32ºC indoor temperature by use of outdoor unit dip switch. The check should be done in one refrigerant system. It takes 15~30 minutes and avoids frequent failure by preventing careless mistakes during installation.



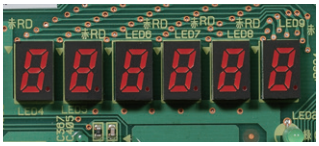
Monitoring Function

All series include features to assist with servicing and troubleshooting.
Various data can be monitored through 3-digit or 6-digit display on the outdoor unit PCB.

Detailed fault diagnosis and operation history memory via 7-segment display.

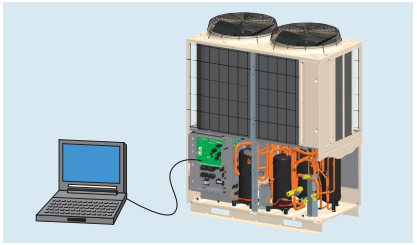


4~6HP
8·10HP(KXZ Lite)

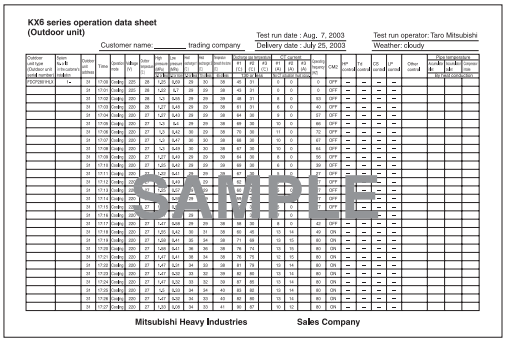


8~60HP

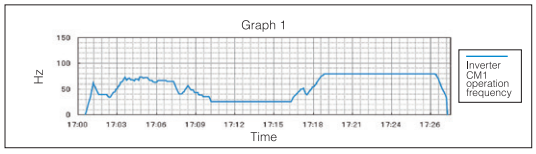
Equipped with RS232C for connection directly to your PC monitoring and service tasks made simple with our service software (“Mente PC”).
All series



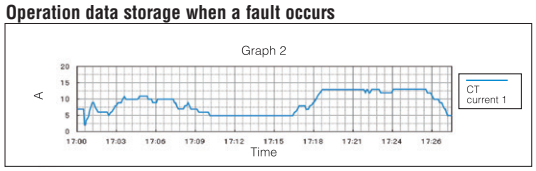
Automatically produced test-run report


KX6 series operation data sheet
(Outdoor unit)
Customer name: _____ trading company
Test run date : Aug. 7, 2003
Delivery date : July 25, 2003
Test run operator: Taro Mitsubishi
Weather: cloudy
SAMPLE
Mitsubishi Heavy Industries
Sales Company

Operation data storage during servicing

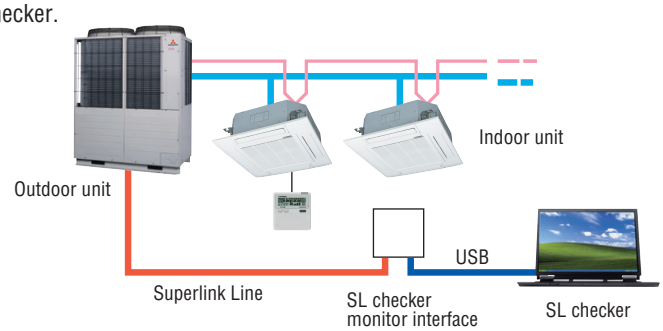


Operation data storage when a fault occurs



SL Checker Ⅱ

Remote Control can be operated function from setting Superlink checker.



3 Layer Construction

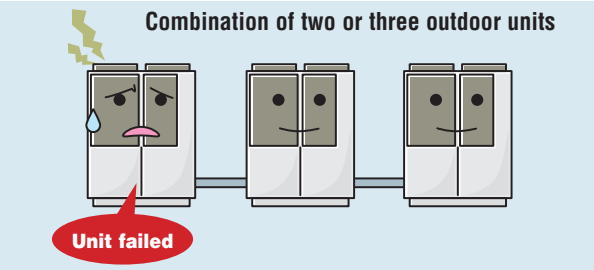
Thanks to control box structure with 3 layer/2 layer construction using hinge connection, service and maintenance has been made much easier for inverter components.

KXZ (3 layer)

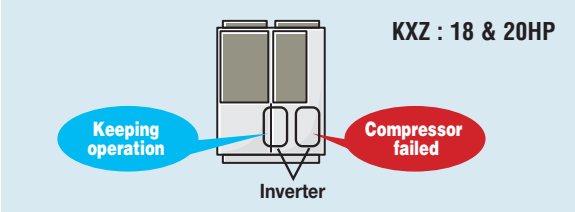
KXZ Lite (2 layer)

Back-up Operation

In the event that one unit has a failure, the system will keep operating with the other good units.



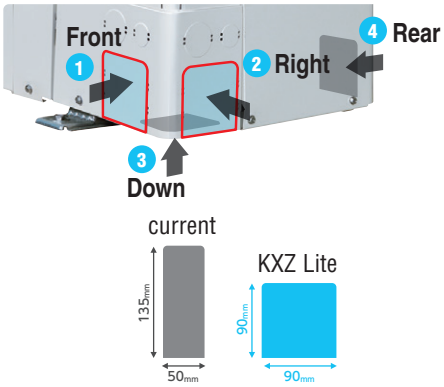
In the event that one compressor has a failure, the unit will keep operating with the other good compressor.



This operation is an emergency measure for a limited time and a necessary repair should be done as soon as possible.

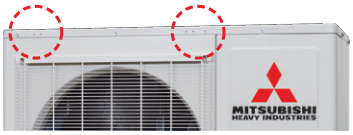
Improved features (KXZ Lite)

Improved freedom of piping layout



Hole size becomes 120% bigger.

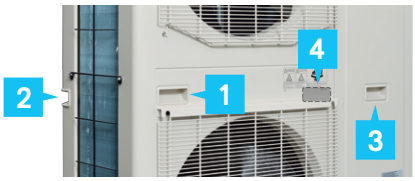
Wire insertion holes for fall prevention



External static pressure

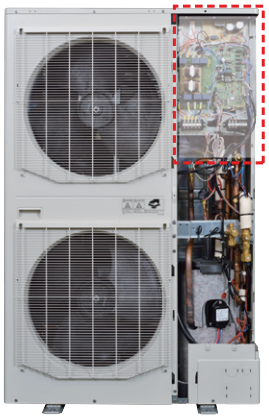
External static pressure is available up to 35 Pa.

Four handles



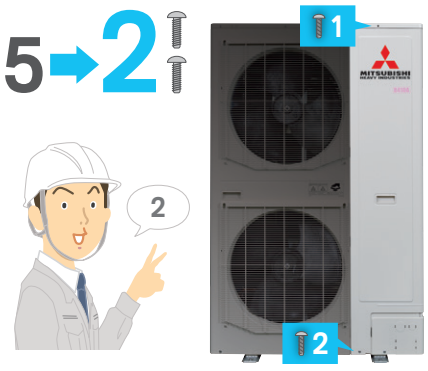
Located at the same level for easy transport and transfer.

A transparent rain cover



Attached as a standard for easy maintenance.

Fixing screws to service panel



Decreasing number of screws from 5 to 2, installation & service speed is improved.

Support tool

BIM (Building Information Modelling)

We can provide high quality Building Information Modelling (BIM) models in three formats:

1. Revit
2. 3D Cad
3. IFC (IFC provides an interoperability solution between different software applications. The format establishes international standards to import and export building objects and their properties)

How and why BIM is used

BIM enables all disciplines of a project (Architects, engineers, quantity surveyors, contractors, clients etc..) to share a common model and data representing the project they are building.

- Better design visualization
- BIM reduces conflicts and changes during construction
- Increases overall accuracy of project documentation
- Improves cost estimating
- Improves energy analysis
- Simplifies reporting and scheduling

https://mhiae.com/BIM/

e-seasonal

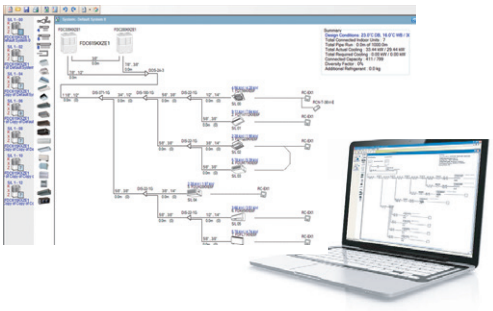
Coming soon

e-seasonal is an application for our Air cooled VRF Outdoor unit selection.
By selecting a combination of systems, location and occupancy profiles you can simulate:

1) Annual seasonal efficiency calculation
2) Annual energy consumption, cost and CO2 emission estimation
3) Comparison with multiple solutions including conventional heaters

It is possible to download to your PC for an off line version or using a web browser for an online version.
e-seasonal provides solution suggestions according to your requested design conditions.

e-solution



e-solution is a design software tool which includes specification details of the latest KXZ VRF systems. By using e-solution this simplifies the process and enables engineers to select the suitable indoor units, outdoor units, pipework, controls & calculate the additional refrigerant required.
Engineers must register and download the e-solution software and ensure to download the latest updates when available and this can be done by simply visiting
https://mhiae.com/e-solution/

Furthermore it was also developed to cater for the design of two and three pipe systems and specifies appropriate models and sizes. It also generates wiring diagrams and engineering drawings which can be exported to AutoCAD or saved in PDF format. This flexibility enables engineers to print select design information and technical data for presentations to clients. Engineers can also incorporate design information into their own formats and documents for personalised proposals.

MHI e-service App

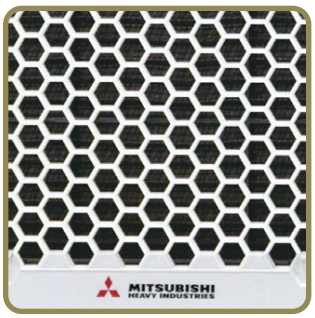
MHI e-service application is available & free to download to both IOS and Android devices.
The application covers "Mitsubishi Heavy Industries Thermal Systems, Ltd" Air conditioning systems: Split (RAC & PAC), VRF, Q-ton & A2W.
This "MHI e-service" Application enables field engineers to make:

- A quick search of the meaning of error codes that may appear when there is a malfunction in a "Mitsubishi Heavy Industries Thermal Systems, Ltd" Air conditioning system, and the probable cause for the malfunction.
- Scan the unit's QR code and search the meaning of error codes depending on the model type
- Additional refrigerant charge calculation for Split (PAC, RAC) & VRF
- Currently available in English & Spanish languages

To download the App go to:
iPhone:https://apps.apple.com/gb/app/mhi-e-service/id1208986291
Android:https://play.google.com/store/apps/details?id=com.mitsubishi.apps.conapp&hl=en_GB

New Generation FDTC

European design & Flat panel



Ceiling cassette
Compact

FDTC

- More comfort and Higher energy savings
- New European Design
- Lower noise

A' DESIGN AWARD WINNER 2019 GOLD

A' Design Award and Competition is the World's largest, most prestigious and influential design accolade, the highest achievement in design. A' Design Award Winner Logo, symbolizes exceptional design excellence in your products, projects and services.

Thin Panel
FDTC thin panel fit within 10mm from the ceiling.

Unique Grille Design
Honeycomb grille

Draft Prevension Panel (Option)
Please refer to next page

Motion Sensor (Option)
Please refer to page 22,25

Big Louver
Improved distribution

It is available to set draft prevention panel and motion sensor as well as FDT.

Compact Design

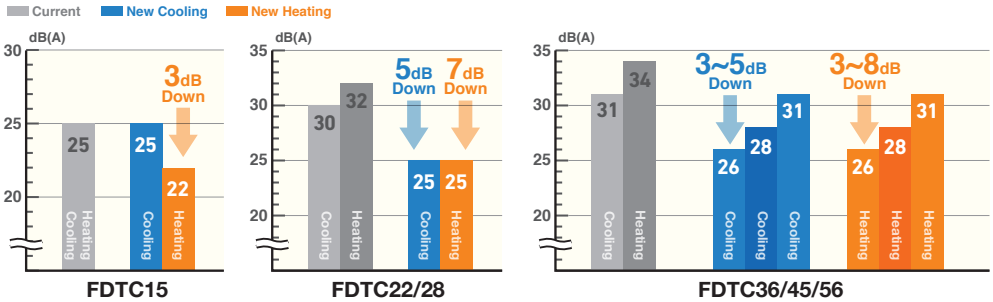
□700mm → □620mm

It's only 14kg

Height of thin panel and main body is only 248 mm allowing a very easy installation.

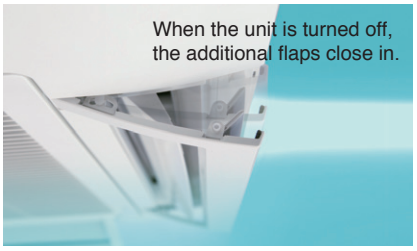
Quieter operation

Adopting new turbo fan and improving new heat exchanger enable to reduce noise.
(Sound pressure level in the Lo mode.)



Draft Prevention Panel (Option)

Keep maximum comfort with minimal draft : New FDT & FDTC control flaps with more flexibility.

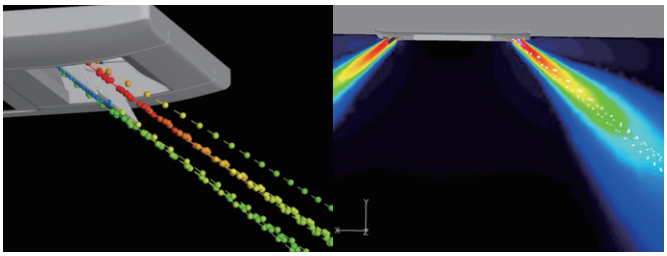


- Brand new function in the market
- Flexible flap control for draft prevention

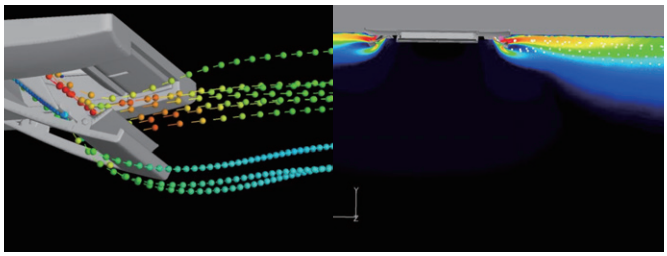
Each of the 4 flaps can be controlled individually at each operation mode. They change air flow direction and prevent draft feeling. This new function also achieve more flexible control for air flow direction.
User can position Draft Prevention Panel panels by using the remote controller only (RC-EX3A,RCN-T-5AW-E2).

• It can also prevent user from being directly blown by hot drafts in heating mode.

Draft Prevention Panel off



Draft Prevention Panel working ※



Draft Prevention Panel provides a comfortable airflow without any draft feeling. Whether cooling or heating a room, the remote control can be used to instantly suppress any warm or cool drafts. This accurately assists how air flow is directed out of the indoor unit.

※ Image is for illustration purposes

Ceiling cassette
FDT

GOOD DESIGN

The Good Design Award is Japan's only comprehensive design evaluation and recommendation initiative, originating with the "Good Design Products Selection System" founded in 1957.
It is now a global design award with participation from numerous Japanese and international companies and organizations. The "G Mark", the symbol of the Good Design Award, is known widely as a symbol of excellent design. (FDT)

Motion sensor

(Option)

Energy saving operation by detecting human movement

Applied models

FDT FDTC FDTW FDTS FDU FDUM FDUT(71only) FDE FDK FDU-F

3 Step Control

1 Power Control

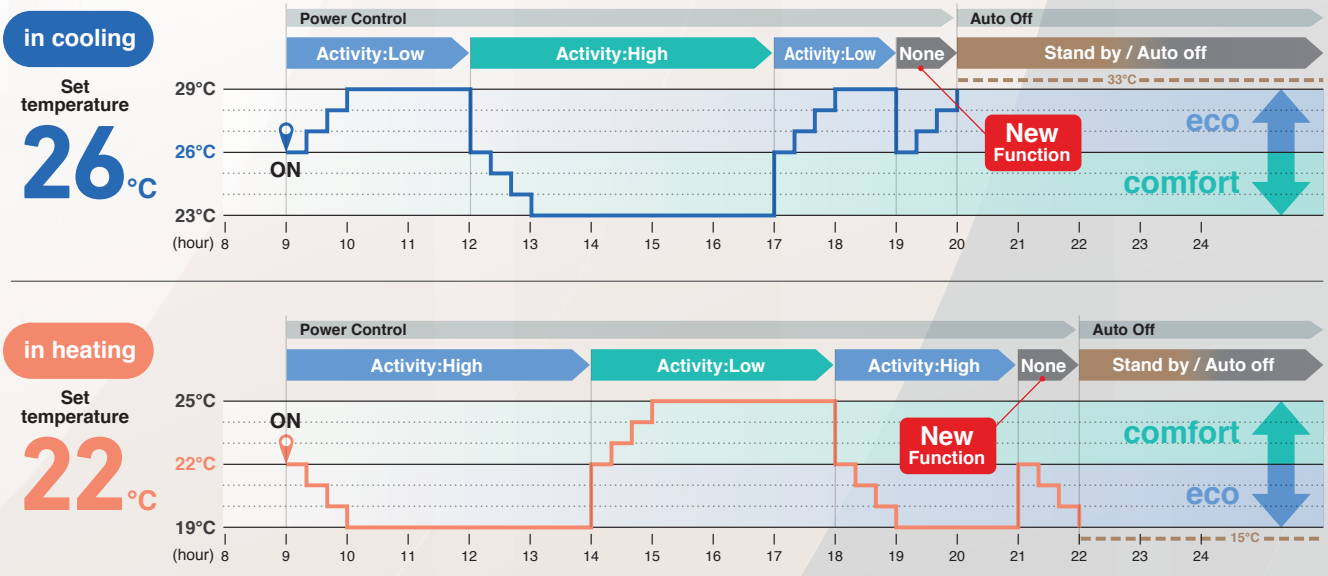
New motion sensor (option) detects human activity. Energy saving control is achieved by shift set temperature according to detected amount of activity.

2 Stand by

Unit will go on stand-by mode when no activity is detected. When the motion sensor detects activity again, the unit it will automatically re-start operation.

3 Auto Off

Unit will go off automatically when no activity is detected for 12 hours.



Operation mode and Control of Motion sensor

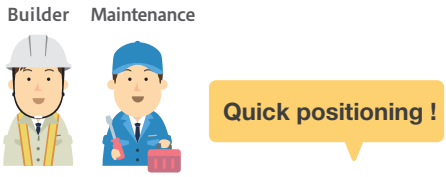
eco operation / comfort operation			Operation mode				
			Auto	Cool	Heat	Dry	Fan
Power Control ※1	Human activity	Low	Cooling +3°C Heating +3°C	+3°C	+3°C	–	–
		High	Cooling -3°C Heating -3°C	-3°C	-3°C	–	–
		None	Cooling +3°C Heating -3°C	+3°C	-3°C	–	–
Auto Off ※2			●	●	●	●	●

※1 Set temperature is revised maximum ±3℃ at Cooling/Heating mode by detecting heat volume movement.
※2 Absence for 1 hour ⇒ Operation stops (“Stand-by”) More 12 hours absence ⇒ Operation stops completely

Serviceability & workability

Easy and quick installation and maintenance

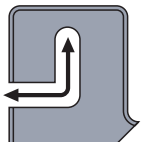
Indoor unit is easily positioned and installed

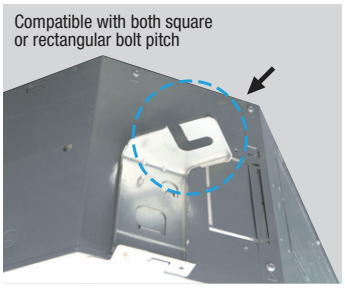


1 Adjustable easier positioning of unit by new slits

FDT

New shape of slit is suitable to install the unit with more flexibility, according to many kinds of suspending bolt pitch on site.
Any rectangular or squared pitch of suspending bolts are available with this slit.

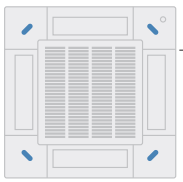


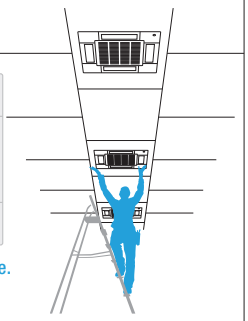


2 New slit in panel allows easier installation on site.

FDT
FDTC

Flexible positioning is available, which helps adjusting the direction of panel according to lines or pattern on the ceiling.





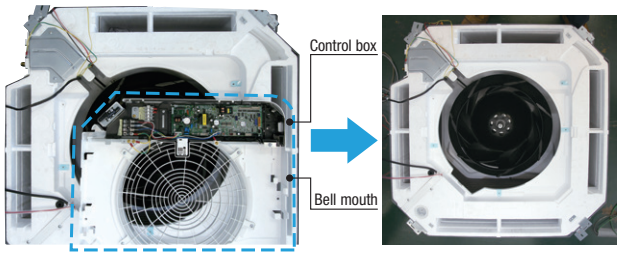
Quick installation and maintenance

1 Easy access to component part for easy maintenance.

FDT

1 **The control box and bell mouth can be removed together.**

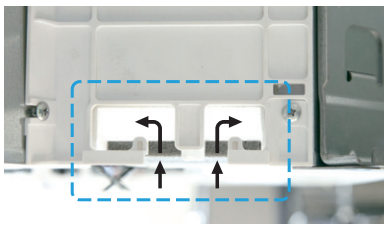
2 **Easy access to impeller and fan motor.**

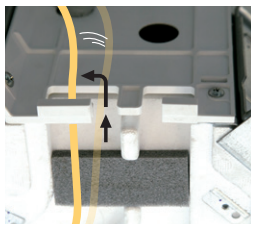


2 New shape of path of wiring

FDT

New shape of path gives easy wiring work for installation.

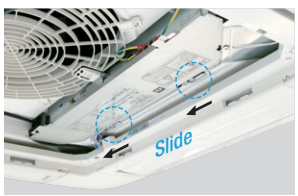


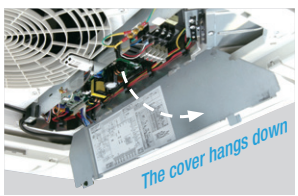


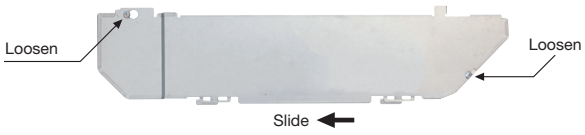
3 No need to remove screws to open the controller cover.

FDT

It is possible to loose and slide open the cover without removing of the screws.
This prevents the cover from falling and damaging to stuffs on site.



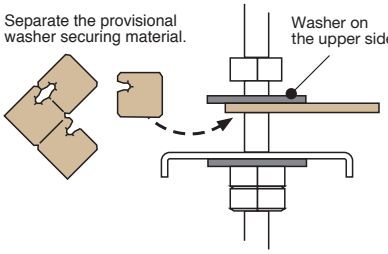


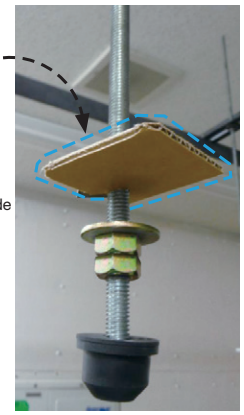


4 More safe installation by stopper of washer

FDT
FDTC

When unit is installed with hook between washers, this stopper helps to install the unit safely, without adjusting washer.





Builder Maintenance

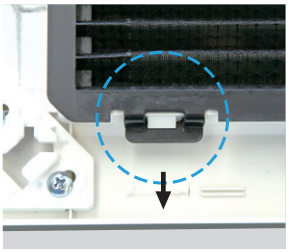
For smooth and easy working

Easy installation and maintenance

1 Easy and flexible hook to remove the filter

FDT FDTC

Hook of soft material helps to remove the filter without dust spreading.

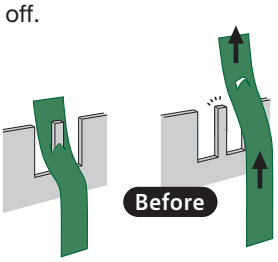


Press the filter tab to the outside and remove the filter.

2 Securely fix the corner lid by strap

FDT

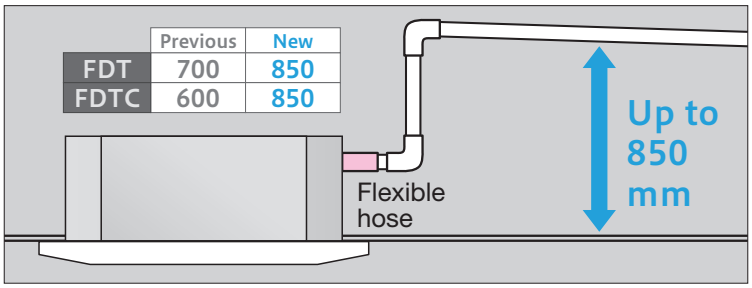
The direction of the strap hook part has been changed from longitudinal to lateral. Furthermore, a barb has been added to the hook pin to prevent the strap from coming off.



3 Drain-up-lift increases up to 850 mm

FDT FDTC

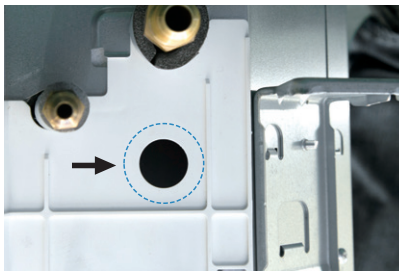
The drain can be lifted up to 850 mm from the ceiling surface.



4 New port to check drain water flow

FDT

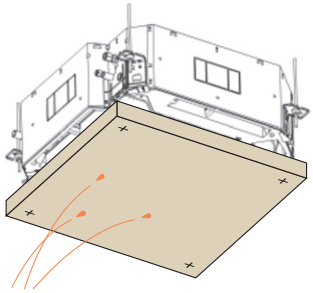
A water supply port has been provided in the piping lid for easier testing of the drain water flow.
(The port is usually sealed with a rubber cap.)



5 Re-use of packages during construction work

FDT FDTC

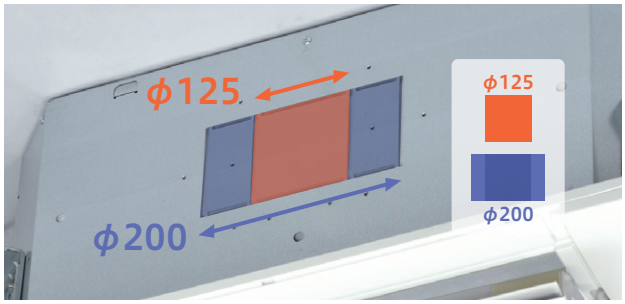
Package material (carton) help to protect the unit from unexpected welding spatter or coming dust to the new unit.



6 More flexible outlet for ducting

FDT FDTC

Both ϕ125 and ϕ200 (oval shaped) are available.



Simple use with advanced settings REMOTE CONTROL

Intuitive touch controller with Liquid Crystal Display

Add new function

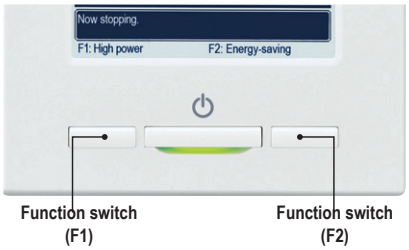
RC-EX3A

Functions

Function Switch

The function switch allows you to select and set two functions of your choice among the six available functions shown.

These functions can be used by simply pressing the button after they are set, allowing you to use your preferable functions immediately.



1 High Power Mode

High Power Mode achieve excessive cooling / heating capacity for 15 minutes to quickly adjust the room temperature to a comfortable level.

2 Energy Saving Mode

Temperature is set to optimized to save energy without losing comfort.

3 Quiet Mode

Outdoor unit starts to operate quietly by activating this mode. The time of this mode can be set in conjunction with Indoor Silent Timer.

4 Home Leave Mode

Home leave mode maintains the room temperature at a moderate level.

5 Favourite Mode

Operation mode, set temperature, fan speed and air flow direction are automatically adjusted to the programmed favourite setting.

6 Filter Sign

Announces the due time for cleaning the air filter.

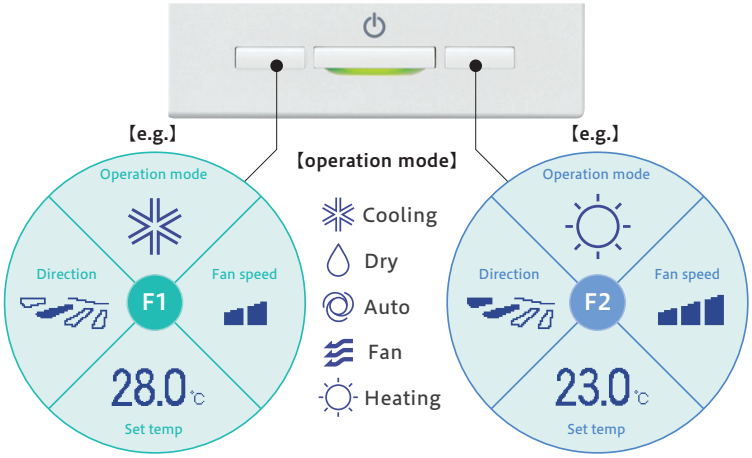
NEW

7 Anti draft ON/OFF

Auti draft can be turned ON/OFF with a single tap of the button.

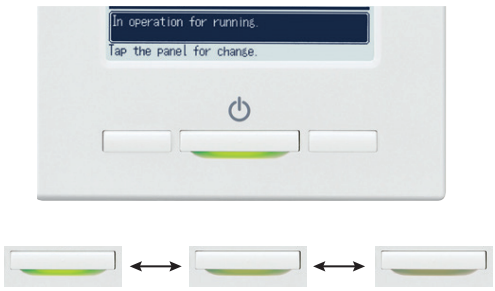
Favourite Mode

Operation mode, set temperature, fan speed and air flow direction are memorized and allocated to two buttons that can be operated by one touch.



Adjusting Brightness of the Operation lamp

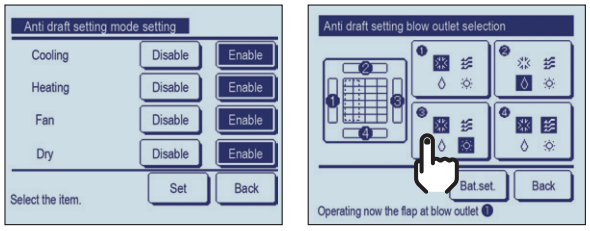
The brightness of the operation lamp behind Run/Stop switch can be adjusted by 10 stages.



Draft prevention setting(only FDT/FDTC series)

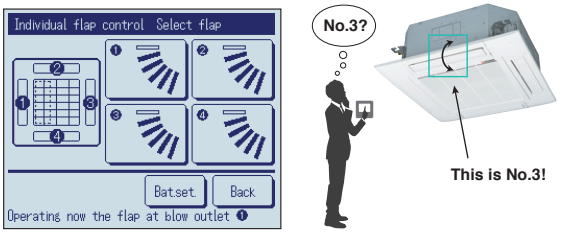
User can enable/disable the motion of panel with anti draft for each blow outlet for each operation mode.
This function can be set while operating.

NEW



Easy adjustment of the Air Flow

User can visually confirm and set the direction of louvres using the visual display on the remote controller.



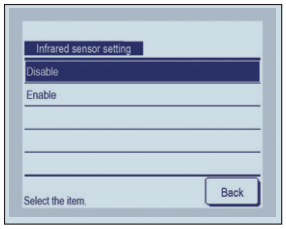
Motion sensor control

Presence of humans and activity are detected by a motion sensor to perform various controls.

❶ Select Enable / Disable

Motion sensor control

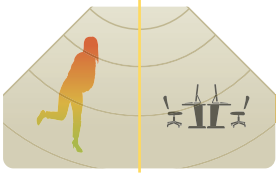
Enable／Disable



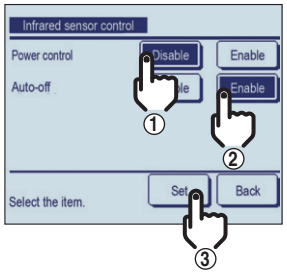
Select Enable / Disable for the motion sensor of the indoor unit connected to the R/C.

❷ Select Enable / Disable per control

- **Power control**
- **Auto-off**



Enable／Disable



Backup Control

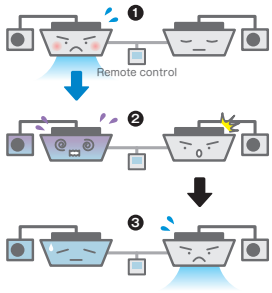
Control restricted to two indoor units (two groups)

Fault backup control

Reassurance　Comfort

Keep back up all the time!

If one of the two indoor units malfunctions and stops its operation, the other starts backup operation so that users' comfort will not be compromised.

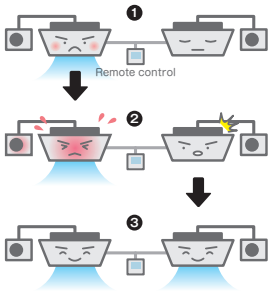


Capacity backup control

Comfort　Energy saving　Longer unit life

Maintains users' comfort!

When the control system detects either of two units is operating with overload, the other unit cover the capacity.

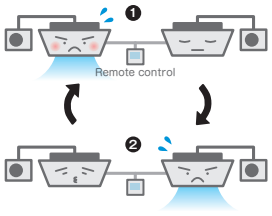


Rotational operation control NEW

Longer unit life　Energy saving

Energy saving and longer life!

By operating two indoor units alternately, their chronological changes are equalized. (The alternate operation cycle can be specified in a range from 1 to 999 hours in increments of 1 hours.)



Additional functions of External Input / Output

The external input/output of indoor unit by remote controller can set input/output based on user's demand.

Remote surveillance system

Card key on-off

External Input

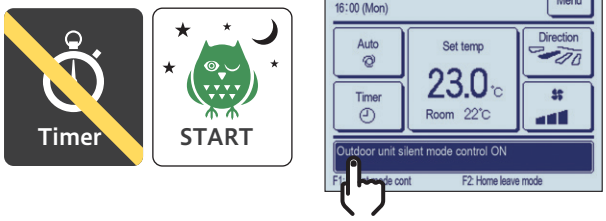
CNT (1-6) CNTA (1-2)	
Input	On/Off Permission/Prohibition Cooling/Heating Emergency Stop
Newly added	Set temp. shift Forced thermo-off IU operation stop Silent mode

External Output

CNT (New)		
2	Output	- Operation - Heating - Compressor ON (thermo-ON)
3	Output	- Inspection
4	Output	- Cooling (defrosting) - Fan operation - Fan operation with Phi or Hi - Fan operation with Me or Lo - Defrosting (oil return in heating operation) - Ventilation - Heater ON - Free cooling - IU overload alarm
5	Output	
Newly added		

Silent mode control

The Outdoor unit is controlled prioritising quiet operation. Silent mode control must be set to the F1 or F2 switch. User can start/stop the silent mode control with a single tap of a button.

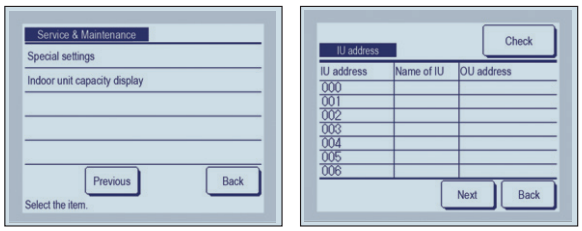


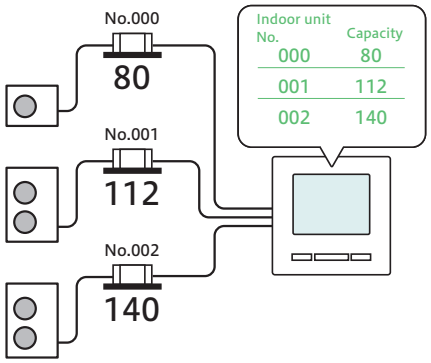
Language Switching NEW

User can select from the following languages and also switch them on the top display.

Indoor unit capacity display

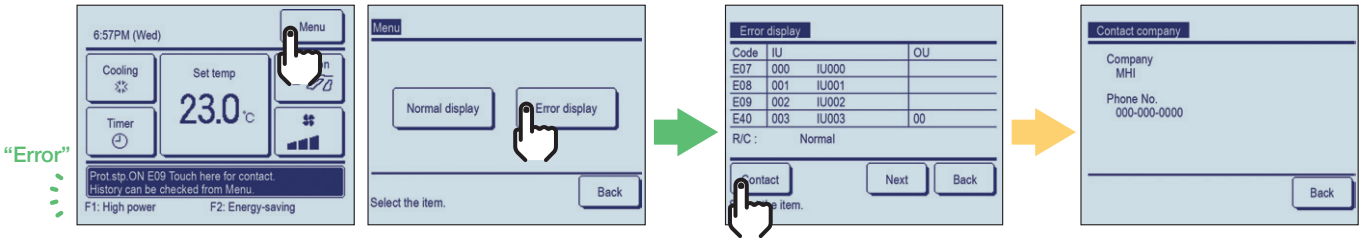
Capacities of Indoor units connected to the RC-EX3A are displayed.





Contact company & Error display

If any error occurs on the air conditioner, the “Unit protection stop” is indicated on the message display.



Wireless Kit & Wireless Remote Controller

Line-up

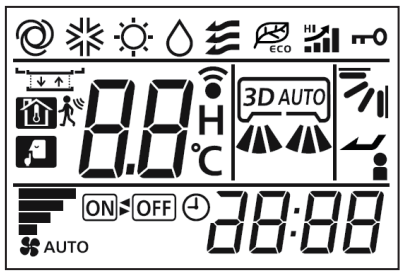
Model	Wireless kit
FDT	RCN-T-5AW-E2
FDTC	RCN-TC-5AW-E2
FDTW	RCN-TW-E2
FDTS	RCN-TS-E2
FDK	RCN-K-E2, RCN-K71-E2
FDE	RCN-E-E3
FDFW	RCN-FW-E2
FDTQ, FDU,FDUM, FDUT, FDUH, FDFL, FDFU, FDU-F	RCN-KIT4-E2

Function added

1) High power
2) Energy-saving
3) ON/OFF Timer by clock
4) Child lock
5) Silent mode control for Outdoor unit
6) Home leave mode

The functions and the operations will be improved.

Display



Outdoor units

Micro KXZ Heat pump systems

4, 5, 6HP (12.1kW~15.5kW)

NEW

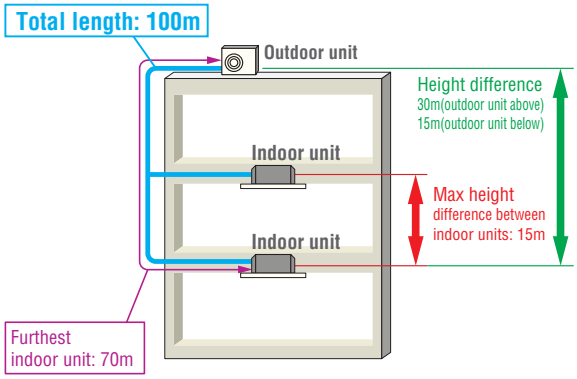
Model No.	Nominal Cooling Capacity
FDC121KXZEN1	12.1kW (220V)
FDC140KXZEN1	14.0kW (220V)
FDC155KXZEN1	15.5kW (220V)
FDC121KXZES1	12.1kW (380V)
FDC140KXZES1	14.0kW (380V)
FDC155KXZES1	15.5kW (380V)

(4HP)

Blue Fin

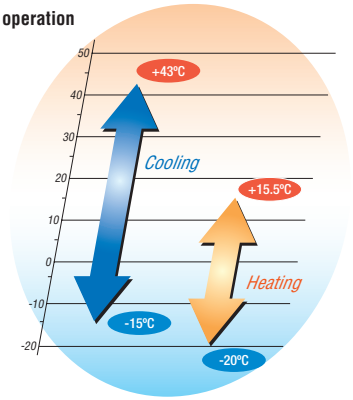
- Connect up to 10* indoor units/up to 150% capacity.
- High efficiency with COP (in cooling) up to 3.82.
- These units employs DC inverter compressors ONLY.
- Industry leading total piping length up to 100m and a maximum pipe run of 70m.

*When connecting 9 units or more, set the total capacity as follows : 5HP : 110% or less, 6HP : 100% or less.



* The total length of ø9.52mm(3/8") liquid piping must be 50m or less

Range of operation



Specifications

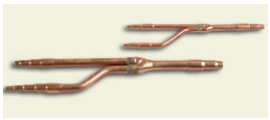
Item			Model	FDC121KXZEN1	FDC140KXZEN1	FDC155KXZEN1	FDC121KXZES1	FDC140KXZES1	FDC155KXZES1
Nominal horse power				4HP	5HP	6HP	4HP	5HP	6HP
Power source				1 Phase 220-240V, 50Hz			3 Phase 380-415V, 50Hz		
Starting current			A	5					
Max current			A	28			13.5		
Nominal capacity	Cooling		kW	12.1	14.0	15.5	12.1	14.0	15.5
	Heating			12.1	14.0	15.5	12.1	14.0	15.5
Electrical characteristics	Power consumption	Cooling	kW	3.16	3.96	5.20	3.16	3.96	5.20
		Heating		3.09	3.66	4.28	3.09	3.66	4.28
Exterior dimensions	HxWxD		mm	845x970x370					
Net weight			kg	85			87		
Sound pressure level	Cooling/Heating		dB(A)	53/56	53/57	54/57	53/56	53/57	54/57
Refrigerant	Type / GWP			R410A / 2088					
	Charge		kg/TCO2Eq	5.0 / 10.44					
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")					
	Gas line			ø15.88(5/8")					
Capacity connection			%	80~150					
Number of connectable indoor units				8	10 *	10 *	8	10 *	10 *

1. The data are measured under the following conditions(ISO-T1, H1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.

Refrigerant piping

Outdoor unit (HP)		4	5	6
Gas pipe	Furthest indoor unit =<70m	ø15.88		
Liquid pipe		ø9.52		

Branch pipes



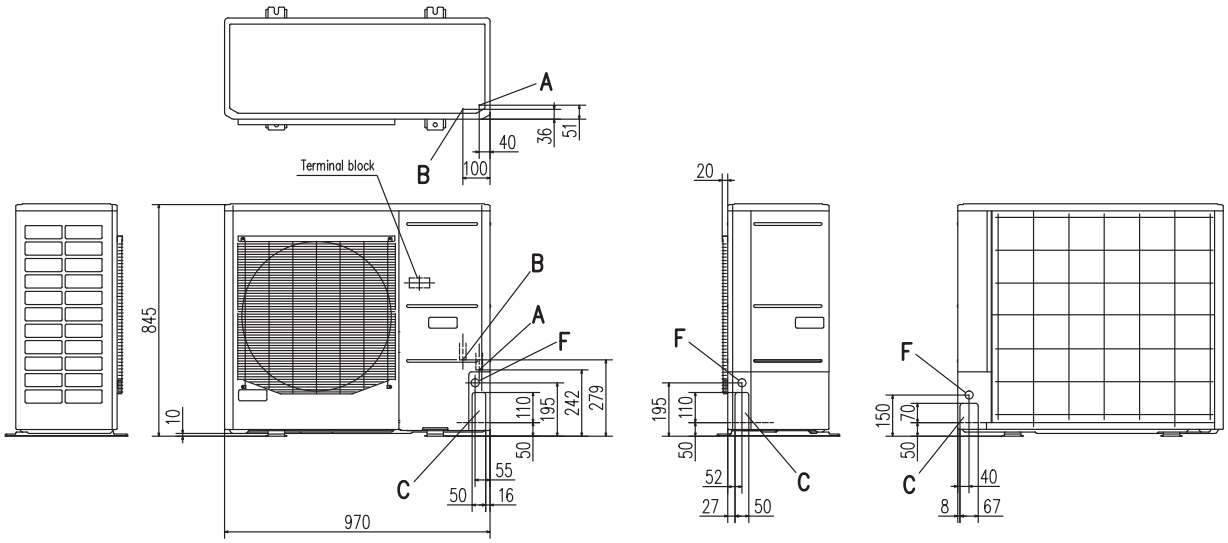
DIS-22-1G
DIS-180-1G

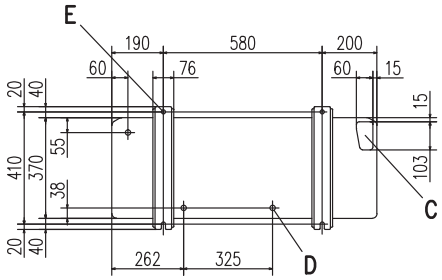
Header pipe

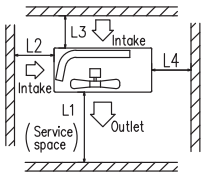
HEAD4-22-1G
HEAD6-180-1G

Dimensions

All measurements in mm.







Minimum installation space

	I	II	III
L_1	Open	Open	500
L_2	300	5	Open
L_3	150	300	150
L_4	5	5	5

Mark	Content	
A	Service valve connection (gas side)	ø15.88 (5/8") (Flare)
B	Service valve connection (liquid side)	ø9.52 (3/8") (Flare)
C	Pipe/cable draw-out hole	
D	Drain discharge hole	ø20 x 3 places
E	Anchor bolt hole	M10 x 4 places
F	Cable draw-out hole	ø30 x 3 places

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 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front panel.

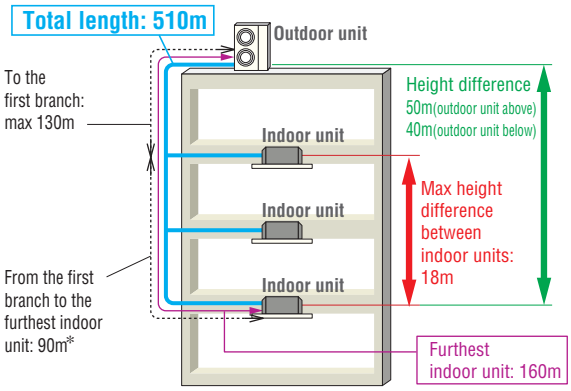
Micro KXZ Heat pump systems

8, 10HP (22.4kW·28.0kW)

Model No.	Nominal Cooling Capacity
FDC224KXZME1	22.4kW
FDC280KXZME1	28.0kW

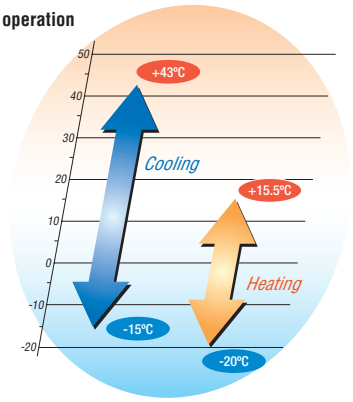
NEW

- Connect up to 24 indoor units/up to 150% capacity.
- High efficiency with COP (in cooling) up to 4.0.
- These units employ DC inverter compressors ONLY.
- Industry leading total piping length up to 510m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.

Range of operation



Specifications

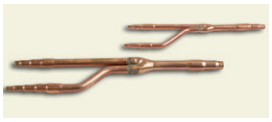
Item			Model	FDC224KXZME1	FDC280KXZME1
Nominal horse power				8HP	10HP
Power source				3 Phase 380-415V, 50Hz	
Starting current			A	5	
Max current			A	20	
Nominal capacity	Cooling		kW	22.4	28.0
	Heating			22.4	28.0
Electrical characteristics	Power consumption	Cooling	kW	5.59	7.90
		Heating		4.97	6.53
Exterior dimensions	HxWxD		mm	1675x1080x480	
Net weight			kg	221	
Sound pressure level	Cooling/Heating		dB(A)	58/59	60/60
Refrigerant	Type / GWP			R410A / 2088	
	Charge		kg/TCO2Eq	11.5 / 24.012	
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")	
	Gas line			ø19.05(3/4")	ø22.22(7/8")
Capacity connection			%	50~150	
Number of connectable indoor units				22	24

1. The data are measured under the following conditions(ISO-T1, H1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

Refrigerant piping

Outdoor unit (HP)		8	10
Gas pipe	Furthest indoor unit =<90m	ø19.05	ø22.22
Liquid pipe		ø9.52	
Gas pipe	90m =<Furthest indoor unit	ø22.22	ø25.4(ø22.22)
Liquid pipe		ø12.7	

Branch pipes



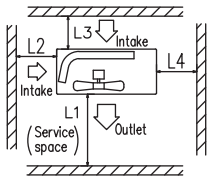
DIS-22-1G
DIS-180-1G

Header pipe

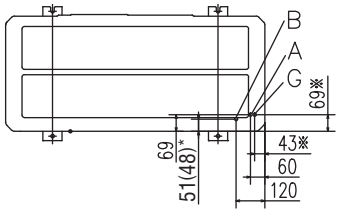
HEAD4-22-1G
HEAD6-180-1G

Dimensions

All measurements in mm.

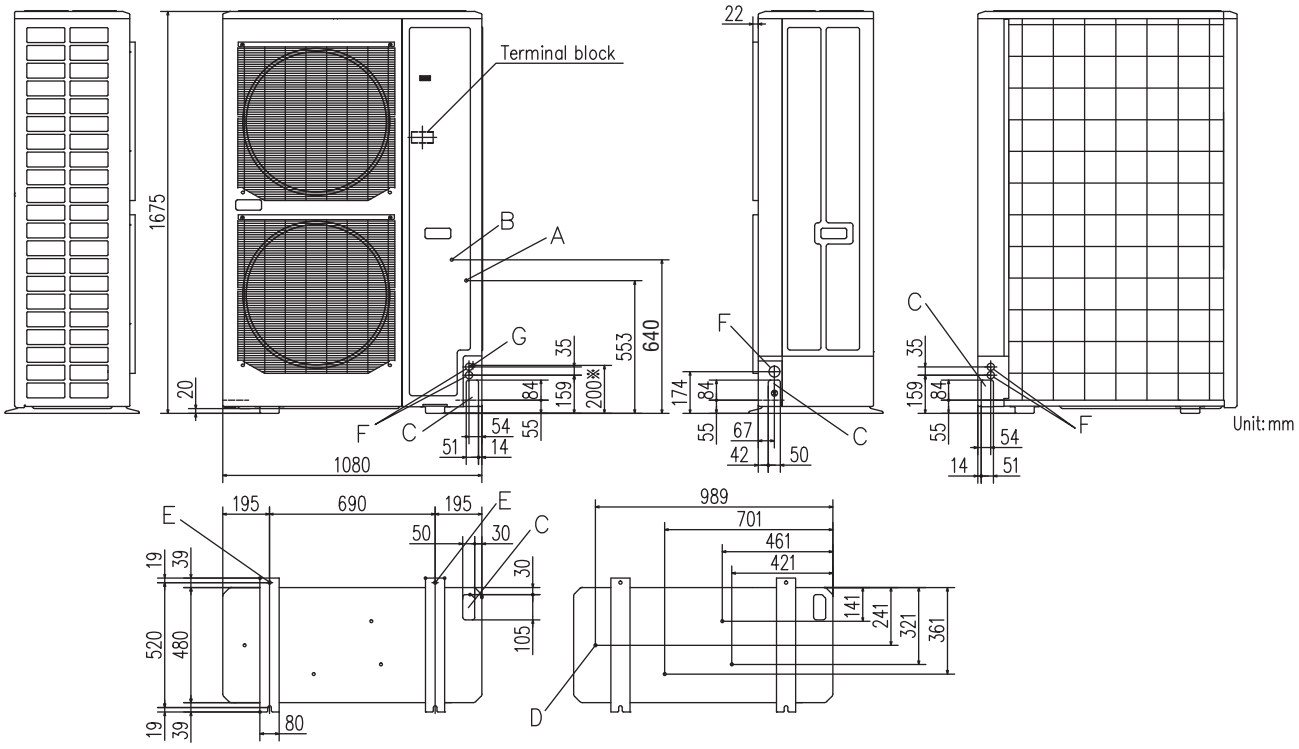


Minimum installation space



	I	II	III
L_1	Open	Open	1500(500)*1
L_2	300	5	Open
L_3	300	300	300
L_4	250(5)*2	250(5)*2	250(5)*2

Notes:
*1 Figure in ( ) shows the value applicable when the flex flow adaptor is installed.
*2 Under the setting condition as specified in ( ), it is necessary to secure 250 mm for the dimension L4 when replacing the compressor. Establish this for example by moving the unit during the work.



Mark	Content	224	280
A	Service valve connection of the attached connecting pipe (gas side)	ø19.05 (3/4") (Flare)	ø19.05 (3/4") (Flare)
B	Service valve connection (liquid side)	ø9.52 (3/8") (Flare)	ø9.52 (3/8") (Flare)
C	Pipe/cable draw-out hole	4places	4places
D	Drain discharge hole	ø20 x 4places	ø20 x 4places
E	Anchor bolt hole	M10 x 4places	M10 x 4places
F	Cable draw-out hole	ø30 x 2places (front) ø45 (side) ø30 x 2places (back)	ø30 x 2places (front) ø45 (side) ø30 x 2places (back)
G	Connecting position of the local pipe. (gas side)	ø19.05 (3/4")(Brazing)	ø22.22 (7/8")(Brazing)

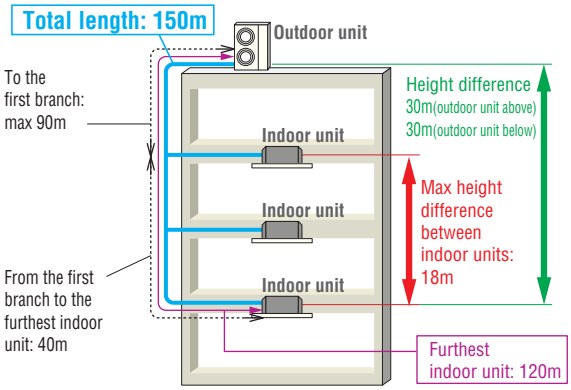
Notes:
(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
(3) Where the unit is subject to strong winds, the blower outlet shoud face perpendicularly to the dominant wind direction.
(4) Leave a 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front.
(7) Connect the Service valve with local pipe by using the pipe of the attachment.(Gas side only)
(8) Mark ※ shows the connecting position of the local pipe.(Gas side only)

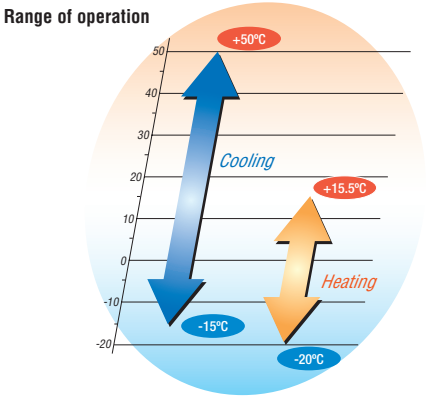
KXZ Lite Heat pump systems
8, 10HP (22.4kW · 28.0kW)

Model No.	Nominal Cooling Capacity
FDC224KXZPE1	22.4kW
FDC280KXZPE1	28.0kW

Blue Fin

- Connect up to 8 indoor units/up to 120% capacity.
- High efficiency with COP (in cooling) up to 4.0.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- KXZ Lite extends a cooling range operation up to 50ºC.
- External static pressure is available up to 35 Pa.
- Tropical usage mode.





Specifications

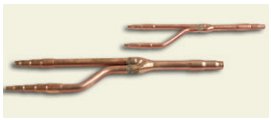
Item			Model	FDC224KXZPE1	FDC280KXZPE1
Nominal horse power				8HP	10HP
Power source				3 Phase 380-415V, 50Hz	
Starting current			A	5	
Max current			A	21	22
Nominal capacity	Cooling		kW	22.4	28.0
	Heating			22.4	28.0
Electrical characteristics	Power consumption	Cooling	kW	5.6	7.87
		Heating		4.8	6.47
Exterior dimensions	HxWxD		mm	1505x970x370	
Net weight			kg	165	
Sound pressure level	Cooling/Heating		dB(A)	59/60	60/63
Refrigerant	Type / GWP			R410A / 2088	
	Charge		kg/TCO2Eq	8.9 / 18.583	
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")	
	Gas line			ø19.05(3/4")	ø22.22(7/8")
Capacity connection			%	50~120	
Number of connectable indoor units				8	8

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.

Refrigerant piping

Outdoor unit (HP)		8	10
Gas pipe	Furthest indoor unit =<90m	ø19.05	ø22.22
Liquid pipe		ø9.52	
Gas pipe	90m =<Furthest indoor unit	ø22.22	ø25.4/ø28.58
Liquid pipe		ø9.52	

Branch pipes



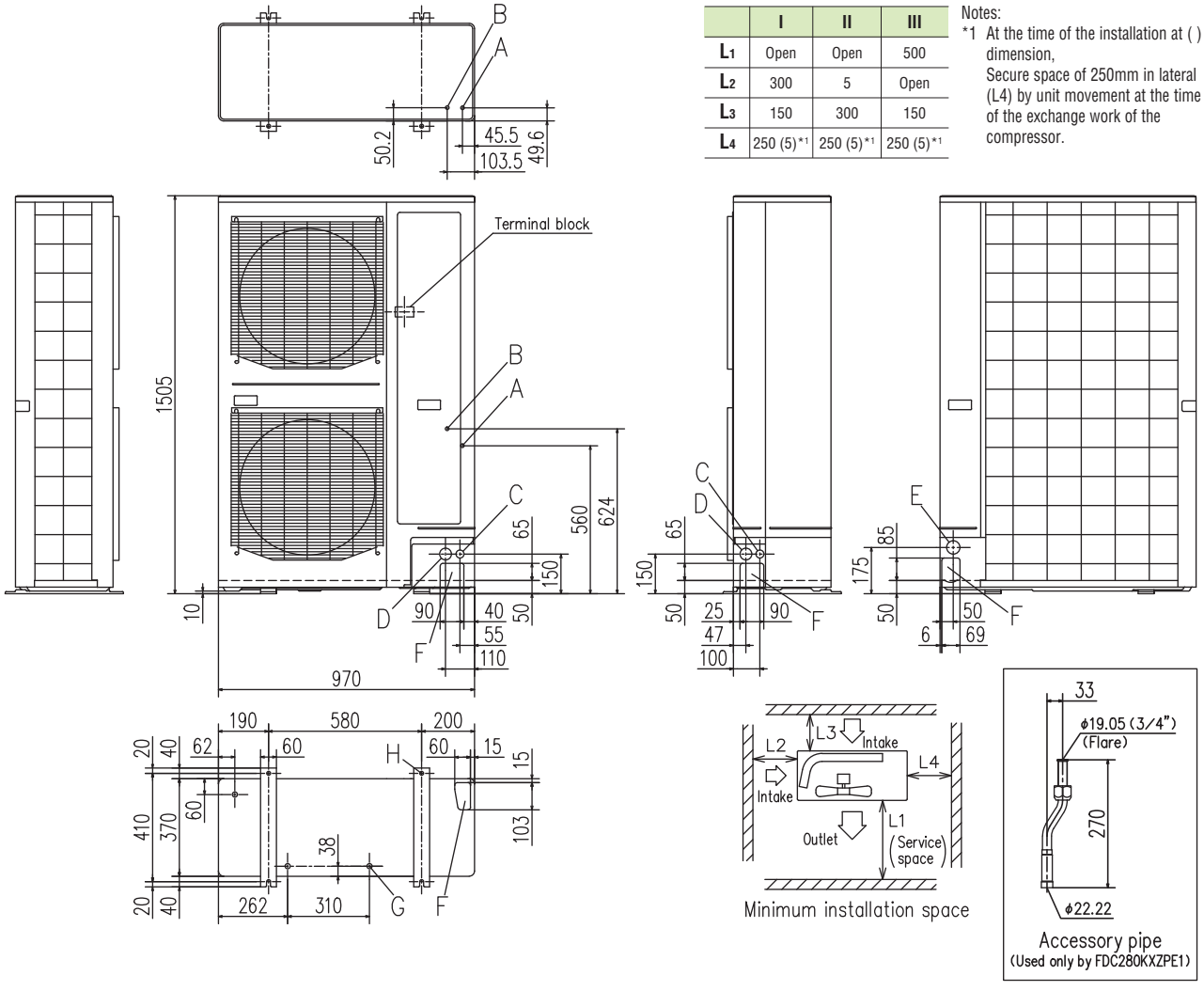
DIS-22-1G
DIS-180-1G

Header pipe

HEAD4-22-1G
HEAD6-180-1G

Dimensions

All measurements in mm.



	I	II	III
L_1	Open	Open	500
L_2	300	5	Open
L_3	150	300	150
L_4	250 (5)*1	250 (5)*1	250 (5)*1

Notes:
*1 At the time of the installation at ( ) dimension,
Secure space of 250mm in lateral (L4) by unit movement at the time of the exchange work of the compressor.

Minimum installation space

Accessory pipe
(Used only by FDC280KXZPE1)

Mark	Content	
A	Service valve connection of the attached connecting pipe (gas side)	ø19.05 (3/4") (Flare)
B	Service valve connection (liquid side)	ø9.52 (3/8") (Flare)
C	Cable draw-out hole (front · side)	ø30 x 2places
D	Cable draw-out hole (front · side)	ø45 x 2places
E	Cable draw-out hole (back)	ø50
F	Pipe/cable draw-out hole	4places
G	Drain discharge hole	ø20 x 3places
H	Anchor bolt hole	M10 x 4places

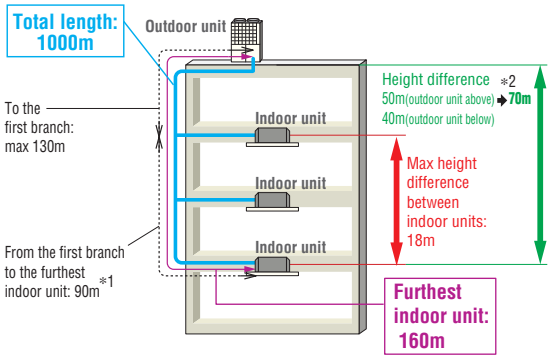
Notes:
(1) It must not be surrounded by walls on the four sides.
(2) The unit must be fixed with anchor bolts.
An anchor bolt must not protrude more than 15mm.
(3) Where the unit is subject to strong winds, lay it in such a direction that the blower outlet faces perpendicularly to the dominant wind direction.
(4) Leave 1m or more space above the unit.
(5) A wall in front of the blower outlet must not exceed the units height.
(6) The model name label is attached on the lower right corner of the front panel.
(7) Connect the Service valve with local pipe by using the pipe of the attachment. (Gas side only) (Accessory pipe is used only by FDC280KXZPE1)
(8) Regarding attaching the pipe of accessories, refer to an attached installation manual.

KXZ Heat pump systems
10, 12HP (28.0kW, 33.5kW)

Model No.	Nominal Cooling Capacity
FDC280KXZE1	28.0kW
FDC335KXZE1	33.5kW

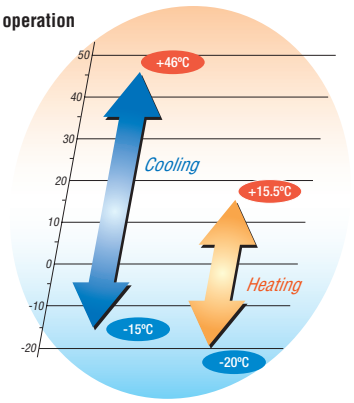
Uniform footprint of models (10,12HP) allows continuous side-by-side installation

- Connect up to 29 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.9.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



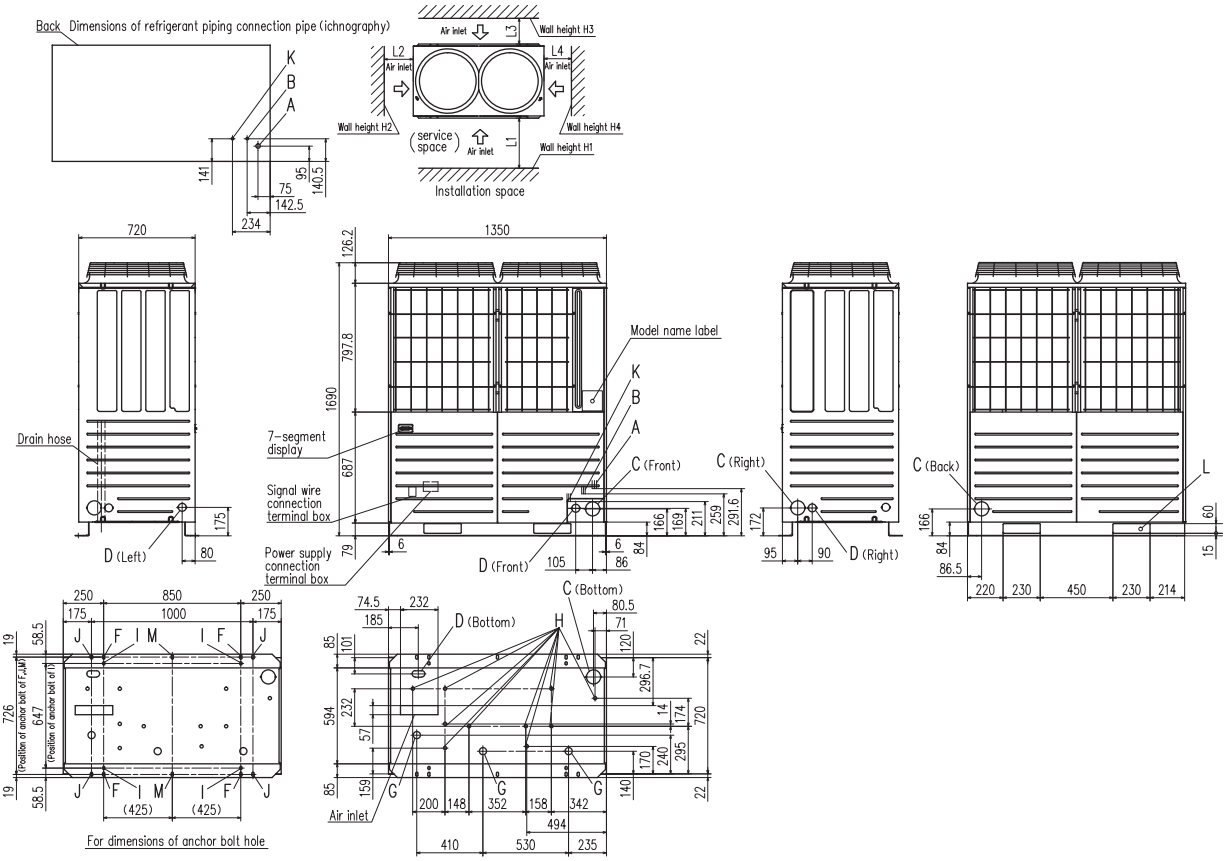
Specifications

Item			Model	FDC280KXZE1	FDC335KXZE1
Nominal horse power				10HP	12HP
Power source				3 Phase 380-415V, 50Hz	
Starting current			A	5	
Max current			A	21.2	
Nominal capacity	Cooling		kW	28.0	33.5
	Heating			31.5	37.5
Electrical characteristics	Power consumption	Cooling	kW	7.24	8.96
		Heating		7.28	9.04
Exterior dimensions	HxWxD		mm	1690x1350x720	
Net weight			kg	272	
Sound pressure level	Cooling/Heating		dB(A)	55/57	61/58
Refrigerant	Type / GWP			R410A / 2088	
	Charge		kg/TCO2Eq	11.0 / 22.968	
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")	ø12.7(1/2")
	Gas line			ø22.22(7/8")	ø25.4(1") [ø22.22(7/8")]
Capacity connection			%	50~130	
Number of connectable indoor units				24	29

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

Dimensions

All measurements in mm.

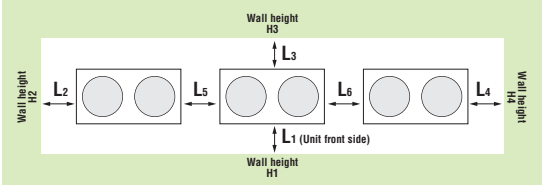


Mark	Content	280	335
A	Refrigerant gas piping connection pipe	ø22.22(Brazing)	ø25.4(Brazing)
B	Refrigerant liquid piping connection pipe	ø9.52(Flare)	ø12.7(Flare)
C	Refrigerant piping exit hole	ø88(or ø100)	
D	Power supply entry hole	ø50 (right · left · front), long hole 40 x 80 (bottom)	
F	Anchor bolt hole	M10 x 4 places	
G	Drain waste water hose hole	ø45 x 3 places	
H	Drain hole	ø20 x 10 places	
K	Refrigerant oil equalization piping connection pipe	ø9.52(Flare)	
L	Carrying in or hole for hanging	230 x 60	

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

When more than one unit is installed



Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	200
L_3	100	300
L_4	10(30)	Open
L_5	10(30)	400
L_6	10(30)	400
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

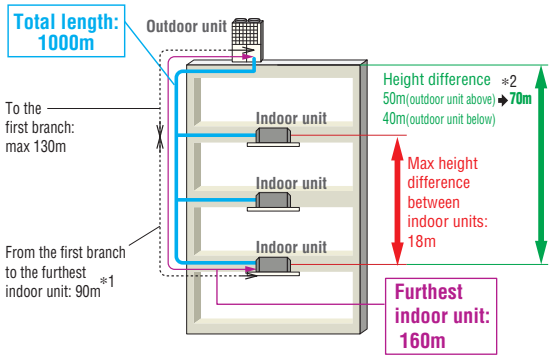
() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

KXZ Heat pump systems
14, 16, 17, 18, 20HP (40.0kW~56.0kW)

Model No.	Nominal Cooling Capacity
FDC400KXZE1	40.0kW
FDC450KXZE1	45.0kW
FDC475KXZE1	47.5kW
FDC500KXZE1	50.0kW
FDC560KXZE1	56.0kW

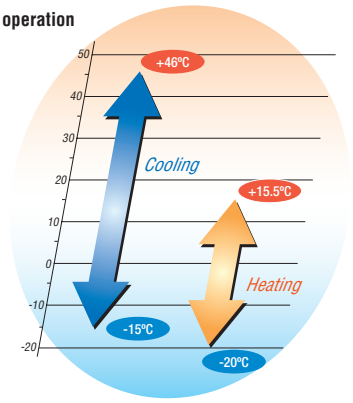
- Connect up to 48 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.6.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

Uniform footprint of all models (from 14HP~20HP) allows continuous side-by-side installation



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



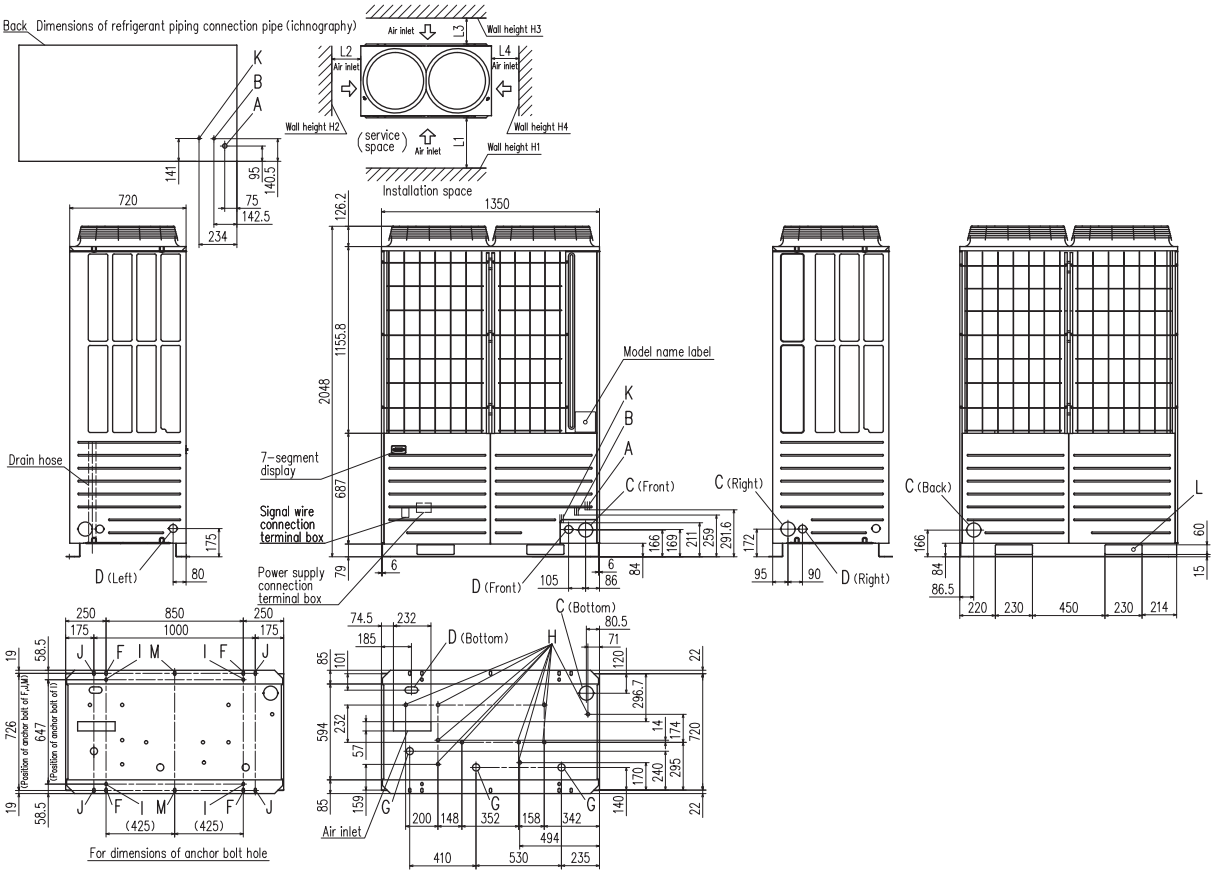
Specifications

Item			Model	FDC400KXZE1	FDC450KXZE1	FDC475KXZE1	FDC500KXZE1	FDC560KXZE1
Nominal horse power				14HP	16HP	17HP	18HP	20HP
Power source				3 Phase 380-415V, 50Hz				
Starting current			A	5		8		
Max current			A	32		42.4		
Nominal capacity	Cooling		kW	40.0	45.0	47.5	50.0	56.0
	Heating			45.0	50.0	53.0	56.0	63.0
Electrical characteristics	Power consumption	Cooling	kW	10.96	13.98	13.98	13.97	16.62
		Heating		10.69	12.50	13.00	13.49	15.95
Exterior dimensions	HxWxD		mm	2048x1350x720				
Net weight			kg	317		370		
Sound pressure level	Cooling/Heating		dB(A)	60/62	61/62	61/61	61/62	64/66
Refrigerant	Type / GWP			R410A / 2088				
	Charge		kg/TCO2Eq	11.5 / 24.012				
Refrigerant piping size	Liquid line		mm(in)	ø12.7(1/2")				
	Gas line			ø25.4(1") [ø28.58(1 1/8")]	ø28.58(1 1/8")			
Capacity connection			%	50~130				
Number of connectable indoor units				34	39	41	43	48

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

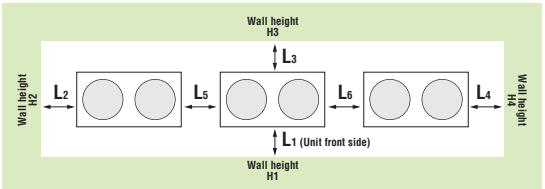
Dimensions

All measurements in mm.



Mark	Content	400	450, 475, 500, 560
A	Refrigerant gas piping connection pipe	ø25.4(Brazing)	ø28.58(Brazing)
B	Refrigerant liquid piping connection pipe	ø12.7(Flare)	
C	Refrigerant piping exit hole	ø88(or ø100)	
D	Power supply entry hole	ø50 (right · left · front), long hole 40 x 80 (bottom)	
F	Anchor bolt hole	M10 x 4 places	
G	Drain waste water hose hole	ø45 x 3 places	
H	Drain hole	ø20 x 10 places	
K	Refrigerant oil equalization piping connection pipe	ø9.52(Flare)	
L	Carrying in or hole for hanging	230 x 60	

When more than one unit is installed



Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	200
L_3	100	300
L_4	10(30)	Open
L_5	10(30)	400
L_6	10(30)	400
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

KXZ Heat pump combination systems 22, 24HP (61.5kW, 67.0kW)

Model No.

FDC615KXZE1 (FDC280+FDC335)

FDC670KXZE1 (FDC335+FDC335)

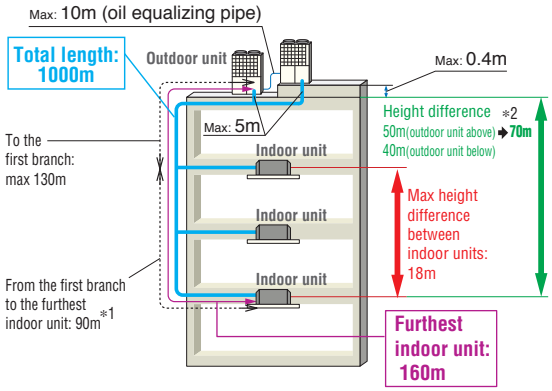
Nominal Cooling Capacity

61.5kW

67.0kW

- Connect up to 58 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.8.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

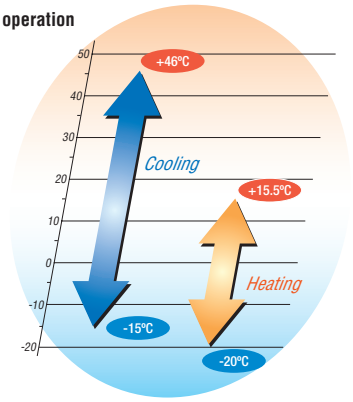
Uniform footprint of all models (from 22HP, 24HP) allows continuous side-by-side installation



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



Specifications

Exterior dimension : Please refer to page37.

Item			Model	FDC615KXZE1	FDC670KXZE1
Combination (FDC)				280KXZE1	335KXZE1
				335KXZE1	335KXZE1
Nominal horse power				22HP	24HP
Power source				3 Phase 380-415V, 50Hz	
Starting current			A	10	
Max current			A	42.4	
Nominal capacity	Cooling		kW	61.5	67.0
	Heating			69.0	75.0
Electrical characteristics	Power consumption	Cooling	kW	16.20	17.92
		Heating		16.32	18.08
Exterior dimensions	HxWxD		mm	1690x2700x720	
Net weight			kg	544	
Refrigerant charge	R410A		kg	11.0x2	
Refrigerant piping size	Liquid line		mm(in)	ø12.7(1/2")	
	Gas line			ø28.58(1 1/8")	
Capacity connection			%	50~130	
Number of connectable indoor units				53	58

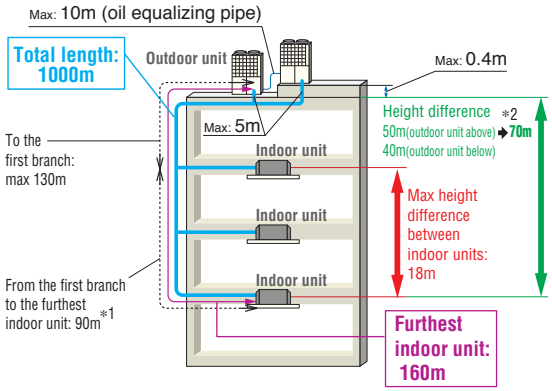
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

KXZ Heat pump combination systems
26, 28, 30, 32, 34, 36, 38, 40HP (73.5kW~112.0kW)

Model No.	Nominal Cooling Capacity
FDC735KXZE1 (FDC335+FDC400)	73.5kW
FDC800KXZE1 (FDC400+FDC400)	80.0kW
FDC850KXZE1 (FDC400+FDC450)	85.0kW
FDC900KXZE1 (FDC450+FDC450)	90.0kW
FDC950KXZE1 (FDC475+FDC475)	95.0kW
FDC1000KXZE1 (FDC500+FDC500)	100.0kW
FDC1060KXZE1 (FDC500+FDC560)	106.0kW
FDC1120KXZE1 (FDC560+FDC560)	112.0kW

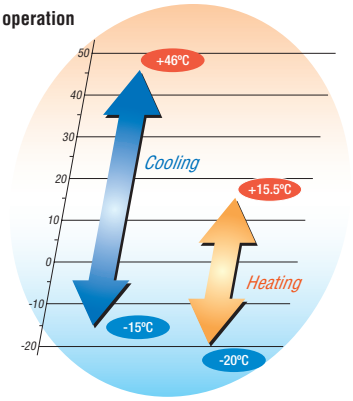
- Connect up to 80 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.7.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

• In case of 26HP



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



Specifications

Exterior dimension : Please refer to page37,39.

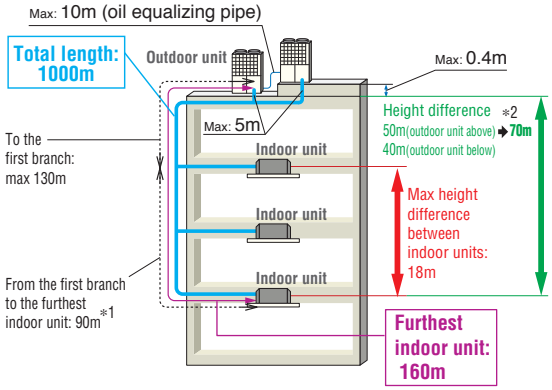
Item			Model	FDC735KXZE1	FDC800KXZE1	FDC850KXZE1	FDC900KXZE1	FDC950KXZE1	FDC1000KXZE1	FDC1060KXZE1	FDC1120KXZE1
Combination (FDC)				335KXZE1	400KXZE1	400KXZE1	450KXZE1	475KXZE1	500KXZE1	500KXZE1	560KXZE1
				400KXZE1	400KXZE1	450KXZE1	450KXZE1	475KXZE1	500KXZE1	560KXZE1	560KXZE1
Nominal horse power				26HP	28HP	30HP	32HP	34HP	36HP	38HP	40HP
Power source				3 Phase 380-415V, 50Hz							
Starting current			A	10				16			
Max current			A	53.2	64			84.8			
Nominal capacity	Cooling		kW	73.5	80.0	85.0	90.0	95.0	100.0	106.0	112.0
	Heating			82.5	90.0	95.0	100.0	106.0	112.0	119.0	126.0
Electrical characteristics	Power consumption	Cooling	kW	19.92	21.92	24.94	27.96	27.96	27.94	30.59	33.24
		Heating		19.73	21.38	23.19	25.00	26.00	26.98	29.44	31.90
Exterior dimensions	HxWxD		mm	2048x2700x720							
Net weight			kg	589	634			740			
Refrigerant charge	R410A		kg	11.0+11.5	11.5x2						
Refrigerant piping size	Liquid line		mm(in)	ø15.88(5/8")						ø19.05(3/4")	
	Gas line			ø31.75(1 1/4") [ø34.92(1 3/8")]						ø38.1(1 1/2") [ø34.92(1 3/8")]	
Capacity connection			%	50~130							
Number of connectable indoor units				63	69	73	78	80			

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat pump combination systems 42, 44, 46, 48HP (120.0kW~135.0kW)

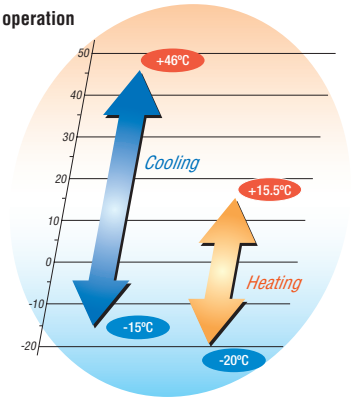
Model No.	Nominal Cooling Capacity
FDC1200KXZE1 (FDC400+FDC400+FDC400)	120.0kW
FDC1250KXZE1 (FDC400+FDC400+FDC450)	125.0kW
FDC1300KXZE1 (FDC400+FDC450+FDC450)	130.0kW
FDC1350KXZE1 (FDC450+FDC450+FDC450)	135.0kW

- Connect up to 80 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.6.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



Specifications

Exterior dimension : Please refer to page39.

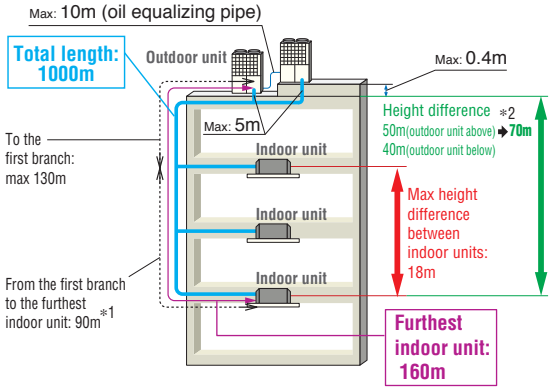
Item			Model	FDC1200KXZE1	FDC1250KXZE1	FDC1300KXZE1	FDC1350KXZE1
Combination (FDC)				400KXZE1	400KXZE1	400KXZE1	450KXZE1
				400KXZE1	400KXZE1	450KXZE1	450KXZE1
				400KXZE1	450KXZE1	450KXZE1	450KXZE1
Nominal horse power				42HP	44HP	46HP	48HP
Power source				3 Phase 380-415V, 50Hz			
Starting current			A	15			
Max current			A	96			
Nominal capacity	Cooling		kW	120.0	125.0	130.0	135.0
	Heating			135.0	140.0	145.0	150.0
Electrical characteristics	Power consumption	Cooling	kW	32.88	35.90	38.92	41.94
		Heating		32.07	33.88	35.69	37.50
Exterior dimensions	HxWxD		mm	2048x4050x720			
Net weight			kg	951			
Refrigerant charge	R410A		kg	11.5x3			
Refrigerant piping size	Liquid line		mm(in)	ø19.05(3/4")			
	Gas line			ø38.1(1 1/2") [ø34.92(1 3/8")]			
Capacity connection			%	50-130			
Number of connectable indoor units				80			

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat pump combination systems
50, 52, 54, 56, 58, 60HP (142.5kW~168.0kW)

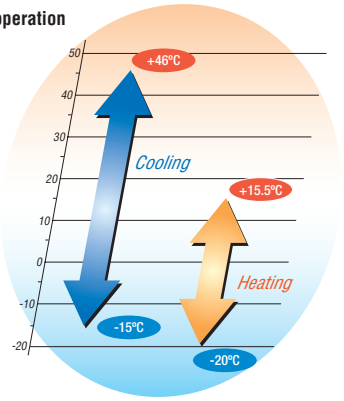
Model No.	Nominal Cooling Capacity
FDC1425KXZE1 (FDC475+FDC475+FDC475)	142.5kW
FDC1450KXZE1 (FDC475+FDC475+FDC500)	145.0kW
FDC1500KXZE1 (FDC500+FDC500+FDC500)	150.0kW
FDC1560KXZE1 (FDC500+FDC500+FDC560)	156.0kW
FDC1620KXZE1 (FDC500+FDC560+FDC560)	162.0kW
FDC1680KXZE1 (FDC560+FDC560+FDC560)	168.0kW

- Connect up to 80 indoor units/up to 130% capacity.
- High efficiency with COP (in cooling) up to 3.6.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



Specifications

Exterior dimension : Please refer to page39.

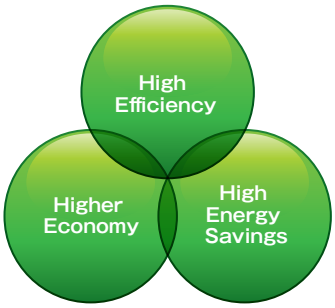
Item			Model	FDC1425KXZE1	FDC1450KXZE1	FDC1500KXZE1	FDC1560KXZE1	FDC1620KXZE1	FDC1680KXZE1
Combination (FDC)				475KXZE1	475KXZE1	500KXZE1	500KXZE1	500KXZE1	560KXZE1
				475KXZE1	475KXZE1	500KXZE1	500KXZE1	560KXZE1	560KXZE1
				475KXZE1	500KXZE1	500KXZE1	560KXZE1	560KXZE1	560KXZE1
Nominal horse power				50HP	52HP	54HP	56HP	58HP	60HP
Power source				3 Phase 380-415V, 50Hz					
Starting current			A	24					
Max current			A	127.2					
Nominal capacity	Cooling		kW	142.5	145.0	150.0	156.0	162.0	168.0
	Heating			159.0	162.0	168.0	175.0	182.0	189.0
Electrical characteristics	Power consumption	Cooling	kW	41.94	41.93	41.91	44.56	47.21	49.86
		Heating		39.00	39.49	40.47	42.93	45.39	47.85
Exterior dimensions	HxWxD		mm	2048x4050x720					
Net weight			kg	1110					
Refrigerant charge	R410A		kg	11.5x3					
Refrigerant piping size	Liquid line		mm(in)	ø19.05(3/4")					
	Gas line			ø38.1(1 1/2") [ø34.92(1 3/8")]					
Capacity connection			%	50-130					
Number of connectable indoor units				80					

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Hi-COP series
8~36HP(22.4kW~100.0kW)

Model No.	Nominal Cooling Capacity
FDC224KXZXE1	22.4kW
FDC280KXZXE1	28.0kW
FDC335KXZXE1	33.5kW

Model No.		Nominal Cooling Capacity
FDC450KXZXE1	(FDC224+FDC224)	45.0kW
FDC500KXZXE1	(FDC224+FDC280)	50.0kW
FDC560KXZXE1	(FDC280+FDC280)	56.0kW
FDC615KXZXE1	(FDC280+FDC335)	61.5kW
FDC670KXZXE1	(FDC335+FDC335)	67.0kW
FDC735KXZXE1	(FDC224+FDC224+FDC280)	73.5kW
FDC800KXZXE1	(FDC224+FDC280+FDC280)	80.0kW
FDC850KXZXE1	(FDC280+FDC280+FDC280)	85.0kW
FDC900KXZXE1	(FDC280+FDC280+FDC335)	90.0kW
FDC950KXZXE1	(FDC280+FDC335+FDC335)	95.0kW
FDC1000KXZXE1	(FDC335+FDC335+FDC335)	100.0kW



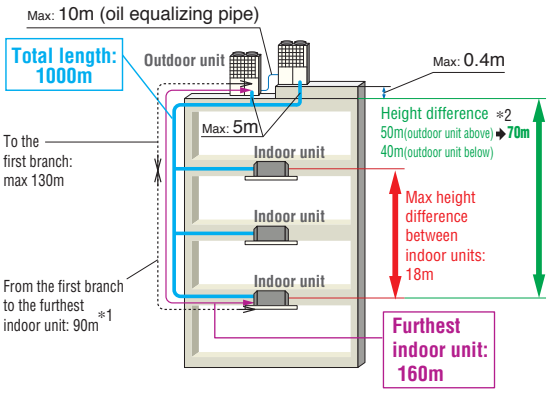
- This series can connect indoor unit capacity up to 160~200%.

kW	capacity connection
22.4~45.0	200%
50.0~100.0	160%

- High efficiency with COP (in cooling) up to 4.5.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

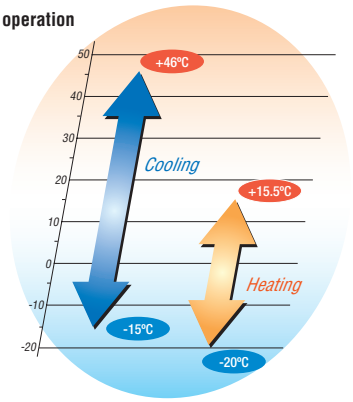
FDC224KXZXE1

FDC280KXZXE1
FDC335KXZXE1



*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)
*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 90m is possible with High Head series.

Range of operation



Specifications

Item			Model	FDC224KXZXE1	FDC280KXZXE1	FDC335KXZXE1
Nominal horse power				8HP	10HP	12HP
Power source				3Phase 380-415V, 50Hz		
Starting current			A	5		
Max current			A	21.2	32	
Nominal capacity	Cooling		kW	22.4	28.0	33.5
	Heating			25.0	31.5	37.5
Electrical characteristics	Power consumption	Cooling	kW	4.98	6.95	8.68
		Heating		5.56	6.83	8.39
Exterior dimensions	H x W x D		mm	1690x1350x720	2048x1350x720	
Net weight			kg	280	325	
Sound pressure level	Cooling / Heating		dB(A)	56/57	56/56	62/57
Refrigerant	Type / GWP			R410A / 2088		
	Charge		kg/TCO2Eq	11.0 / 22.968	11.5 / 24.012	
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")		ø12.7(1/2")
	Gas line			ø19.05(3/4")	ø22.22(7/8")	ø25.4(1")[ø22.22(7/8")]
Capacity connection			%	200		
Number of connectable indoor units				29	37	44

Item			Model	FDC450KXZXE1	FDC500KXZXE1	FDC560KXZXE1	FDC615KXZXE1	FDC670KXZXE1
Combination (FDC)				224KXZXE1	224KXZXE1	280KXZXE1	280KXZXE1	335KXZXE1
				224KXZXE1	280KXZXE1	280KXZXE1	335KXZXE1	335KXZXE1
Nominal horse power				16HP	18HP	20HP	22HP	24HP
Power source				3Phase 380-415V, 50Hz				
Starting current			A	10				
Max current			A	42.4	53.2	64		
Nominal capacity	Cooling		kW	45.0	50.0	56.0	61.5	67.0
	Heating			50.0	56.0	63.0	69.0	75.0
Electrical characteristics	Power consumption	Cooling	kW	10.0	11.8	13.9	15.6	17.4
		Heating		11.1	12.3	13.7	15.2	16.8
Exterior dimensions	H x W x D		mm	1690x2700x720	2048x2700x720			
Net weight			kg	560	605	650	650	650
Refrigerant charge	R410A		kg	11.0x2	11.0+11.5	11.5x2		
Refrigerant piping size	Liquid line		mm(in)	ø12.7(1/2")				
	Gas line			ø28.58(1 1/8")				
	Oil equalization			ø9.52(3/8")				
Capacity connection			%	200	160			
Number of connectable indoor units				60	53	59	65	71

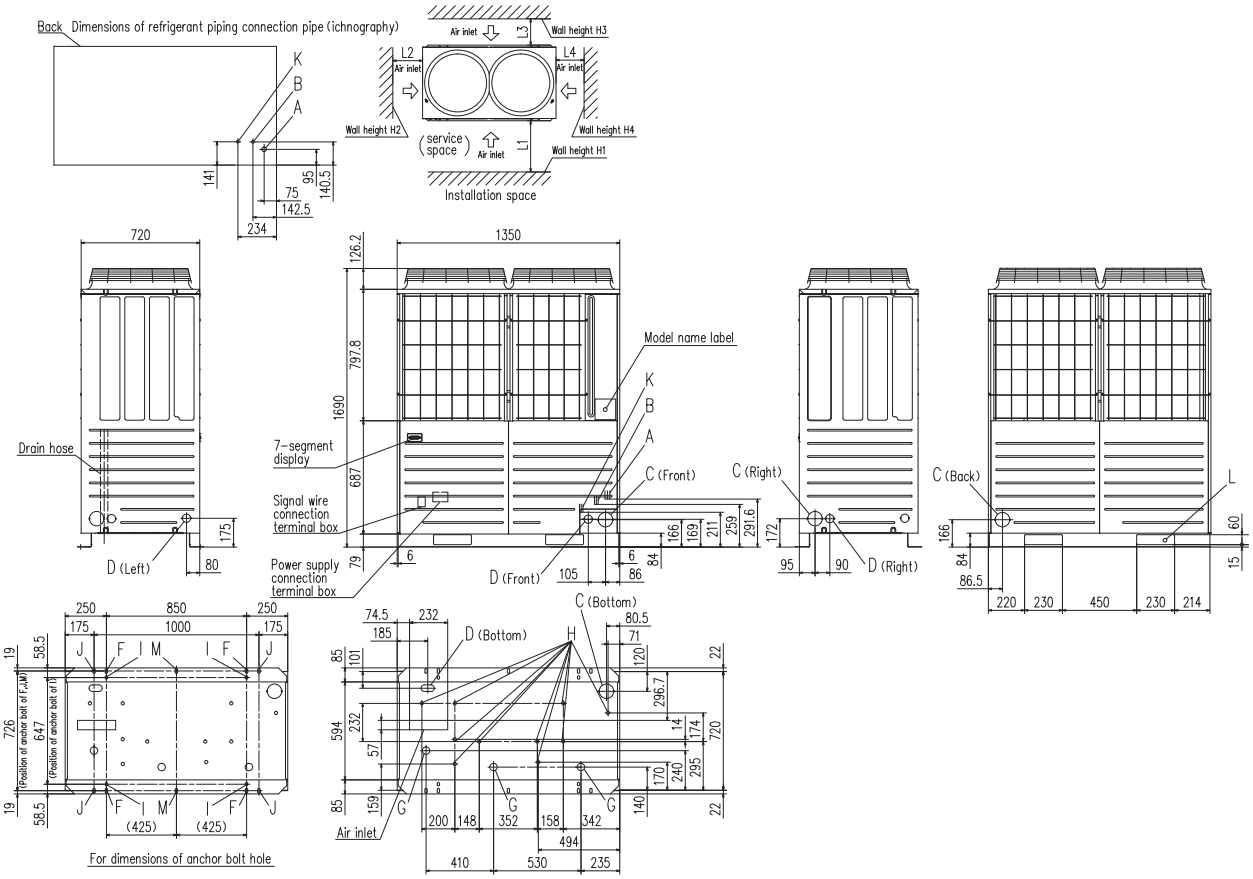
Item			Model	FDC735KXZXE1	FDC800KXZXE1	FDC850KXZXE1	FDC900KXZXE1	FDC950KXZXE1	FDC1000KXZXE1
Combination (FDC)				224KXZXE1	224KXZXE1	280KXZXE1	280KXZXE1	280KXZXE1	335KXZXE1
				224KXZXE1	280KXZXE1	280KXZXE1	280KXZXE1	335KXZXE1	335KXZXE1
				280KXZXE1	280KXZXE1	280KXZXE1	335KXZXE1	335KXZXE1	335KXZXE1
Nominal horse power				26HP	28HP	30HP	32HP	34HP	36HP
Power source				3Phase 380-415V, 50Hz					
Starting current			A	15					
Max current			A	74.4	85.2	96			
Nominal capacity	Cooling		kW	73.5	80.0	85.0	90.0	95.0	100.0
	Heating			82.5	90.0	95.0	100.0	106.0	112.0
Electrical characteristics	Power consumption	Cooling	kW	17.1	19.3	21.1	22.7	24.3	25.9
		Heating		18.2	19.7	20.6	21.9	23.5	25.1
Exterior dimensions	H x W x D		mm	2048x4050x720					
Net weight			kg	885	930	975	975		
Refrigerant charge	R410A		kg	11.0x2+11.5	11.0+11.5x2	11.5x3			
Refrigerant piping size	Liquid line		mm(in)	ø15.88(5/8")					
	Gas line			ø31.75(1 1/4")[ø34.92(1 3/8")]					Ø38.1(1/2")[ø34.92(1 3/8")]
	Oil equalization			ø9.52(3/8")					
Capacity connection			%	160					
Number of connectable indoor units				78	80	80	80	80	80

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

Dimensions

All measurements in mm.

FDC224KXZXE1

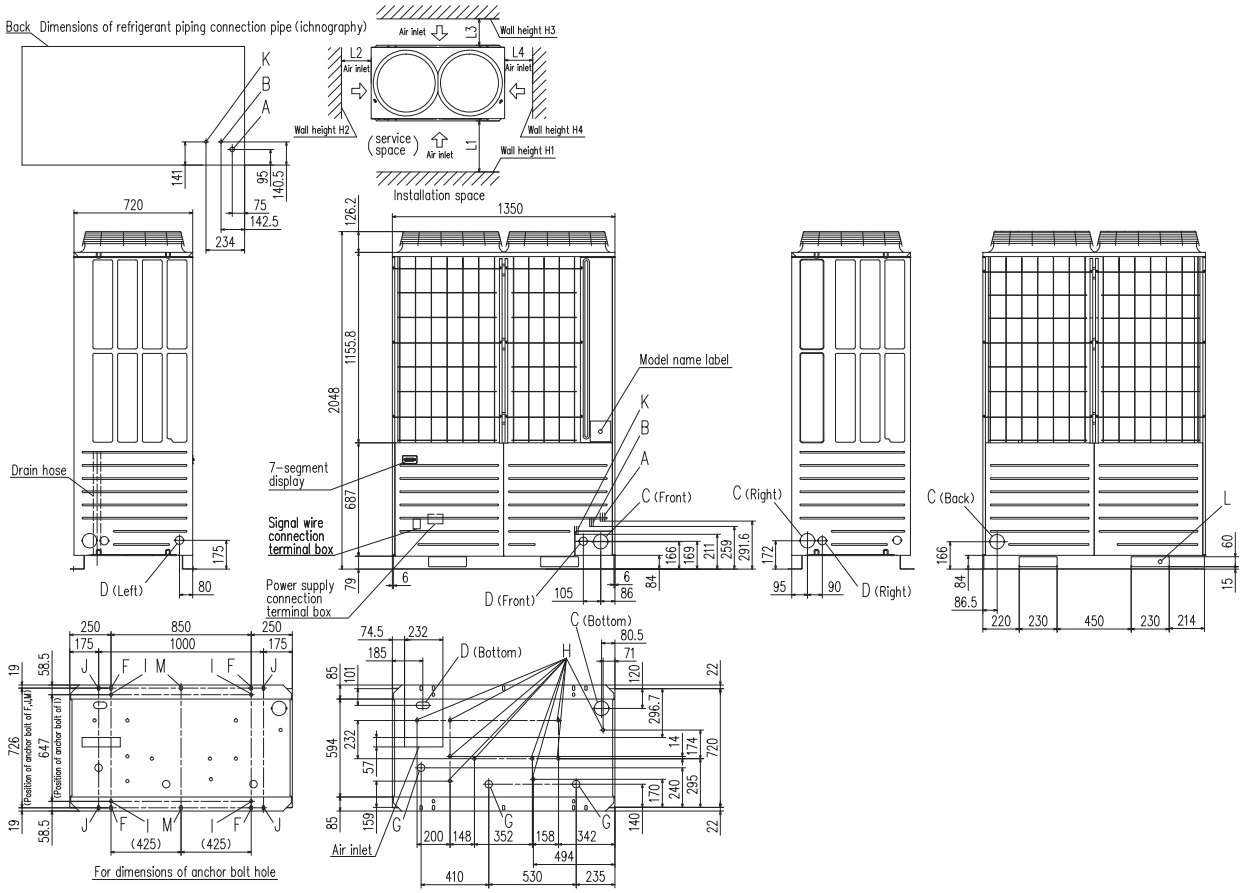


Mark	Content	224
A	Refrigerant gas piping connection pipe	ø19.05 (Brazing)
B	Refrigerant liquid piping connection pipe	ø9.52 (Flare)
C	Refrigerant piping exit hole	ø88 (or ø100)
D	Power supply entry hole	ø50 (Right · Left · Front), Long hole 40 x 80 (Bottom)
F	Anchor bolt hole	M10 x 4 places
G	Drain waste water hose hole	ø45 x 3 places
H	Drain hole	ø20 x 10 places
K	Refrigerant oil equalization piping connection pipe	ø9.52 (Flare)
L	Carrying in or hole for hanging	230 x 60

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

FDC280KXZXE1, 335KXZXE1



Mark	Content	280	335
A	Refrigerant gas piping connection pipe	ø22.22 (Brazing)	ø25.4 (Brazing)
B	Refrigerant liquid piping connection pipe	ø9.52 (Flare)	ø12.7 (Flare)
C	Refrigerant piping exit hole	ø88 (or ø100)	
D	Power supply entry hole	ø50 (Right · Left · Front), Long hole 40 x 80 (Bottom)	
F	Anchor bolt hole	M10 x 4 places	
G	Drain waste water hose hole	ø45 x 3 places	
H	Drain hole	ø20 x 10 places	
K	Refrigerant oil equalization piping connection pipe	ø9.52(Flare)	
L	Carrying in or hole for hanging	230 x 60	

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

KXZ Heat recovery systems - for simultaneous heating and cooling

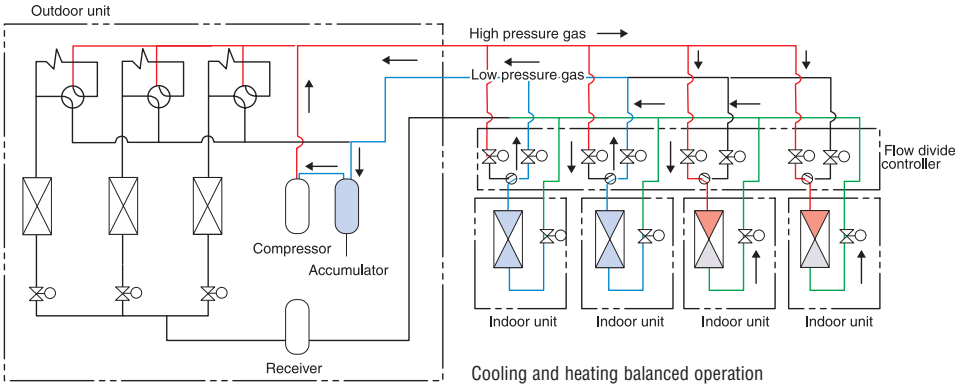
The heat recovery systems operate with 3 inter-connecting pipes, commonly referred to as a '3-pipe system'.

The systems provide both heating and cooling operations to individual indoor units according to the room condition/requirement.
The systems incorporate highly sophisticated control to condition multiple indoor areas, whatever their requirement for cooling or heating, for applications where the building orientation (N, S, E, W) can mean that heat gain/loss varies on each side of the building.

The range starts with a 22.4kW cooling capacity, up to 20HP with 56.0kW cooling capacity. Outdoor units can also be “twinned” or “tripled” providing up to 60HP/168.0kW on a single system.

Heat recovery systems

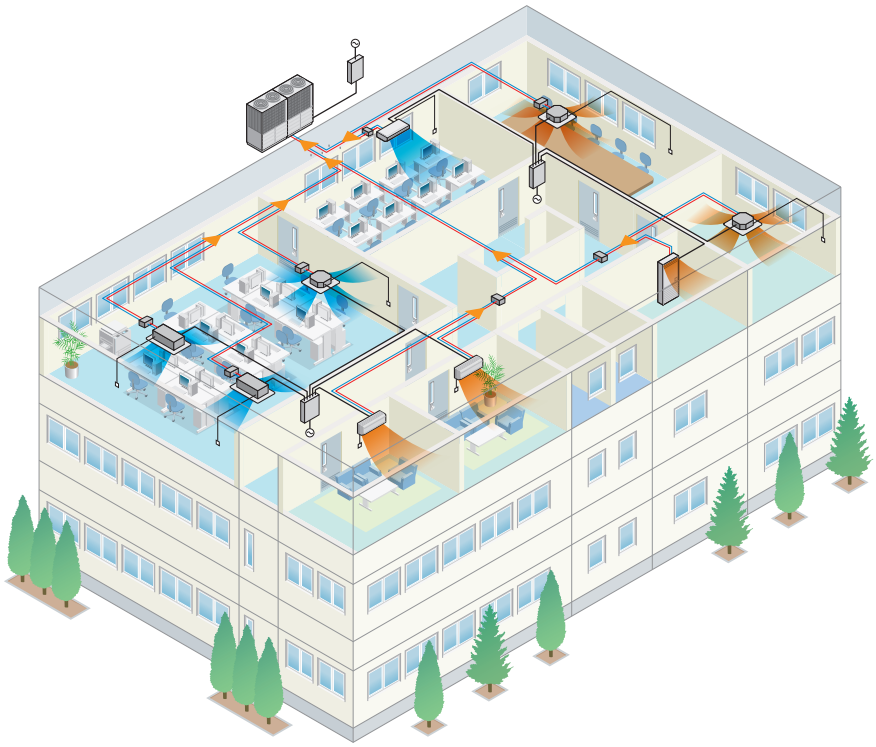
The system interconnecting pipework has a unique arrangement, with two of the interconnecting pipes routed through a PFD Distribution Controller, and the third pipe connected directly to each indoor unit from the main pipe run. This reduces installation time, and the number of brazed connections on site. The PFD Distribution Controllers are available for single connection, or as a combined PFD 4-way connection, with each connected unit having independent cooling or heating operation.



Cooling and heating balanced operation

During defrosting or during automatic protection of a compressor, which is activated every several hours in heating operation, heating operation temporarily stops and restarts after some period. The series has the same automatic protection of compressor in cooling operation also. During this protection period air flow only comes on and cooling operation restarts after some period.

These models are not suitable for year round cooling applications -such as server rooms- especially in areas where the outdoor air temperature goes below 5°C.



New features

- Improved energy efficiency
- Expanded Line-up up to 60HP

Previous Model	NEW KXZRE1
Up to 48HP	Up to 60HP

- Additional Hi-COP combination.
- High efficiency in mixed cooling and heating mode.

Heat recovery systems KXZRE1

22.4kW	28.0kW	33.5kW
8HP	10HP	12HP
FDC224KXZRE1	FDC280KXZRE1	FDC335KXZRE1

40.0kW	45.0kW	47.5kW	50.0kW	56.0kW	61.5kW	67.0kW
14HP	16HP	17HP	18HP	20HP	22HP	24HP
FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC615KXZRE1	FDC670KXZRE1

FDC735

FDC800~1120

73.5kW	80.0kW	85.0kW	90.0kW	95.0kW	100.0kW	106.0kW	112.0kW
26HP	28HP	30HP	32HP	34HP	36HP	38HP	40HP
FDC735KXZRE1	FDC800KXZRE1	FDC850KXZRE1	FDC900KXZRE1	FDC950KXZRE1	FDC1000KXZRE1	FDC1060KXZRE1	FDC1120KXZRE1
FDC335KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1
FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC560KXZRE1

FDC1200~1680

120.0kW	125.0kW	130.0kW	135.0kW	142.5kW	145.0kW	150.0kW	156.0kW	162.0kW	168.0kW
42HP	44HP	46HP	48HP	50HP	52HP	54HP	56HP	58HP	60HP
FDC1200KXZRE1	FDC1250KXZRE1	FDC1300KXZRE1	FDC1350KXZRE1	FDC1425KXZRE1	FDC1450KXZRE1	FDC1500KXZRE1	FDC1560KXZRE1	FDC1620KXZRE1	FDC1680KXZRE1
FDC400KXZRE1	FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1
FDC400KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC560KXZRE1
FDC400KXZRE1	FDC450KXZRE1	FDC450KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC560KXZRE1	FDC560KXZRE1

Heat recovery systems Hi-COP combination KXZRXE1

FDC450~670

45.0kW	50.0kW	56.0kW	61.5kW	67.0kW
16HP	18HP	20HP	22HP	24HP
FDC450KXZRXE1	FDC500KXZRXE1	FDC560KXZRXE1	FDC615KXZRXE1	FDC670KXZRXE1
FDC224KXZRE1	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1
FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1

FDC735~1000

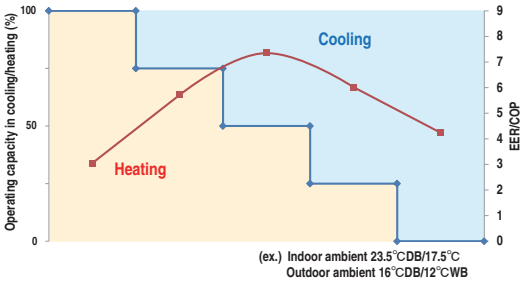
73.5kW	80.0kW	85.0kW	90.0kW	95.0kW	100.0kW
26HP	28HP	30HP	32HP	34HP	36HP
FDC735KXZRXE1	FDC800KXZRXE1	FDC850KXZRXE1	FDC900KXZRXE1	FDC950KXZRXE1	FDC1000KXZRXE1
FDC224KXZRE1	FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1
FDC224KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1
FDC280KXZRE1	FDC280KXZRE1	FDC280KXZRE1	FDC335KXZRE1	FDC335KXZRE1	FDC335KXZRE1

High efficiency in combined cooling and heating mode

Highly efficient operation mode is automatically determined inside the refrigerant system during simultaneous cooling and heating operation.
Heat recovery efficiency is maximized by this control and Max COP 9.0 (*) is achieved during operation with simultaneous cooling and heating.

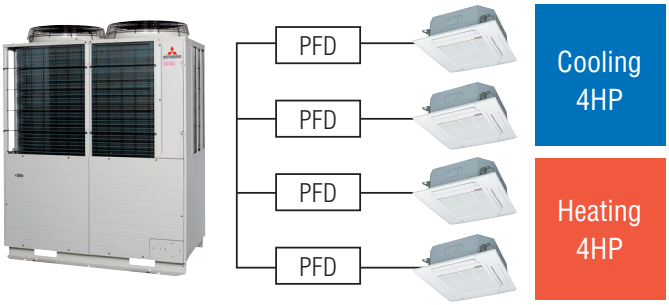
* Conditions for simultaneous cooling and heating (Our estimation in 8HP operation and the following conditions: Temperature outside the room DB16°C/WB12°C, temperature in the cooled room DB27°C/19°C, and temperature in the heated room DB20°C/WB14.5°C)

Energy efficiency in heat recovery mode



Max COP > 9.0

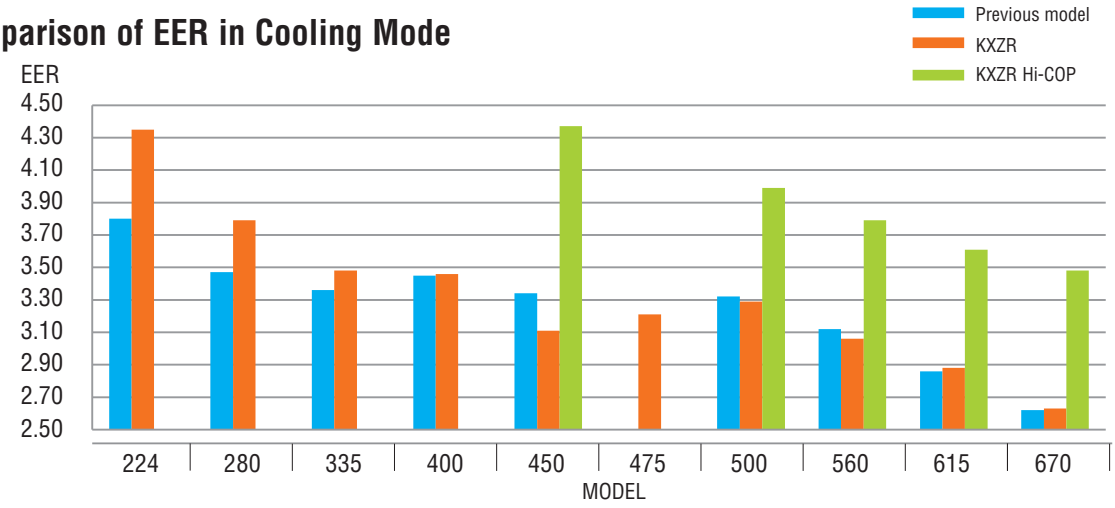
(Condition) FDC224KXZRE1
50% Indoor unit in cooling (27°CDB/19°C)
50% Indoor unit in heating (20°CDB/14.5°C)
Outdoor ambient 16°CDB/12°CWB



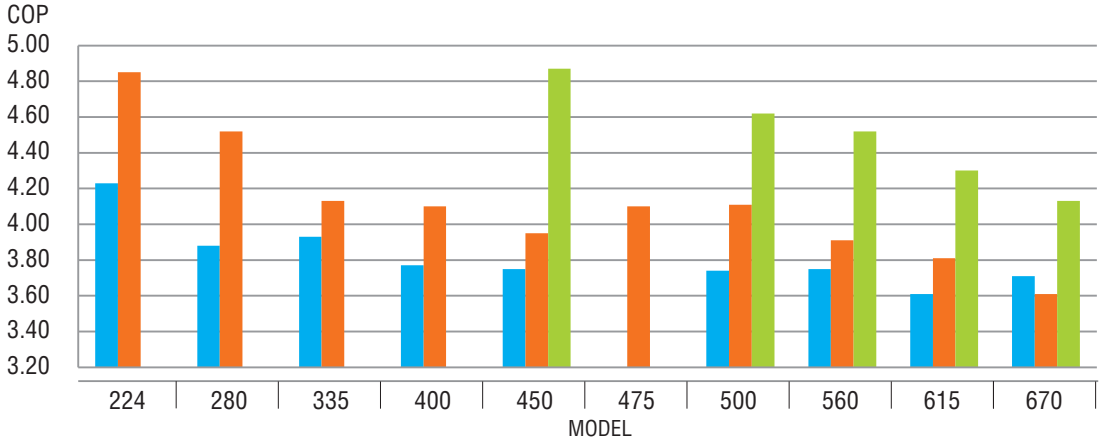
High Efficiency

The below graphs highlight the improved efficiencies between the previous models compared to the KXZR standard and Hi-COP models.

Comparison of EER in Cooling Mode



Comparison of COP in Heating Mode



Improved Features

New Heating Solution - Continuous Heating Capacity Control (CHCC) -

New defrosting control achieves more capacity than that of previous model in low ambient temperature condition.
Target pressure is controlled automatically before capacity drops, which makes longer period of heating operation and shorter defrosting time.
(*1) Patent is now under being applied. (*2) This control will be activated in specific condition. Please refer to the technical manual in detail.

Improved cooling capacity in low ambient temperature

Small split heat exchanger and pressure control make it possible for the outdoor unit to work in cooling operation even with low ambient temperature condition, which achieves more capacity in such low ambient condition at -5℃, compared to previous model.

Two split heat exchanger.

Previous model

Upper/Middle split heat exchanger can achieve more precise pressure control even when low capacity is required.

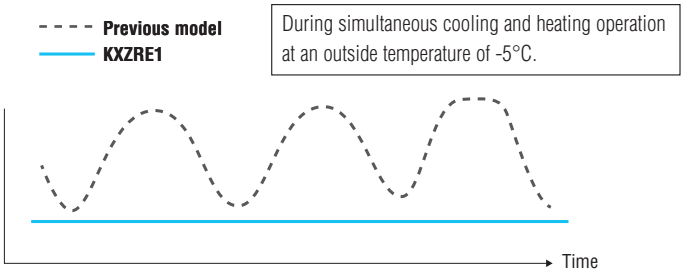
KXZRE1

4 surface heat exchanger make its size smaller.

In previous model, when high demand for heating and low cooling demand are required at the same time in low ambient temperature condition, pressure control is adjusted to keep more heating capacity than good enough cooling capacity.
New adopted heat exchanger and pressure control in KXZR series, has improved its capacity for both good enough heating and cooling capacity at the same time. (*)

(*) Refrigerant system will priorities required heating mode more than very low cooling demand, in case most of indoor units are operated in heating mode.

* The numeric values are provisional.
Blown air temperature in the cooled room



Improvement to the shunt controller noise level

Sound insulation box design specification, reducing the level of noises from the shunt controller generated due to the flow of refrigerant or other causes.

Sound insulation design

Design Flexibility

Indoor unit capacity connection

HP	KXZR
8~16	200%
17~34	160%
36~60	130%

HP	KXZRX
16	200%
18~34	160%
36	130%

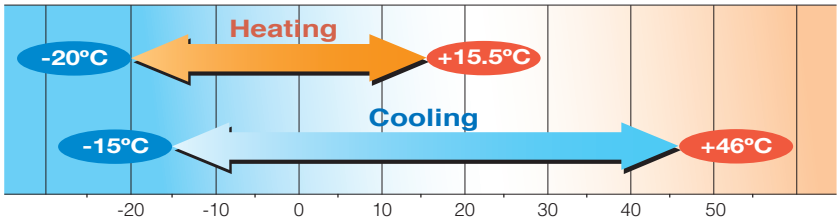
- In case that capacity connection is more than 130%, additional charge of refrigerant is required on site.
- In case of 8-34HP of the systems, if one or more indoor units of FDK, FDFL,FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.

Connectable indoor units

Up to 91 indoor units can be connected to the largest capacity outdoor unit, with a range of 17 types of exposed or concealed indoor unit, in several capacities, a choice of 91 indoor units is available.

Wide Range of Operation

KXZR series permits an extensible system design considering a heating range operation under a low temperature condition down to -20˚C and a cooling range operation up to 46˚C (previous model : 43˚C)

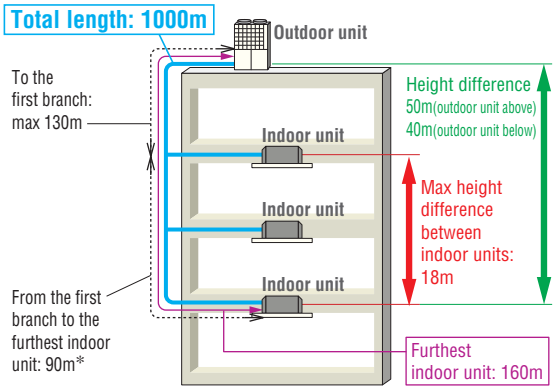


KXZ Heat recovery 3-pipe systems
8, 10, 12HP(22.4kW – 33.5kW) - *for simultaneous heating and cooling*

Model No.	Nominal Cooling Capacity
FDC224KXZRE1	22.4kW
FDC280KXZRE1	28.0kW
FDC335KXZRE1	33.5kW

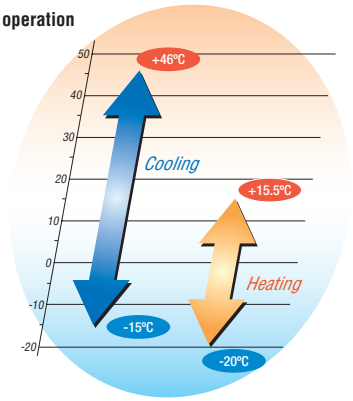
Uniform footprint of all models (from 8HP~24HP) allows continuous side-by-side installation

- Connect up to 44 indoor units / up to 200% capacity.
- High efficiency with COP(in cooling)up to 4.3.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.

Range of operation



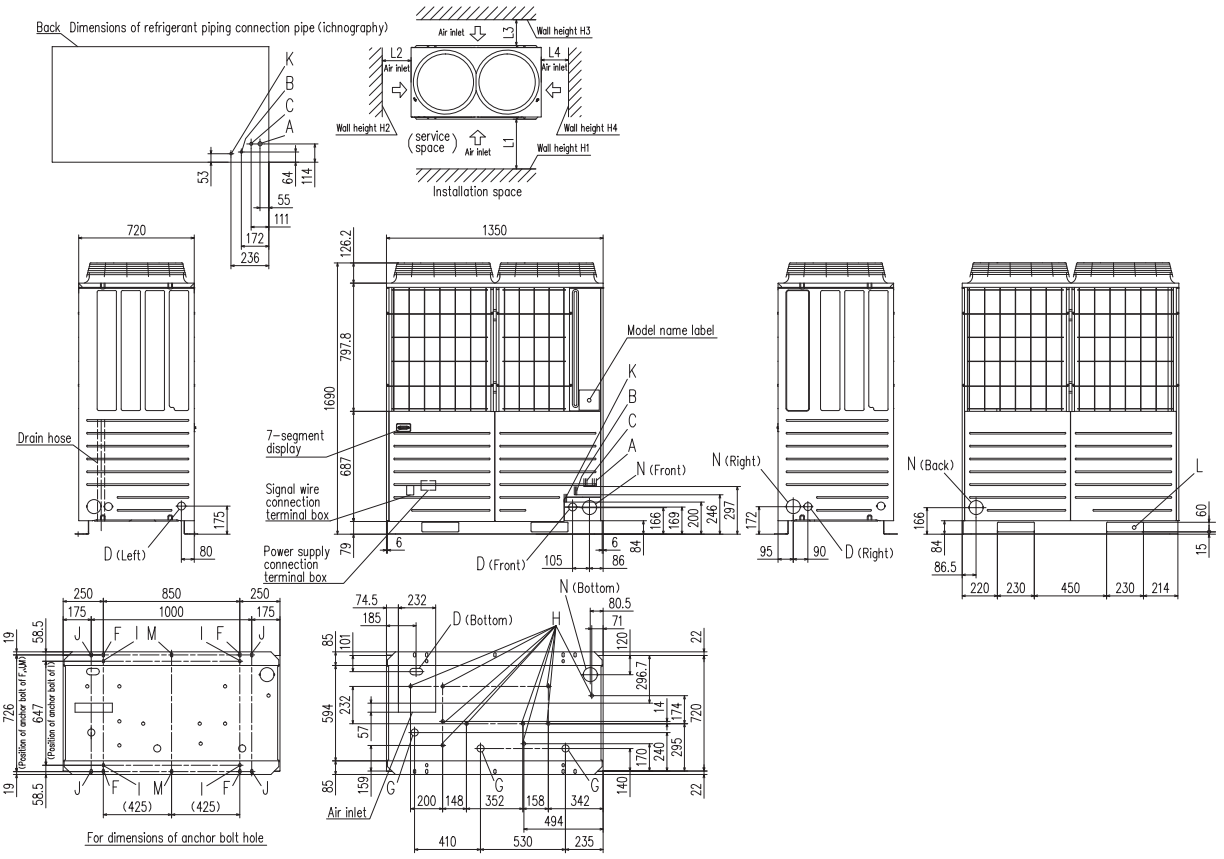
Specifications

Item			Model	FDC224KXZRE1	FDC280KXZRE1	FDC335KXZRE1
Nominal horse power				8HP	10HP	12HP
Power source				3 Phase 380-415V, 50Hz		
Starting current			A	5		
Max current			A	16.0	20.0	21.2
Nominal capacity	Cooling		kW	22.4	28.0	33.5
	Heating			22.4	28.0	33.5
Electrical characteristics	Power consumption	Cooling	kW	5.15	7.38	9.64
		Heating		4.62	6.19	8.12
Exterior dimensions	HxWxD		mm	1690x1350x720		
Net weight			kg	289		
Sound pressure level	Cooling/Heating		dB(A)	55/57		61/58
Refrigerant	Type / GWP			R410A / 2088		
	Charge		kg/TCO2Eq	11.5 / 24.012		
Refrigerant piping size	Liquid line		mm(in)	ø9.52(3/8")		ø12.7(1/2")
	Suction Gas line			ø19.05(3/4")	ø22.22(7/8")	ø25.4(1") [ø22.22(7/8")]
	Discharge Gas line			ø15.88(5/8")	ø19.05(3/4")	
Capacity connection			%	50~200		
Number of connectable indoor units				29	37	44

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

Dimensions

All measurements in mm.



Mark	Content	224	280	335
A	Refrigerant suction gas piping connection entrance	ø19.05(Brazing)	ø22.22(Brazing)	ø25.4(Brazing)
B	Refrigerant liquid piping connection entrance	ø9.52(Flare)		ø12.7(Flare)
C	Refrigerant discharge gas piping connection entrance	ø15.88(Brazing)	ø19.05(Brazing)	
D	Power supply entry hole	ø50(right · left · front),long hole 40x80(Bottom)		
F	Anchor bolt hole	M10 x 4 places		
G	Drain waste water hose hole	ø45 x 3 places		
H	Drain hole	ø20 x 10 places		
K	Refrigerant oil equalization piping connection entrance	ø9.52(Flare)		
L	Carrying in or hole for hanging	230x60		
N	Refrigerant piping exit hole	ø88(or ø100)		

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

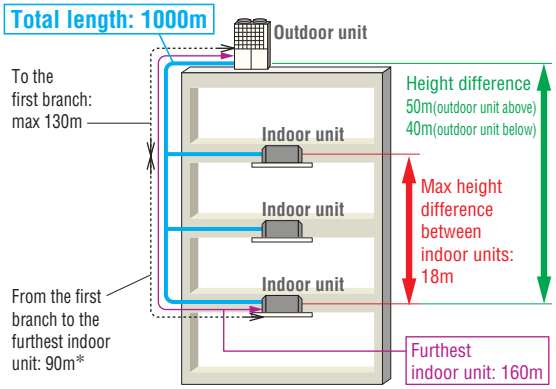
KXZ Heat recovery 3-pipe systems
14, 16, 17, 18, 20, 22, 24HP (40.0kW – 67.0kW)

- for simultaneous heating and cooling

Model No.	Nominal Cooling Capacity
FDC400KXZRE1	40.0kW
FDC450KXZRE1	45.0kW
FDC475KXZRE1	47.5kW
FDC500KXZRE1	50.0kW
FDC560KXZRE1	56.0kW
FDC615KXZRE1	61.5kW
FDC670KXZRE1	67.0kW

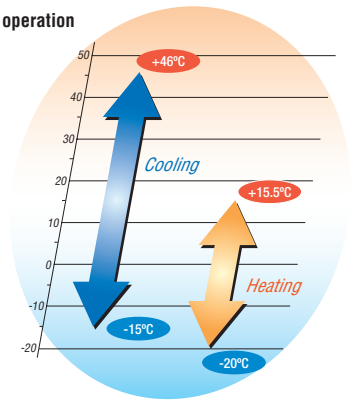
- Connect up to 71 indoor units / up to 160% capacity.(400·450KXZRE1:200%)
- High efficiency with COP(in cooling)up to 3.5.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

Uniform footprint of all models (from 8HP~24HP) allows continuous side-by-side installation



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.

Range of operation



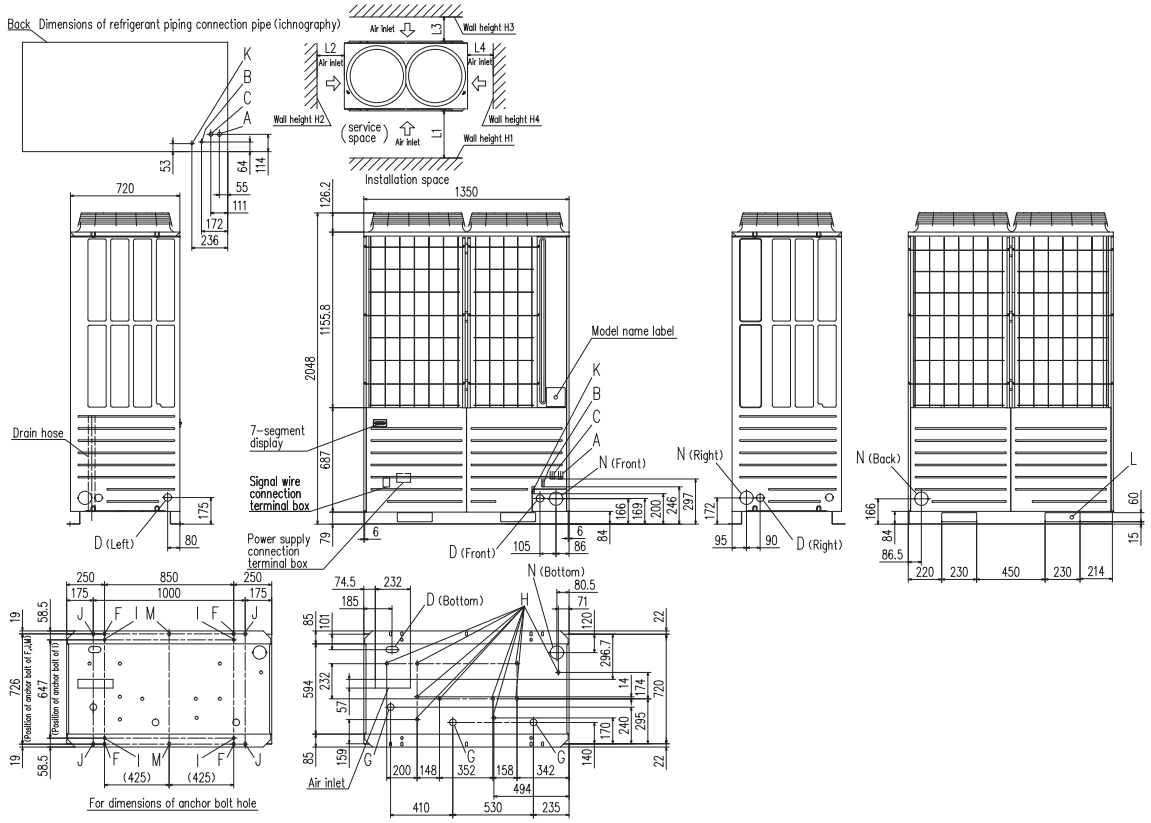
Specifications

Item			Model	FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC615KXZRE1	FDC670KXZRE1
Nominal horse power				14HP	16HP	17HP	18HP	20HP	22HP	24HP
Power source				3 Phase 380-415V, 50Hz						
Starting current			A	5		8				
Max current			A	30.0	32.0	40.4	41.0	41.6	42.0	42.4
Nominal capacity	Cooling		kW	40.0	45.0	47.5	50.0	56.0	61.5	67.0
	Heating			40.0	45.0	47.5	50.0	56.0	61.5	63.0
Electrical characteristics	Power consumption	Cooling	kW	11.55	14.45	14.82	15.19	18.31	21.35	25.51
		Heating		9.76	11.38	11.58	12.7	14.33	16.15	17.47
Exterior dimensions	HxWxD		mm	2048x1350x720						
Net weight			kg	357		410				
Sound pressure level	Cooling/Heating		dB(A)	60/62	61/62			64/65	65/66	
Refrigerant	Type / GWP			R410A / 2088						
	Charge		kg/TCO2Eq	11.5 / 24.012						
Refrigerant piping size	Liquid line		mm(in)	ø12.7(1/2")						
	Suction Gas line			ø25.4(1")[ø28.58(1 1/8")]	ø28.58(1 1/8")					
	Discharge Gas line			ø22.22(7/8")					ø25.4(1") [ø22.22(7/8")]	
Capacity connection			%	50~200		50~160				
Number of connectable indoor units				53	60	50	53	59	65	71

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. 'tonne(s) of CO2 equivalent' means a quantity of greenhouse gases- expressed as the product of the weight of the greenhouse gases in metric tonnes and of their global warming potential.
4. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

Dimensions

All measurements in mm.



Mark	Content	400	450	475	500	560	615	670
A	Refrigerant suction gas piping connection entrance	ø25.4 (Brazing)	ø28.58(Brazing)					
B	Refrigerant liquid piping connection entrance	ø12.7(Flare)						
C	Refrigerant discharge gas piping connection entrance	ø22.22(Brazing)					ø25.4(Brazing)	
D	Power supply entry hole	ø50(right · left · front),long hole 40x80(Bottom)						
F	Anchor bolt hole	M10 x 4 places						
G	Drain waste water hose hole	ø45 x 3 places						
H	Drain hole	ø20 x 10 places						
K	Refrigerant oil equalization piping connection pipe	ø9.52(Flare)						
L	Carrying in or hole for hanging	230x60						
N	Refrigerant piping exit hole	ø88(or ø100)						

Installation example		
Dimensions	1	2
L_1	500	Open
L_2	10(30)	10(30)
L_3	100	100
L_4	10(30)	Open
H_1	1500	Open
H_2	No limit	No limit
H_3	1000	No limit
H_4	No limit	Open

() :In case it is the promised installation location that the outdoor unit is used on conditions with the ambient temperature of 43ºC or more.

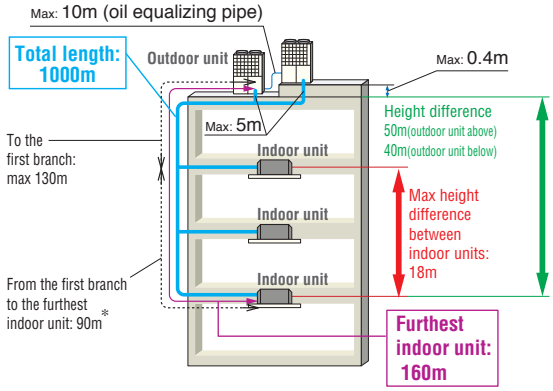
KXZ Heat recovery 3-pipe combination systems 26, 28, 30, 32HP (73.5kW – 90.0kW)

- for simultaneous heating and cooling

Model No.	Nominal Cooling Capacity
FDC735KXZRE1 (FDC335+FDC400)	73.5kW
FDC800KXZRE1 (FDC400+FDC400)	80.0kW
FDC850KXZRE1 (FDC400+FDC450)	85.0kW
FDC900KXZRE1 (FDC450+FDC450)	90.0kW

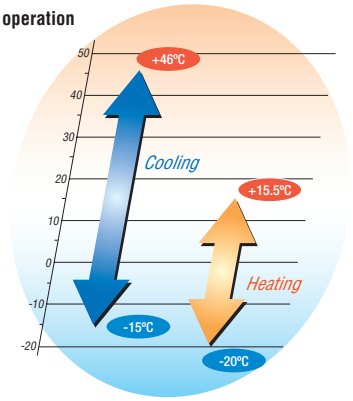
- Connect up to 80 indoor units / up to 160% capacity.
- High efficiency with COP(in cooling)up to 3.4.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

• In case of 26HP



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

Range of operation



Specifications

*Exterior dimension : Please refer to page 53,55.

Item			Model	FDC735KXZRE1	FDC800KXZRE1	FDC850KXZRE1	FDC900KXZRE1
Combination (FDC)				335KXZRE1	400KXZRE1	400KXZRE1	450KXZRE1
				400KXZRE1	400KXZRE1	450KXZRE1	450KXZRE1
Nominal horse power				26HP	28HP	30HP	32HP
Power source				3 Phase 380-415V, 50Hz			
Starting current			A	10			
Max current			A	51.2	60.0	62.0	64.0
Nominal capacity	Cooling		kW	73.5	80.0	85.0	90.0
	Heating			73.5	80.0	85.0	90.0
Electrical characteristics	Power consumption	Cooling	kW	21.2	23.1	26.0	28.9
		Heating		17.9	19.5	21.1	22.8
Exterior dimensions	HxWxD		mm	2048x2700x720			
Net weight			kg	546	714		
Refrigerant charge	R410A		kg	11.5x2			
Refrigerant piping size	Liquid line		mm(in)	ø15.88(5/8")			
	Suction Gas line			ø31.75(1 1/4")[ø34.92(1 3/8")]			
	Discharge Gas line			ø25.4(1")[ø28.58(1 1/8")]	ø28.58(1 1/8")		
Capacity connection			%	50~160			
Number of connectable indoor units				78	80		

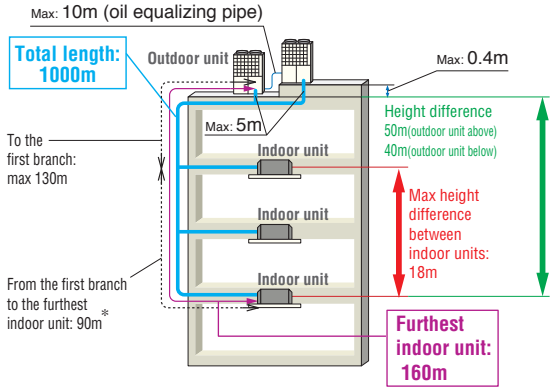
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat recovery 3-pipe combination systems 34, 36, 38, 40HP (95.0kW – 112.0kW)

- for simultaneous heating and cooling

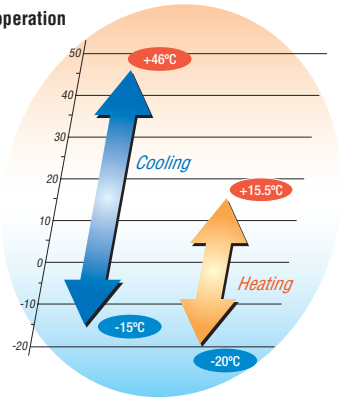
Model No.	Nominal Cooling Capacity
FDC950KXZRE1 (FDC475+FDC475)	95.0kW
FDC1000KXZRE1 (FDC500+FDC500)	100.0kW
FDC1060KXZRE1 (FDC500+FDC560)	106.0kW
FDC1120KXZRE1 (FDC560+FDC560)	112.0kW

- Connect up to 80 indoor units / up to 130% capacity.(950KXZRE1:160%)
- High efficiency with COP(in cooling)up to 3.7.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

Range of operation



Specifications

*Exterior dimension : Please refer to page 55.

Item			Model	FDC950KXZRE1	FDC1000KXZRE1	FDC1060KXZRE1	FDC1120KXZRE1
Combination (FDC)				475KXZRE1	500KXZRE1	500KXZRE1	560KXZRE1
				475KXZRE1	500KXZRE1	560KXZRE1	560KXZRE1
Nominal horse power				34HP	36HP	38HP	40HP
Power source				3 Phase 380-415V, 50Hz			
Starting current			A	16			
Max current			A	80.8	82.0	82.6	83.2
Nominal capacity	Cooling		kW	95.0	100.0	106.0	112.0
	Heating			95.0	100.0	106.0	112.0
Electrical characteristics	Power consumption	Cooling	kW	29.6	30.4	33.5	36.6
		Heating		23.2	24.3	26.5	28.7
Exterior dimensions	HxWxD		mm	2048x2700x720			
Net weight			kg	820			
Refrigerant charge	R410A		kg	11.5x2			
Refrigerant piping size	Liquid line		mm(in)	ø15.88(5/8")	ø19.05(3/4")		
	Suction Gas line			ø31.75(1 1/4")[ø34.92(1 3/8")]	ø38.1(1 1/2")[ø34.92(1 3/8")]		
	Discharge Gas line			ø28.58(1 1/8")		ø31.75(1 1/4")[ø28.58(1 1/8")]	
Capacity connection			%	50~160	50~130		
Number of connectable indoor units				80			

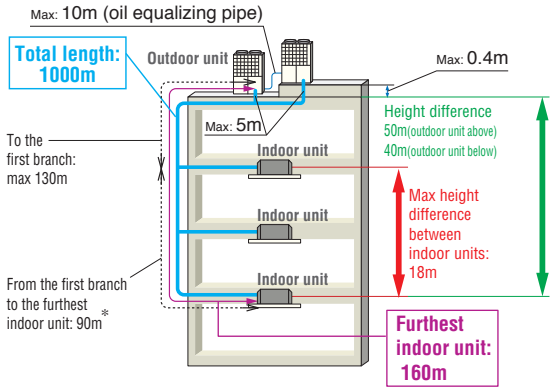
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat recovery 3-pipe combination systems 42, 44, 46, 48, 50HP (120.0kW – 142.5kW)

- for simultaneous heating and cooling

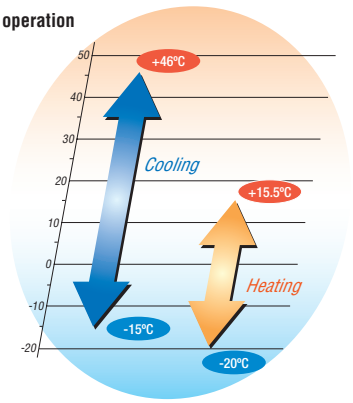
Model No.	Nominal Cooling Capacity
FDC1200KXZRE1 (FDC400+FDC400+FDC400)	120.0kW
FDC1250KXZRE1 (FDC400+FDC400+FDC450)	125.0kW
FDC1300KXZRE1 (FDC400+FDC450+FDC450)	130.0kW
FDC1350KXZRE1 (FDC450+FDC450+FDC450)	135.0kW
FDC1425KXZRE1 (FDC475+FDC475+FDC475)	142.5kW

- Connect up to 80 indoor units / up to 130% capacity.
- High efficiency with COP(in cooling)up to 3.5.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

Range of operation



Specifications

*Exterior dimension : Please refer to page 55.

Item			Model	FDC1200KXZRE1	FDC1250KXZRE1	FDC1300KXZRE1	FDC1350KXZRE1	FDC1425KXZRE1
Combination (FDC)				400KXZRE1	400KXZRE1	400KXZRE1	450KXZRE1	475KXZRE1
				400KXZRE1	400KXZRE1	450KXZRE1	450KXZRE1	475KXZRE1
				400KXZRE1	450KXZRE1	450KXZRE1	450KXZRE1	475KXZRE1
Nominal horse power				42HP	44HP	46HP	48HP	50HP
Power source				3 Phase 380-415V, 50Hz				
Starting current			A	15				24
Max current			A	90.0	92.0	94.0	96.0	121.2
Nominal capacity	Cooling		kW	120.0	125.0	130.0	135.0	142.5
	Heating			120.0	125.0	130.0	135.0	142.5
Electrical characteristics	Power consumption	Cooling	kW	34.65	37.55	40.45	43.35	44.46
		Heating		29.28	30.90	32.52	34.14	34.74
Exterior dimensions	HxWxD		mm	2048x4050x720				
Net weight			kg	1071				1230
Refrigerant charge	R410A		kg	11.5x3				
Refrigerant piping size	Liquid line		mm(in)	ø19.05(3/4")				
	Suction Gas line			ø38.1(1 1/2")[ø34.92(1 3/8")]				
	Discharge Gas line			ø31.75(1 1/4")[ø28.58(1 1/8")]				
Capacity connection			%	50~130				
Number of connectable indoor units				80				

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

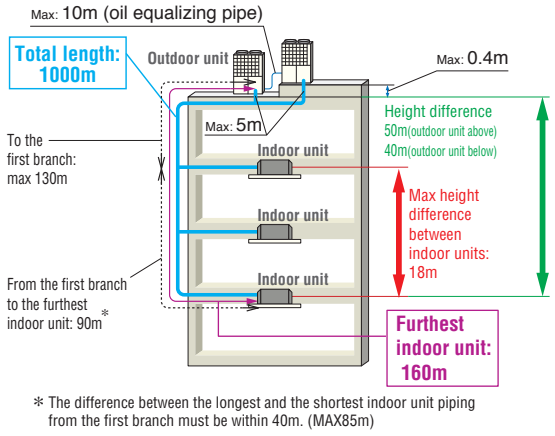
KXZ Heat recovery 3-pipe combination systems 52, 54, 56, 58, 60HP (145.0kW – 168.0kW)

- for simultaneous heating and cooling

Blue Fin

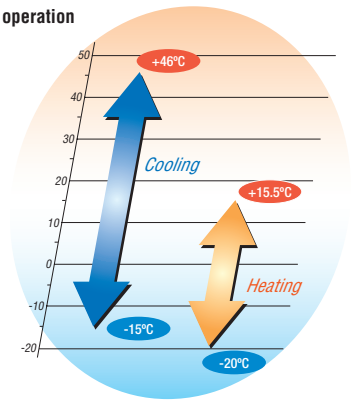
Model No.	Nominal Cooling Capacity
FDC1450KXZRE1 (FDC475+FDC475+FDC500)	145.0kW
FDC1500KXZRE1 (FDC500+FDC500+FDC500)	150.0kW
FDC1560KXZRE1 (FDC500+FDC500+FDC560)	156.0kW
FDC1620KXZRE1 (FDC500+FDC560+FD560)	162.0kW
FDC1680KXZRE1 (FDC560+FDC560+FDC560)	168.0kW

- Connect up to 80 indoor units / up to 130% capacity.
- High efficiency with COP(in cooling)up to 3.3.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

Range of operation



Specifications

*Exterior dimension : Please refer to page 55.

Item			Model	FDC1450KXZRE1	FDC1500KXZRE1	FDC1560KXZRE1	FDC1620KXZRE1	FDC1680KXZRE1
Combination (FDC)				475KXZRE1	500KXZRE1	500KXZRE1	500KXZRE1	560KXZRE1
				475KXZRE1	500KXZRE1	500KXZRE1	560KXZRE1	560KXZRE1
				500KXZRE1	500KXZRE1	560KXZRE1	560KXZRE1	560KXZRE1
Nominal horse power				52HP	54HP	56HP	58HP	60HP
Power source				3 Phase 380-415V, 50Hz				
Starting current			A	24				
Max current			A	121.8	123.0	123.6	124.2	124.8
Nominal capacity	Cooling		kW	145.0	150.0	156.0	162.0	168.0
	Heating			145.0	150.0	156.0	162.0	168.0
Electrical characteristics	Power consumption	Cooling	kW	44.83	45.57	48.69	51.81	54.93
		Heating		35.33	36.51	38.67	40.83	42.99
Exterior dimensions	HxWxD		mm	2048x4050x720				
Net weight			kg	1230				
Refrigerant charge	R410A		kg	11.5x3				
Refrigerant piping size	Liquid line		mm(in)	ø19.05(3/4")				
	Suction Gas line			ø38.1(1 1/2")[ø34.92(1 3/8")]				
	Discharge Gas line			ø31.75(1 1/4")[ø28.58(1 1/8")]				
Capacity connection			%	50~130				
Number of connectable indoor units				80				

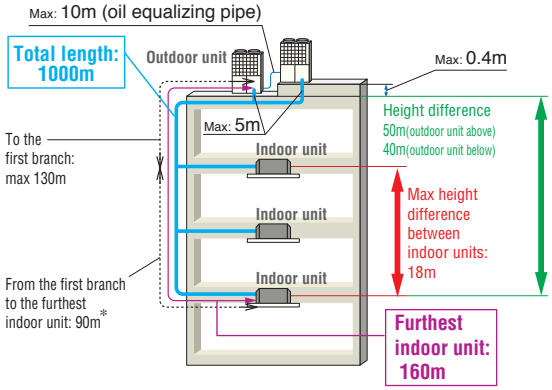
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat recovery 3-pipe Hi-COP combination systems 16, 18, 20, 22, 24HP (45.0kW~67.0kW)

- for simultaneous heating and cooling

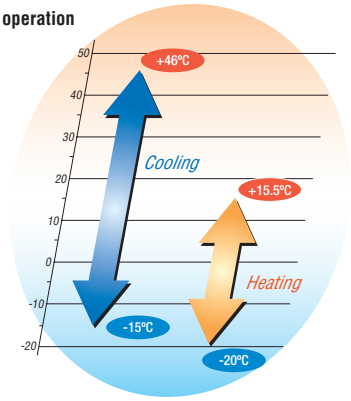
Model No.	Nominal Cooling Capacity
FDC450KXZRXE1 (FDC224+FDC224)	45.0kW
FDC500KXZRXE1 (FDC224+FDC280)	50.0kW
FDC560KXZRXE1 (FDC280+FDC280)	56.0kW
FDC615KXZRXE1 (FDC280+FDC335)	61.5kW
FDC670KXZRXE1 (FDC335+FDC335)	67.0kW

- Connect up to 70 indoor units/up to 160% capacity.(450KXZRXE1:200%)
- High efficiency with COP (in cooling) up to 4.4.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.

Range of operation



Specifications

Exterior dimension : Please refer to page53.

Item			Model	FDC450KXZRXE1	FDC500KXZRXE1	FDC560KXZRXE1	FDC615KXZRXE1	FDC670KXZRXE1
Combination (FDC)				224KXZRE1	224KXZRE1	280KXZRE1	280KXZRE1	335KXZRE1
				224KXZRE1	280KXZRE1	280KXZRE1	335KXZRE1	335KXZRE1
Nominal horse power				16HP	18HP	20HP	22HP	24HP
Power source				3 Phase 380-415V, 50Hz				
Starting current			A	10				
Max current			A	32.0	36.0	40.0	41.2	42.4
Nominal capacity	Cooling		kW	45.0	50.0	56.0	61.5	67.0
	Heating			45.0	50.0	56.0	61.5	67.0
Electrical characteristics	Power consumption	Cooling	kW	10.29	12.53	14.76	17.02	19.28
		Heating		9.24	10.81	12.38	14.31	16.24
Exterior dimensions	HxWxD		mm	1690x2700x720				
Net weight			kg	578				
Refrigerant charge	R410A		kg	11.5x2				
Refrigerant piping size	Liquid line		mm(in)	ø12.7(1/2")				
	Gas line			ø28.58(1 1/8")				
	Dischance Gas line			ø22.22(7/8")			ø25.4(1")[ø22.22(7/8")]	
Capacity connection			%	80-200	80-160			
Number of connectable indoor units				60	53	59	65	70

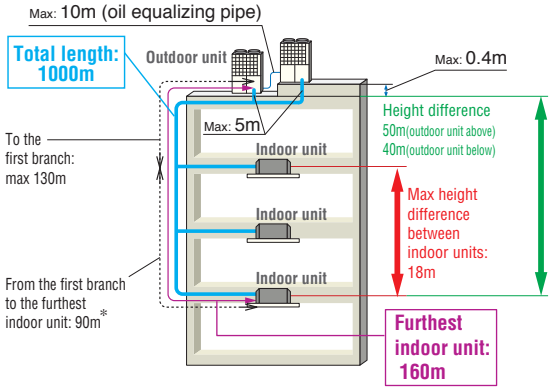
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

KXZ Heat recovery 3-pipe Hi-COP combination systems 26, 28, 30, 32, 34, 36HP (73.5kW~100.0kW)

- for simultaneous heating and cooling

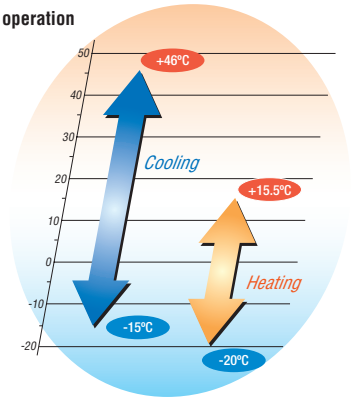
Model No.	Nominal Cooling Capacity
FDC735KXZRXE1 (FDC224+FDC224+FDC280)	73.5kW
FDC800KXZRXE1 (FDC224+FDC280+FDC280)	80.0kW
FDC850KXZRXE1 (FDC280+FDC280+FDC280)	85.0kW
FDC900KXZRXE1 (FDC280+FDC280+FDC335)	90.0kW
FDC950KXZRXE1 (FDC280+FDC335+FDC335)	95.0kW
FDC1000KXZRXE1(FDC335+FDC335+FDC335)	100.0kW

- Connect up to 80 indoor units/up to 160% capacity.(1000KXZRXE1:130%)
- High efficiency with COP (in cooling) up to 4.1.
- These units employ DC inverter multiport compressors with concentrated winding motor.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



* The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.

Range of operation



Specifications

Exterior dimension : Please refer to page53.

Item			Model	FDC735KXZRXE1	FDC800KXZRXE1	FDC850KXZRXE1	FDC900KXZRXE1	FDC950KXZRXE1	FDC1000KXZRXE1
Combination (FDC)				224KXZRE1	224KXZRE1	280KXZRE1	280KXZRE1	280KXZRE1	335KXZRE1
				224KXZRE1	280KXZRE1	280KXZRE1	280KXZRE1	335KXZRE1	335KXZRE1
				280KXZRE1	280KXZRE1	280KXZRE1	335KXZRE1	335KXZRE1	335KXZRE1
Nominal horse power				26HP	28HP	30HP	32HP	34HP	36HP
Power source				3 Phase 380-415V, 50Hz					
Starting current			A	15					
Max current			A	52.0	56.0	60.0	61.2	62.4	63.6
Nominal capacity	Cooling		kW	73.5	80.0	85.0	90.0	95.0	100.0
	Heating			73.5	80.0	85.0	90.0	95.0	100.0
Electrical characteristics	Power consumption	Cooling	kW	17.67	19.91	22.14	24.40	26.66	28.92
		Heating		15.43	17.00	18.57	20.50	22.43	24.36
Exterior dimensions	HxWxD		mm	1690x4050x720					
Net weight			kg	867					
Refrigerant charge	R410A		kg	11.5x3					
Refrigerant piping size	Liquid line		mm(in)	ø15.88(5/8")					
	Gas line			ø31.75(1 1/4") [ø34.92(1 3/8")]					ø38.1(1 1/2") [ø34.92(1 3/8")]
	Dischance Gas line			ø25.4(1") [ø28.58(1 1/8")]	ø28.58(1 1/8")				
Capacity connection			%	80-160					80-130
Number of connectable indoor units				78	80				

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. [ ] : Pipe sizes applicable to European installations are shown in parentheses.

PFD refrigerant flow branch control

Relay kit
(Relay kit comes attached to the branch control)

Branch control	Total downstream indoor unit capacity
PFD1124-E	less than 11.2kW
PFD1804-E	less than 18.0kW
PFD2804-E	28.0kW or less
PFD1124X4-E	less than 37.1kW(less than 11.2kWx4 branches)

4-Way PFD box

***Pictures on this page are images.**

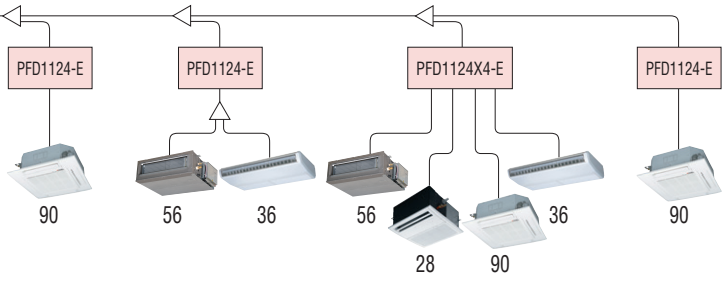
Design flexibility

Groups of indoor units can be connected up to a total capacity 37.1kW to a single PFD with branch piping and all units in that group will operate in the same mode only (cooling or heating).

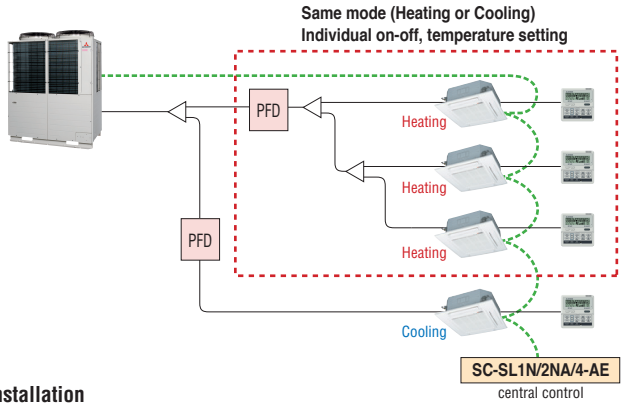
We also have introduced the 4-way PFD control PFD1124X4-E which can connect up to four indoor units with individual control - simultaneous cooling or heating.

Branch control	Total downstream capacity	*Connectable indoor units
PFD1124-E	less than 112	1-5
PFD1804-E	112 or more but less than 180	1-8
PFD2804-E	180 or more but less than 280	1-10
PFD1124X4-E	less than 371(less than 112 per branch)	Up to 16

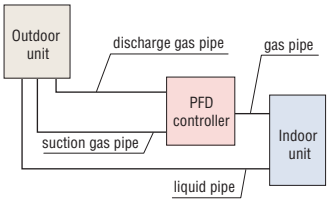
*Refer to Data Book for details



- The remote control setting (as individual indoor unit on-off, temperature setting other than cooling/heating mode control) is possible with one remote control connected to each indoor unit, while at the same time, Center Control (SC-SL1N/2NA/4-AE) can be used together with the individual remote control.
- It is necessary to set the central control to use this function. Please refer to the Installation Manual for details.



Easy installation
New PFD design means the connection of the indoor unit liquid pipe is made directly to the liquid line - bypassing the PFD. This means (x2) less pipe connections per indoor unit, reducing installation time and cost.

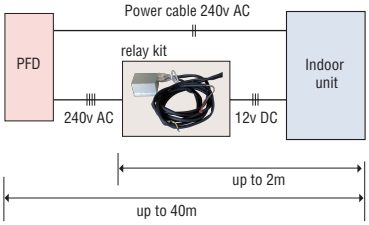


- In case of mode changeover from cooling to heating and from heating to cooling, by the use of only the indoor units and PFD box combination, the mode changeover noise was reduced. All this made possible without turning off the compressor and at the same time without the reduction of capacity.
- The risk of refrigerant leakage was reduced by changing piping connection at the PFD box to brazing method.
- By the use of optional PFD box extension cable that has a connector at ends, makes it possible to further separate the indoor unit and PFD box. This will enable the PFD box to be located away from the indoor unit and help reduce the influence of sound caused by PFD box and refrigerant flow.

extension cable 15m

PFD4-15WR-E (option)

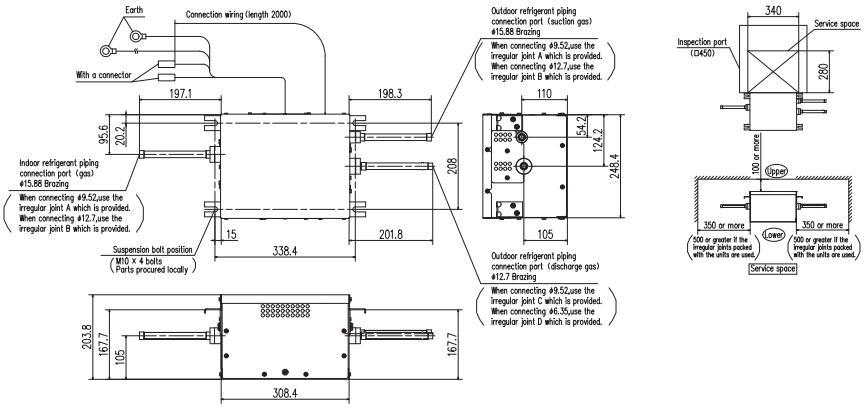
The PFD is connected to the indoor unit by 3 core signal wire via a relay kit (supplied) to be located within 2m of each other. The indoor unit however can be up to 40m away. Power to the PFD can be connected from the indoor unit or other supply.



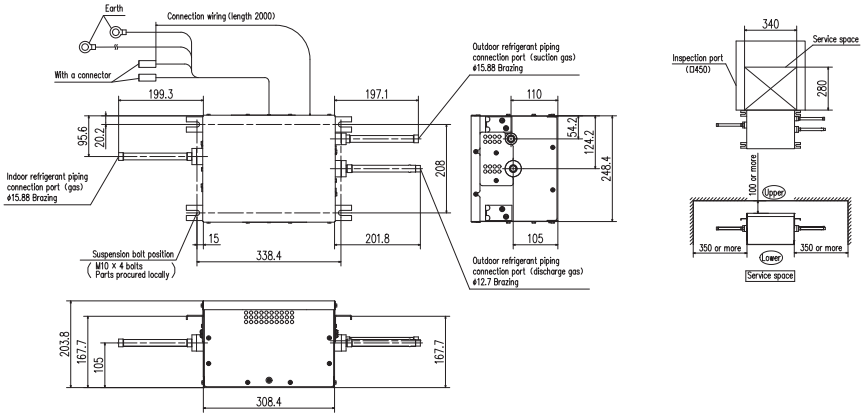
Dimensions

All measurements in mm.

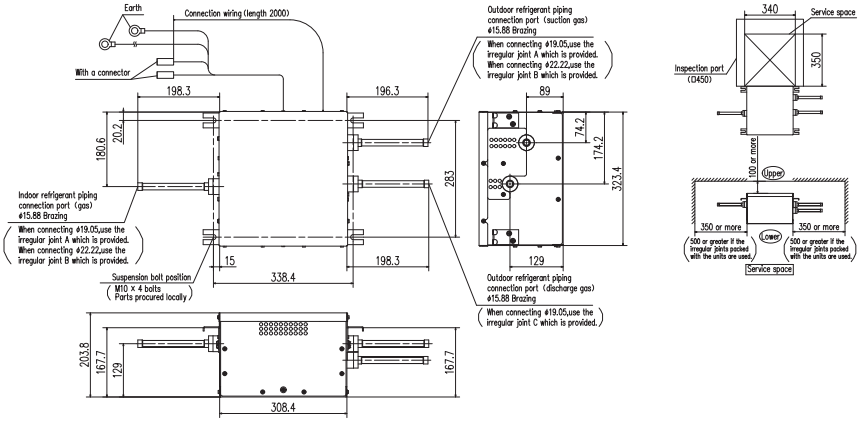
PFD1124-E



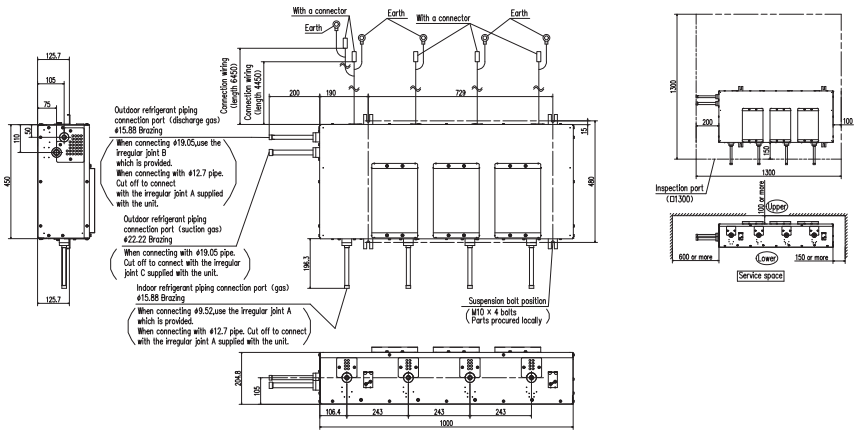
PFD1804-E



PFD2804-E



PFD1124X4-E



Water cooled series
8~36HP (22.4~100.0kW)

Model No.	Nominal Cooling Capacity
FDC224KXZWE1	22.4kW
FDC280KXZWE1	28.0kW
FDC335KXZWE1	33.5kW
FDC450KXZWE1(FDC224×2)	45.0kW
FDC500KXZWE1(FDC224+FDC280)	50.0kW
FDC560KXZWE1(FDC280×2)	56.0kW
FDC615KXZWE1(FDC280+FDC335)	61.5kW
FDC670KXZWE1(FDC335×2)	67.0kW

Model No.	Nominal Cooling Capacity
FDC730KXZWE1(FDC224×2+FDC280)	73.0kW
FDC775KXZWE1(FDC224+FDC280×2)	77.5kW
FDC850KXZWE1(FDC280×3)	85.0kW
FDC900KXZWE1(FDC280×2+FDC335)	90.0kW
FDC950KXZWE1(FDC280+FDC335×2)	95.0kW
FDC1000KXZWE1(FDC335×3)	100kW

Features

1. High efficiency (EER/COP)
- Energy saving ➡ Reduction of operation cost!

2. Compact design
- Easy transportation and installation
- Elevator carrying

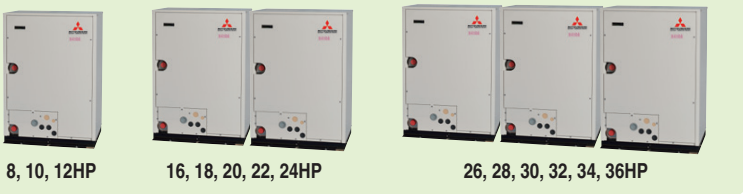
3. BMS (Building Management System)
- Can use the same BMS as air-cooled KX
- Available to large-scale and fine control

4. Serviceability & Maintenance
- Service and maintenance of main parts can be done from the front side only
- Useful service tools (Mente-PC, SL-Checker etc.)

Applicable to

1. High-rise Building
- 50m <FDC> , -100m <FDCH>
- 100m or higher in height <FDCW>

2. Glass-exterior facade Building
- Possible to hide KXZW units and to keep fine sight



8, 10, 12HP | 16, 18, 20, 22, 24HP | 26, 28, 30, 32, 34, 36HP

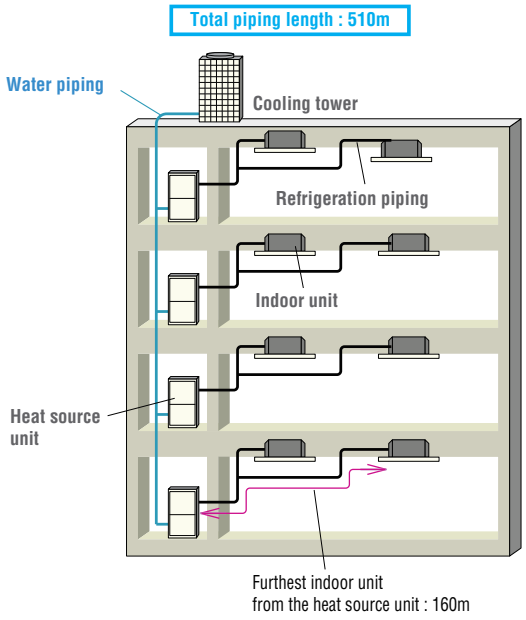
Specifications

Item		Model	FDC224KXZWE1	FDC280KXZWE1	FDC335KXZWE1	FDC450KXZWE1	FDC500KXZWE1	FDC560KXZWE1	FDC615KXZWE1	FDC670KXZWE1
Combination (FDC)			-	-	-	224KXZWE1	224KXZWE1	280KXZWE1	280KXZWE1	335KXZWE1
			-	-	-	224KXZWE1	280KXZWE1	280KXZWE1	335KXZWE1	335KXZWE1
Nominal horse power			8HP	10HP	12HP	16HP	18HP	20HP	22HP	24HP
Power source			3 Phase 380-415V, 50Hz							
Nominal capacity	Cooling	kW	22.4	28.0	33.5	45.0	50.0	56.0	61.5	67.0
	Heating		25.0	31.5	37.5	50.0	56.0	63.0	69.0	75.0
Power consumption	Cooling	kW	4.23	5.75	8.13	8.49	9.83	11.5	13.7	16.3
	Heating		4.24	5.10	6.30	8.47	9.27	10.2	11.4	12.6
EER	Cooling		5.3	4.9	4.1	5.3	5.1	4.9	4.5	4.1
COP	Heating		5.9	6.2	6.0	5.9	6.0	6.2	6.1	6.0
Exterior dimensions	HxWxD	mm	1100x780x550			(1100x780x550)x2				
Sound pressure level		dB(A)	48	50	52	50	52	53	54	55
Net weight		kg	185			185x2				

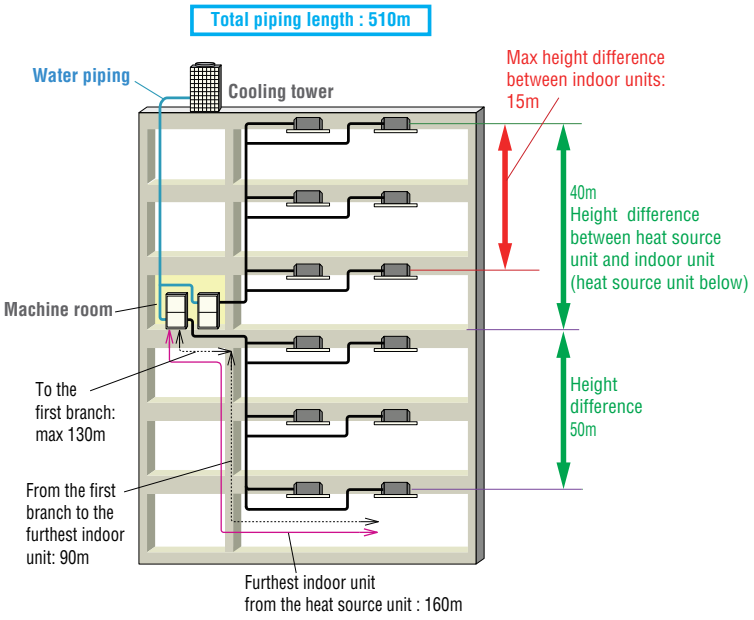
Item		Model	FDC730KXZWE1	FDC775KXZWE1	FDC850KXZWE1	FDC900KXZWE1	FDC950KXZWE1	FDC1000KXZWE1
Combination (FDC)			224KXZWE1	224KXZWE1	280KXZWE1	280KXZWE1	280KXZWE1	335KXZWE1
			224KXZWE1	280KXZWE1	280KXZWE1	280KXZWE1	335KXZWE1	335KXZWE1
			280KXZWE1	280KXZWE1	280KXZWE1	335KXZWE1	335KXZWE1	335KXZWE1
Nominal horse power			26HP	28HP	30HP	32HP	34HP	36HP
Power source			3 Phase 380-415V, 50Hz					
Nominal capacity	Cooling	kW	73.0	77.5	85.0	90.0	95.0	100
	Heating		82.5	90.0	95.0	100	106	112
Power consumption	Cooling	kW	14.2	15.5	17.5	19.5	21.7	24.3
	Heating		13.8	14.8	15.4	16.4	17.6	18.8
EER	Cooling		5.1	5.0	4.9	4.6	4.4	4.1
COP	Heating		6.0	6.1	6.2	6.1	6.0	6.0
Exterior dimensions	HxWxD	mm	(1100x780x550)x3					
Sound pressure level		dB(A)	54	54	55	56	56	57
Net weight		kg	185x3					

The data are based on the rating condition:
Cooling: Indoor temp. of 27 °C DB,19 °C WB, and heat source unit inlet water temp. of 30 °C, water flow rate 96 L/min
Heating: Indoor temp. of 20 °C DB,15 °C WB, and heat source unit inlet water temp. of 20 °C, water flow rate 96 L/min

Heat source units on every floor
- New building projects -

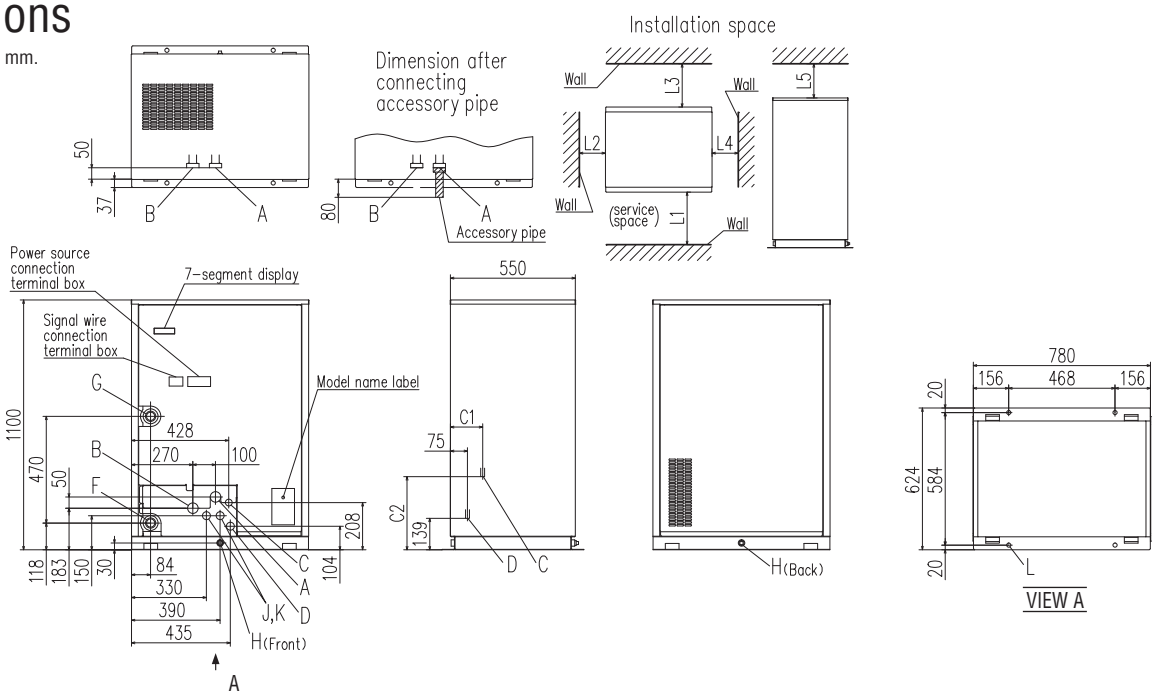


Heat source units in the machine room
- Renovation projects -



Dimensions

All measurements in mm.



Mark	Content	
A	High/low gas line	Refer to piping size
B	–	Not to use.
C	Liquid line	Refer to piping size
D	Oil equalization line	
F	Water inlet	R1 1/4
G	Water outlet	R1 1/4
H	Drain outlet	Rp 1/2,2places
J	Power source intake	ø35
K	Signal wiring intake	ø35
L	Anchor bolt hole	ø18,4places

Dimension	FDC-KXZWE1	
	224,280	335
C1	142	139
C2	322	316

Dimension \ Installation example	1
L1	600 or more
L2	20 or more
L3	500 or more
L4	20 or more
L5	300 or more

Piping size

	FDC224KXZWE1	FDC280KXZWE1	FDC335KXZWE1	Connection method
High/low gas line	ø19.05	ø22.22	ø25.4	Flange
Liquid line	ø9.52	ø9.52	ø12.7	Flare
Oil equalization line	ø9.52	ø9.52	ø9.52	

Refrigerant piping

Installation of Interconnecting Pipework

KXZ equipment is manufactured to the highest standards of quality and reliability. It is imperative that the method of installation and the materials used are also to high standards, to ensure trouble free operation and long term reliability.

The interconnecting pipework must be installed by a competent and trained engineer. Refrigeration quality copper tube must be used, soft copper coils or half-hard straight lengths. The refrigeration quality tube must be soft drawn seamless high grade copper pipe. The copper tube must be selected taking into account the higher operating pressures of R410A refrigerant, and that high pressures will occur throughout the system because of the reverse cycle operation. All pipework material used should be EN12735 European standard.

The supplied branch pipe kits, must be used to make connections to indoor units, and the supplied manifold kits must be used to make connections between outdoor units (where applicable); it is not permitted to use standard fittings such as elbows, tees etc. The branch pipes shall be installed in accordance with the manufacturer's instructions, allowing unrestricted flow of refrigerant, and in accordance with European standard E378.

All brazed joints shall be made with dry nitrogen purge to ensure the prevention of oxidisation to the internal surface of the copper pipes.

The ingress of moisture, dirt and any other contaminants to the interior of the copper pipes, and air conditioning units, must be prevented during the installation procedure.

After the installation of pipework, prior to the connection of the outdoor units, and sealing of insulation joints, the pipework must be pressure tested for leakage, using dry nitrogen.

Additional Refrigerant

Only R410A refrigerant shall be used, it must be charged by weight only, using electronic scales. The amount of additional refrigerant must be accurately calculated from the manufacturer's data, based on the length and diameter of each section of the liquid refrigerant pipework of the system.

The products contains fluorinated greenhouse gases covered by Kyoto protocol.

Standard (Outdoor unit side branching pipe – Indoor unit side first branching pipe)

If the longest distance (measured between the outdoor unit and the farthest indoor unit) is 90m or longer (actual length), please change the main pipe size according to the table below.

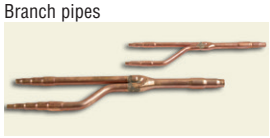
Outdoor unit	Main pipe size (normal)		Pipe size for an actual length of 90m or longer	
	Gas pipe	Liquid pipe	Gas pipe	Liquid pipe
280	ø22.22 × t 1.0	ø9.52 × t 0.8	ø25.4 (ø22.22) × t 1.0	ø12.7 × t 0.8
335	ø25.4 (ø22.22) × t 1.0	ø12.7 × t 0.8		
400	ø25.4 (ø28.58) × t 1.0		ø28.58 × t 1.0	
450	ø28.58 × t 1.0		ø31.8 × t 1.1 (ø28.58 × t 1.0)	ø15.88 × t 1.0
475				
500				
560				
615				
670				
735	ø31.8 × t 1.1 (ø34.92 × t 1.2)	ø15.88 × t 1.0	ø38.1 × t 1.35 (ø34.92 × t 1.2)	ø19.05 × t 1.0
800				
850				
900				
950				
1000	ø38.1 × t 1.35 (ø34.92 × t 1.2)	ø19.05 × t 1.0		ø22.22 × t 1.0
1060				
1120				
1200				
1250				
1300				
1350				
1425				
1450				
1500				
1560				
1620				
1680				

mm	inch
ø9.52	3/8"
ø12.7	1/2"
ø15.88	5/8"
ø19.05	3/4"
ø22.22	7/8"
ø25.4	1"

mm	inch
ø28.58	1 1/8"
ø31.8	1 1/4"
ø34.92	1 3/8"
ø38.1	1 1/2"
ø44.5	1 3/4"
ø50.8	2"

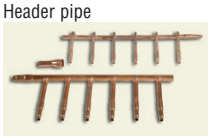
Please use C1220T-1/2H for ø19.05 or larger pipes.
Pipe sizes applicable to European installations are shown in parentheses.

Branch pipes

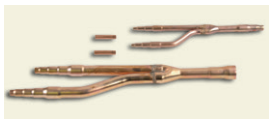


DIS-22-1G/DIS-180-1G

Header pipe



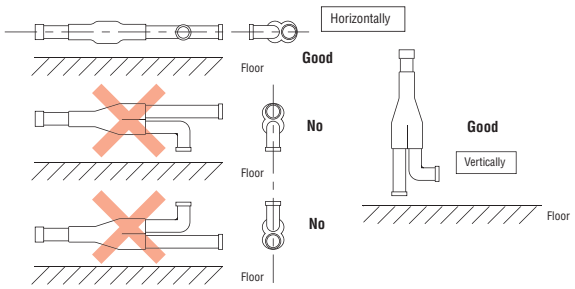
HEAD6-180-1G



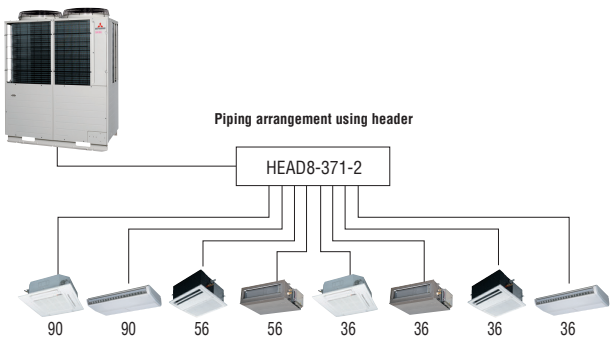
DIS-371-1G/DIS-540-3

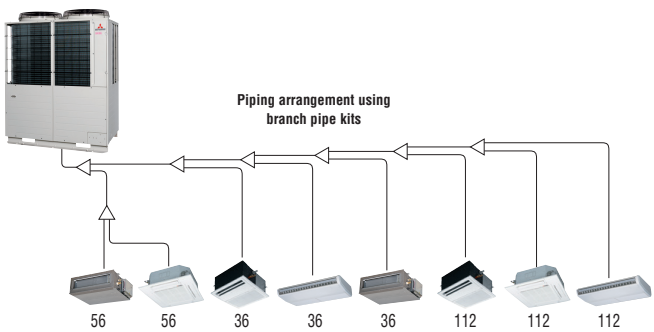
Combination outdoor unit manifold

DOS-2A-3
DOS-3A-3

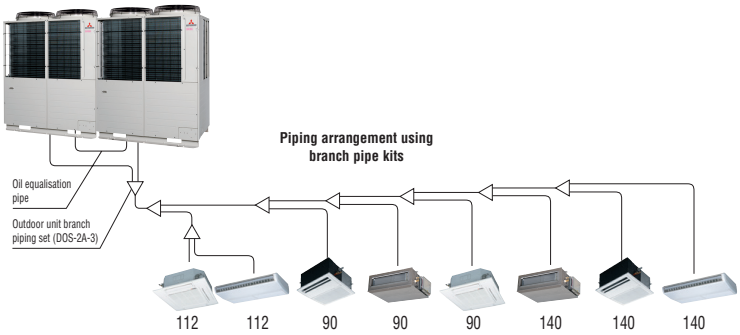


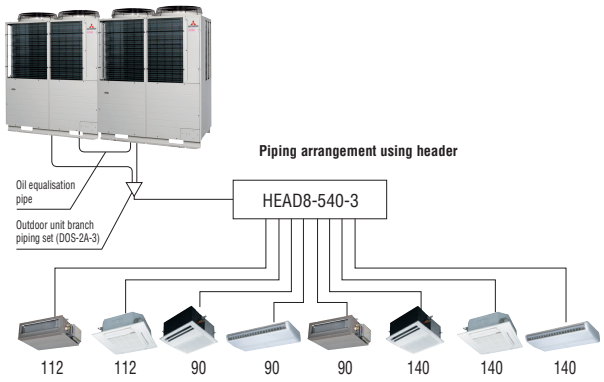
Single outdoor unit piping examples:





Combination outdoor unit piping examples:





Outdoor unit's branch piping set

Outdoor unit	Branch piping set
For two units (for 615~1120)	DOS-2A-3
For three units (for 1200~1680)	DOS-3A-3

Indoor unit's first branch piping set

Total capacity of indoor units	Branch piping set	Header set	
		Model	Branches
~179	DIS-22-1G	HEAD4-22-1G	Max 4 branches
180~370	DIS-180-1G	HEAD6-180-1G	Max 6 branches
371~539	DIS-371-1G	HEAD8-371-2	Max 8 branches
540~	DIS-540-3	HEAD8-540-3	Max 8 branches

Heat recovery systems **(Outdoor unit side branching pipe – Indoor unit side first branching pipe)**

If the longest distance (measured between the outdoor unit and the farthest indoor unit) is 90m or longer (actual length), please change the main pipe size according to the table below.

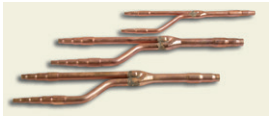
※Even if the longest distance exceeds 90m (actual length), you need not change the size of discharge gas pipes.

Outdoor unit	Main pipe size (normal)			Pipe size for an actual length of 90m or longer		
	Suction gas pipe	Discharge gas pipe	Liquid pipe	Suction gas pipe	Discharge gas pipe	Liquid pipe
224	ø19.05×t1.0	ø15.88×t1.0	ø9.52×t0.8	ø22.22×t1.0	ø15.88×t1.0	ø12.7×t0.8
280	ø22.22×t1.0	ø19.05×t1.0		ø25.4 (ø22.22)×t1.0	ø19.05×t1.0	
335	ø25.4 (ø22.22)×t1.0					
400	ø25.4 (ø28.58)×t1.0	ø22.22×t1.0	ø12.7×t0.8	ø28.58×t1.0	ø22.22×t1.0	
450	ø28.58×t1.0			ø31.8×t1.1 (ø28.58×t1.0)		ø15.88×t1.0
475						
500						
560						
615		ø25.4 (ø22.22)×t1.0			ø25.4 (ø22.22)×t1.0	
670						
735	ø31.8×t1.1 (ø34.92×t1.2)	ø28.58 (ø25.4)×t1.0	ø15.88×t1.0	ø38.1×t1.35 (ø34.92×t1.2)	ø28.58×t1.0	ø19.05×t1.0
800		ø28.58×t1.0				
850						
900						
950						
1000	ø38.1×t1.35 (ø34.92×t1.2)	ø31.8×t1.1 (ø28.58×t1.0)	ø19.05×t1.0		ø31.8×t1.1 (ø28.58×t1.0)	ø22.22×t1.0
1060						
1120						
1200						
1350						
1425						
1450						
1500						
1560						
1620						
1680						

Please use C1220T-1/2H for ø19.05 or larger pipes. Pipe sizes applicable to European installations.

mm	inch	mm	inch
ø9.52	3/8"	ø28.58	1 1/8"
ø12.7	1/2"	ø31.8	1 1/4"
ø15.88	5/8"	ø34.92	1 3/8"
ø19.05	3/4"	ø38.1	1 1/2"
ø22.22	7/8"	ø44.5	1 3/4"
ø25.4	1"	ø50.8	2"

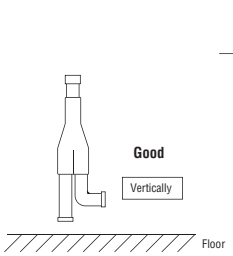
Branch pipes

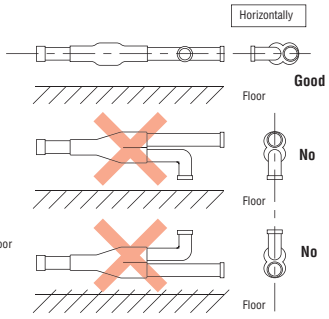


DIS-22-1-RG/DIS-180-1-RG

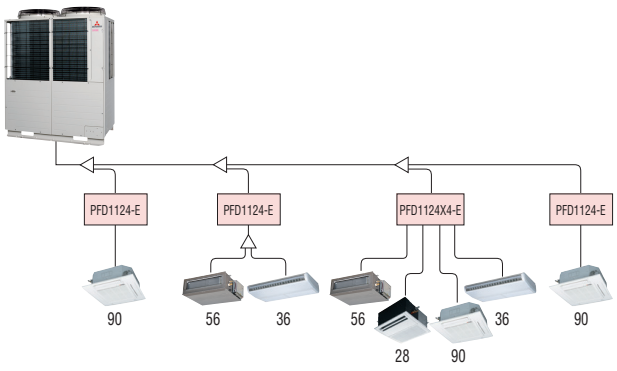
Combination outdoor unit manifold

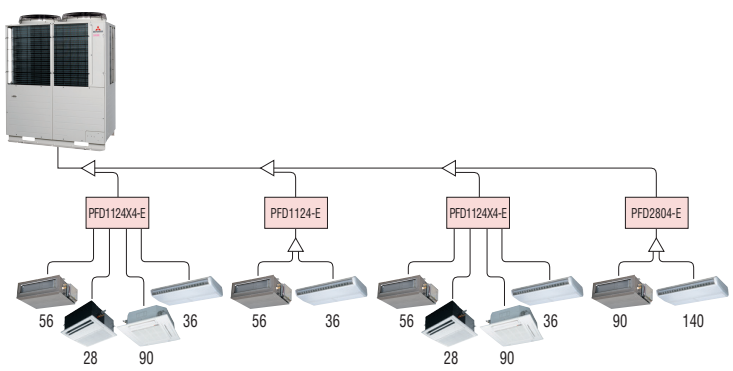
DOS-2A-3-R



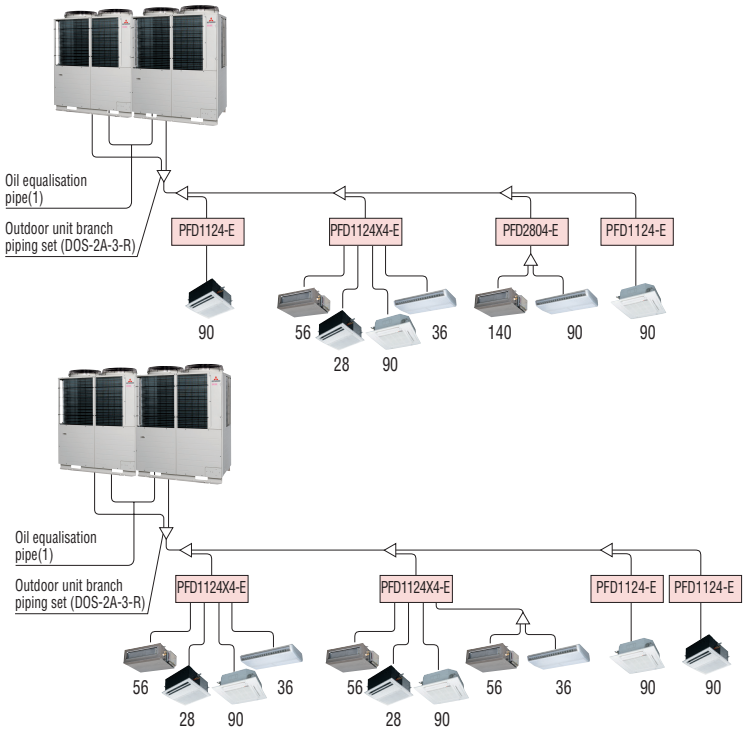


Single outdoor unit piping examples:





Combination outdoor unit piping examples:



Outdoor unit's branch piping set

Outdoor unit	Branch piping set
2 units (for 735~1120)	DOS-2A-3-R
3 units (for 1200~1680)	DOS-3A-3-R

Indoor unit's first branch piping set

Total capacity of indoor units	Branch piping set
~179	DIS-22-1-RG
180~370	DIS-180-1-RG
371~539	DIS-371-2-RG
540~	DIS-540-2-RG

For Down Stream of PFD box

Total capacity of indoor units	Branch piping set
~179	DIS-22-1G
180~370	DIS-180-1G
371~539	DIS-371-1G
540~	DIS-540-3

Electrical wiring – power supply

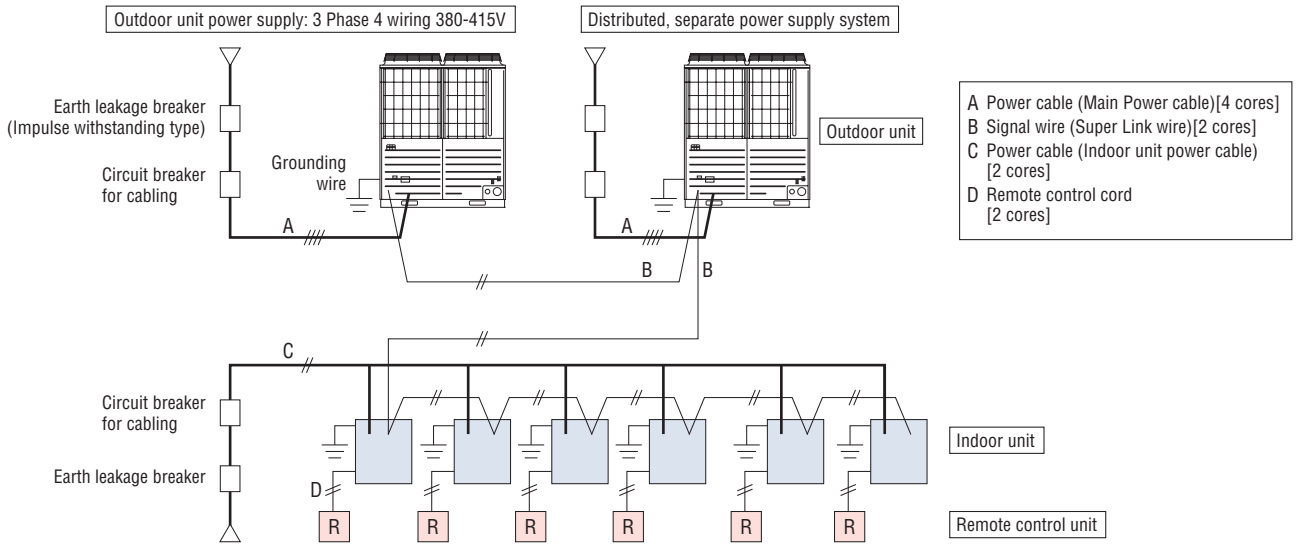
KXZ has greatly simplified wiring requirements utilising a 'polarity-free' two wire control loop connecting the indoor units.

Power wiring

Cables can be laid through the front, right, left or bottom of the outdoor unit casing.

Separate power supplies should be used for the outdoor unit (3Phase) and the indoor units (1Phase).

Only control wiring is connected from outdoor to indoor unit.



Indoor unit power supply: Single Phase 220-240V

CAUTION

If the earth leakage breaker is exclusively for ground fault protection, then you will need to install a circuit breaker for wiring work.

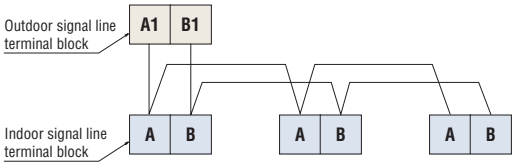
Electrical wiring – control wiring

1. The control wiring is 5 Volt DC, non-polarised, two wire connection notated as 'A1' and 'B1'. This 'AB' wiring connects outdoor unit to indoor unit and indoor unit to indoor unit.
2. This wiring must be a 2-core shielded cable size 0.75mm² or 1.25mm².

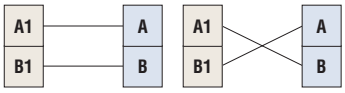
	0.75mm²	1.25mm²
~1000m	YES	YES
1000~1500m	YES	NO

3. We recommend both ends of the shield of the cable are connected to ground (earth) at all the indoor units and outdoor units.
4. When multiple outdoor units are used,
   - Connect the signal cable between indoor and outdoor units and the signal cable between outdoor units belonging to the same refrigerant line to A1 and B1.
   - Connect the signal line between outdoor units on different refrigerant lines to A2 and B2.
5. For current specification of 2-core (AB) wiring, please consult your dealer.

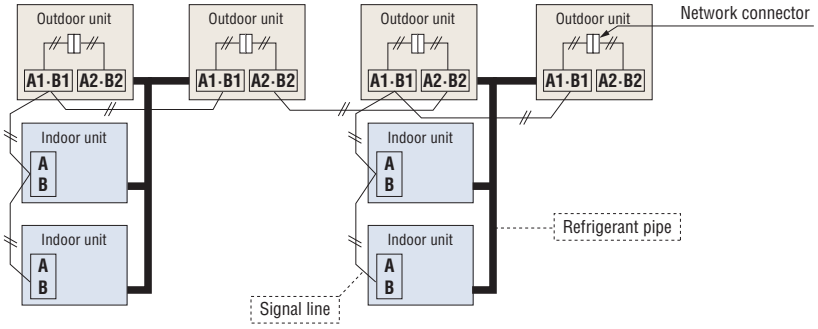
(1) When one outdoor unit is used



○ Indoor and outdoor signal lines do not have a polarity.
Any of the connections in the following illustration can be made.

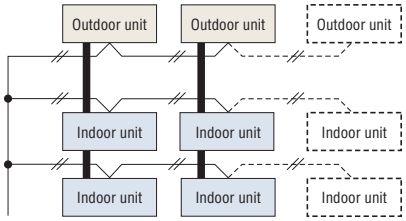


(2) When plural outdoor units are used

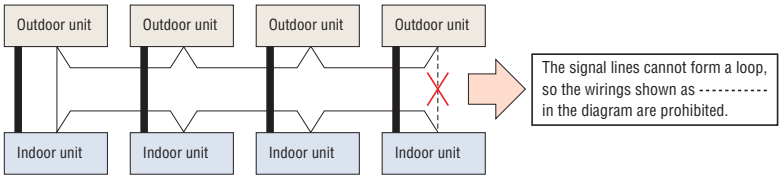


The maximum number of indoor units that can be connected in a system is 128 and it is possible to configure outdoor units and/or indoor units as an outdoor or indoor unit group connected with each other with two wires.

(3) The signal lines can also be connected using the method shown below.



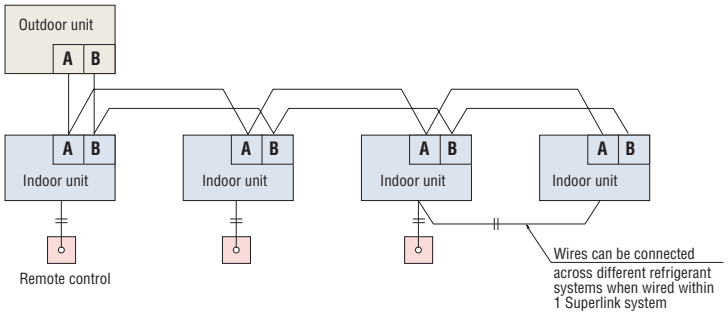
Important ○ Loop wiring prohibited



Remote control wiring specifications

For interconnecting wiring between the remote control and indoor units (XY wiring) use 2-core cable size 0.3mm². The maximum length of 2-core cable is 600 metres. Where the 2-core wiring exceeds 100m, use the wire size detailed on the table below.

Length (m)	Wire size
100 to 200	0.5mm² x 2 core
To 300	0.75mm² x 2 core
To 400	1.25mm² x 2 core
To 600	2.0mm² x 2 core



Indoor units

Benefits Summary

When using RC-EX3A (Remote control), functions with symbol ● are available.
However, for RC-E5 (Remote control), functions with ※ are not available.

Energy Saving	Inverter technology	Inverter control technology functions at high efficiency with smooth operation from high speed to low speed. A smooth sine voltage wave is attained.
	Energy-saving※	Since the capacity is controlled automatically based on the outdoor temperature, energy can be saved without losing comfort.
	Motion sensor※	This sensor detects human activity and shifts the temperature setting according to the amount of activity in the room.
	Home leave operation※	This function ensures that when the room is unoccupied for long periods of time, the unit will maintain a moderate indoor temperature, avoiding extremely hot or cool temperatures.
	Set temperature auto return※	This function allows you to program a preferred set temperature that the unit will return to each time it is operated.
Comfort	Automatic operation	This function automatically selects the required heating or cooling function based on the current room conditions.
	Silent operation	This function allows you to program periods where the unit will operate with reduced noise levels, perfect for night time and an uninterrupted sleep.
	Hi power operation※	Use the high power function to quickly reach your optimum temperature level when you first turn on the unit. This function will operate for a maximum of 15 minutes before returning to normal operation.
Air flow	Flap control system	This function allows you to set the upper and lower limit positions of the flap at each air outlet individually, providing you with complete control over interior air flow.
	Vertical auto swing	The vertical louvers on your unit will move up and down continuously during operation. This function allows you to set the up/down swing position of the louver to your preferred operation angle.
	Draft prevention setting※	Draft Prevention setting provides a comfortable air flow without any draft feeling. Whether cooling or heating a room, the remote con can be used to instantly suppress any warm or cool drafts. This accurately assists how air flow is directed out of the indoor unit.
	Automatic fan speed	The unit's on-board microcomputer continuously monitors the room's air temperature and adjusts the air flow automatically.
Timer	Sleep timer	This function allows you to set a pre-determined amount of time between 30 and 240 minutes that your unit will operate for before switching off.
	Peak-cut timer※	This function lets you to preset the capacity limit during certain periods of the day, minimising energy consumption during peak billing times, thus reducing operation costs.
	Weekly timer	Set your unit to turn on and off automatically on a weekly basis to suit your usual room usage on each day.
Convenient	Function Switch※	From the eight available functions on the unit, this function allows you to set two functions to operate automatically.
	Favourite setting※	Operation mode, set temperature, fan speed and air flow direction automatically adjust to the programmed favourite setting.
	Static pressure adjustment	This is operable when connecting duct type indoor units equipped with the external static pressure adjustment function. It will adjust the airflow accordingly based on the connected duct static pressure.
	Select the language※	Set the language to be displayed on the remote control.
	Air filter	The air filter in the unit traps and removes airborne dust particles and other allergens to provide you with a clean air function
	Filter sign	This warning alerts when the filter needs to be cleaned.
	Outside air intake	This function provides clean fresh air into the room through the external air intake, avoiding the constant recycling of internal
Others	Self diagnostics	The internal microcomputer automatically runs a diagnostic of the system in the event of a malfunction. This enables your authorised dealer to isolate and repair any issues.
	Built in drain pump	The built-in drain pump, allows greater flexibility with installation, offering a great solution for applications with limited space
	Improved serviceability	The fan unit (comprised of impeller and motor) is easily accessible from either the side or bottom of the unit and can be slid out for easy maintenance.

	FDT	FDTC	FDTW	FDTS	FDTQ	FDU	FDUM	FDUT	FDUH	FDK	FDE	FDFW	FDFL	FDFU	FDU-F
															
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
air.	●	● Option	●	●	●	●	●	●	●						●
	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
.	●	●	●	●	●	● ⋆1	●	●	● Option						● ⋆2
						●	●								

⋆1 : Except 224 • 280 ⋆2 : Except 1800 • 2400

Ceiling Cassette -4way- FDT

Model No.

FDT28KXZE1
FDT36KXZE1
FDT45KXZE1
FDT56KXZE1
FDT71KXZE1
FDT90KXZE1
FDT112KXZE1
FDT140KXZE1
FDT160KXZE1

Draft Prevention Panel (Option)

Remote control (option)

Wired

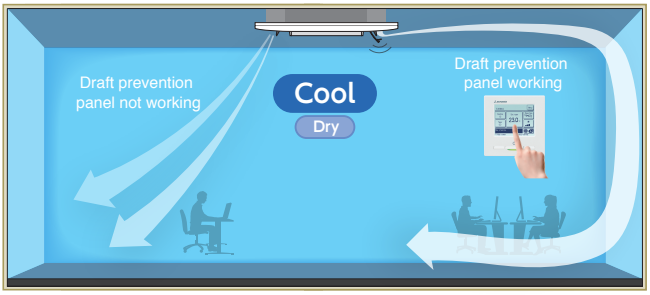
RC-EX3A RC-E5 RCH-E3

Wireless

RCN-T-5AW-E2

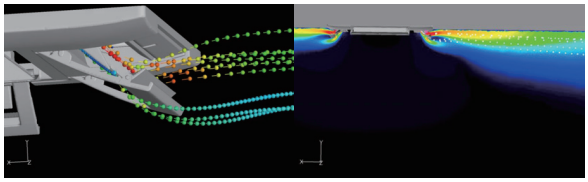
Draft Prevention Panel (Option)

Draft Prevention Panel prevents cold / hot draft being blown directly on the user.
It is possible to set Draft Prevention Panel for each air outlet.

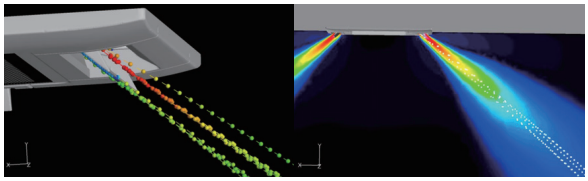


User can position panels by using the remote controller only (RC-EX3A, RCN-T-5AW-E2) when Draft Prevention Panel is available.

Advanced airflow control technology cultivated through aircraft development.



Draft Prevention Panel working

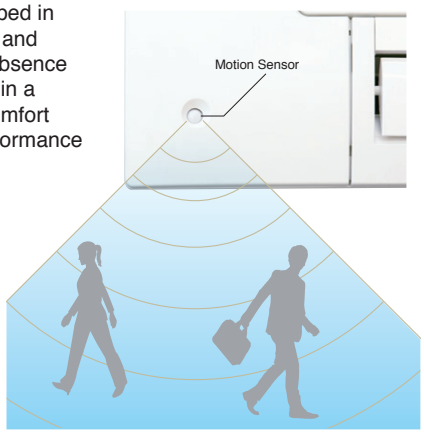


Draft Prevention Panel placed at off position

Motion Sensor (Option)

Motion sensor is equipped in the corner of the panel and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-T-5W-E



Improve the aerodynamic performance of the unit

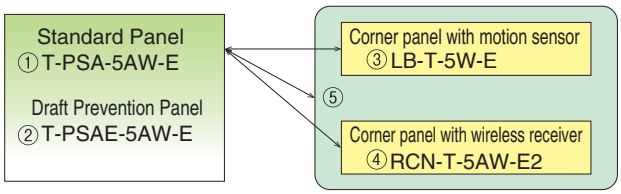
New designed component has better aerodynamic perfromance and achieve lower noise.

New design turbo fan

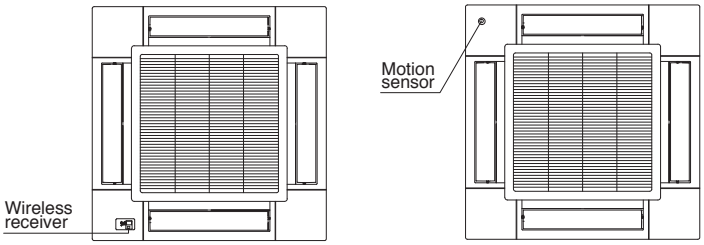
Fan guard (standard equipment)

Panel select pattern (Option)

8 patterns of panel are avilable.



Installation position of Wireless kit and Motion sensor kit

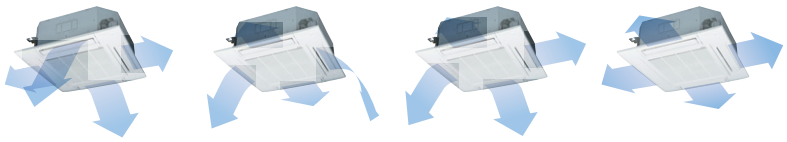


*Wireless receiver and Motion sensor can be installed to the position as shown

① Standard Panel only
①+③ Standard Panel with corner panel with motion sensor
①+④ Standard Panel with corner panel with wireless receiver
①+⑤ Standard Panel with corner panel with motion sensor & corner panel with wireless receiver
② Draft Prevention Panel only
②+③ Draft Prevention Panel with corner panel with motion sensor
②+④ Draft Prevention Panel with corner panel with wireless receiver
②+⑤ Draft Prevention Panel with corner panel with motion sensor & corner panel with wireless receiver

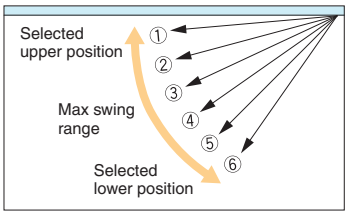
Individual flap control system

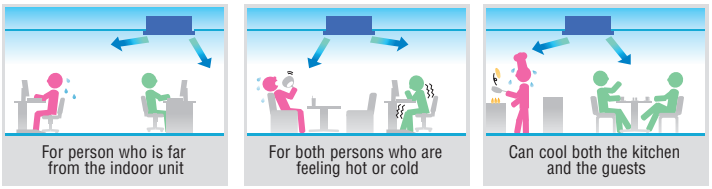
According to room conditions, four directions of air flow can be controlled individually by utilizing the flap control system.
Individual flap control is available even after installation.



Flap can swing within an upper and lower flap range position within can be selected with a wired remote control.

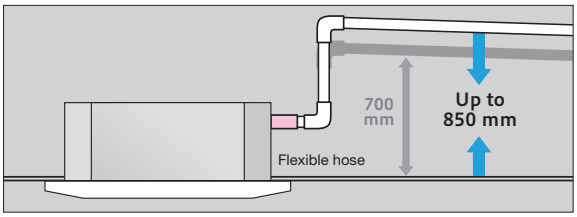
※The wireless remote control is not applicable to the Individual flap control system.





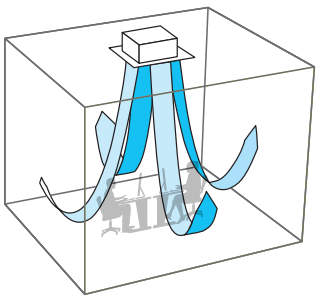
850mm Drain Pump

Drain can be discharged upwards by 850mm from the ceiling surface. It allows a piping layout with a high degree of freedom. Depending on the installation location and 185mm flexible hose as a standard equipment supports easy workability.



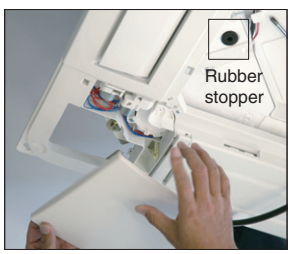
Suitable for High ceilings

The Powerful blowout of ultra high tap carry comfortable air flow to foot even in high ceiling. It is ideal for high ceiling offices and stores, etc., with a wide, uniform air flow throughout the room.

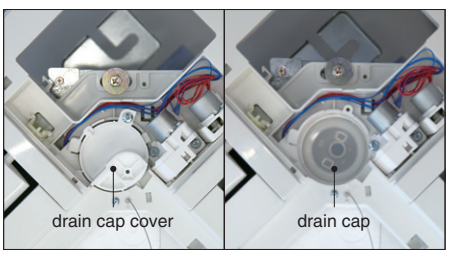


Easy check of drain pan

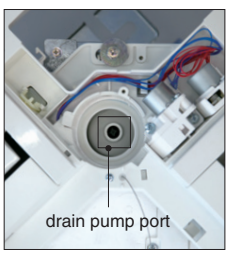
Easy inspection of the condition of the drain pan is possible by removing corner lid only.



Remove corner lid.



Remove drain cap cover and check the condition.
It is necessary to clean-up, firstly remove the rubber stopper to drain water out and secondly remove the drain cap.



Clean up the area around the drain pump port.

Specifications

Item		Model	FDT28KXZE1	FDT36KXZE1	FDT45KXZE1	FDT56KXZE1	FDT71KXZE1
Nominal cooling capacity		kW	2.8	3.6	4.5	5.6	7.1
Nominal heating capacity		kW	3.2	4.0	5.0	6.3	8.0
Power source			1 Phase 220-240V, 50Hz				
Power consumption	Cooling	kW	0.04-0.04			0.07-0.07	0.08-0.08
	Heating		0.04-0.04			0.07-0.07	0.08-0.08
Sound power level		dB(A)	49		50	55	62
Sound pressure level		dB(A)	P-Hi:38 Hi:33 Me:30 Lo:28		P-Hi:38 Hi:33 Me:31 Lo:29	P-Hi:44 Hi:33 Me:31 Lo:29	P-Hi:47 Hi:35 Me:32 Lo:28
Exterior dimensions H x W x D		mm	Unit:236x840x840 Panel:35x950x950				
Net weight		kg	Unit:20 Standard Panel:5			Unit:21.5 Standard Panel:5	
Air flow		m³/min	P-Hi:20 Hi:14 Me:12 Lo:10	P-Hi:20 Hi:14 Me:12 Lo:10	P-Hi:20 Hi:15 Me:13 Lo:10	P-Hi:26 Hi:16 Me:13 Lo:11	P-Hi:28 Hi:17 Me:14 Lo:12
Outside air intake			Possible				
Panel			T-PSA-5AW-E, T-PSAE-5AW-E				
Air filter, Q'ty			Pocket Plastic net x1 (Washable)				
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-T-5AW-E2				
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")

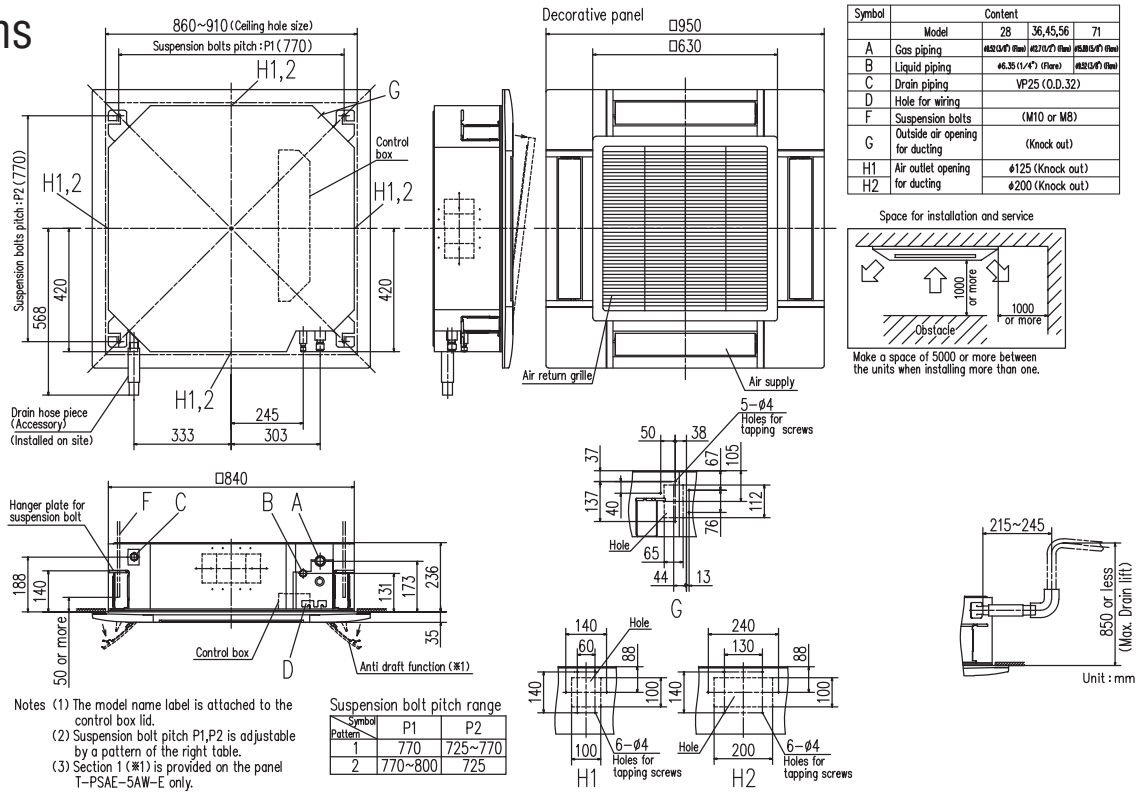
Item		Model	FDT90KXZE1	FDT112KXZE1	FDT140KXZE1	FDT160KXZE1
Nominal cooling capacity		kW	9.0	11.2	14.0	16.0
Nominal heating capacity		kW	10.0	12.5	16.0	18.0
Power source			1 Phase 220-240V, 50Hz			
Power consumption	Cooling	kW	0.13-0.13	0.14-0.14		
	Heating		0.13-0.13	0.14-0.14		
Sound power level		dB(A)	65	66		
Sound pressure level		dB(A)	P-Hi:49 Hi:38 Me:36 Lo:31	P-Hi:49 Hi:39 Me:37 Lo:31	P-Hi:49 Hi:42 Me:39 Lo:32	P-Hi:49 Hi:42 Me:39 Lo:33
Exterior dimensions H x W x D		mm	Unit:298x840x840 Panel:35x950x950			
Net weight		kg	Unit:25 Standard Panel:5			
Air flow		m³/min	P-Hi:37 Hi:25 Me:22 Lo:15	P-Hi:38 Hi:26 Me:23 Lo:17	P-Hi:38 Hi:28 Me:25 Lo:18	P-Hi:38 Hi:29 Me:26 Lo:19
Outside air intake			Possible			
Panel			T-PSA-5AW-E, T-PSAE-5AW-E			
Air filter, Q'ty			Pocket Plastic net x1 (Washable)			
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-T-5AW-E2			
Installation data Refrigerant piping size		mm(in)	Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")			

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

Dimensions

All measurements in mm.

FDT28KXZE1
36KXZE1
45KXZE1
56KXZE1
71KXZE1



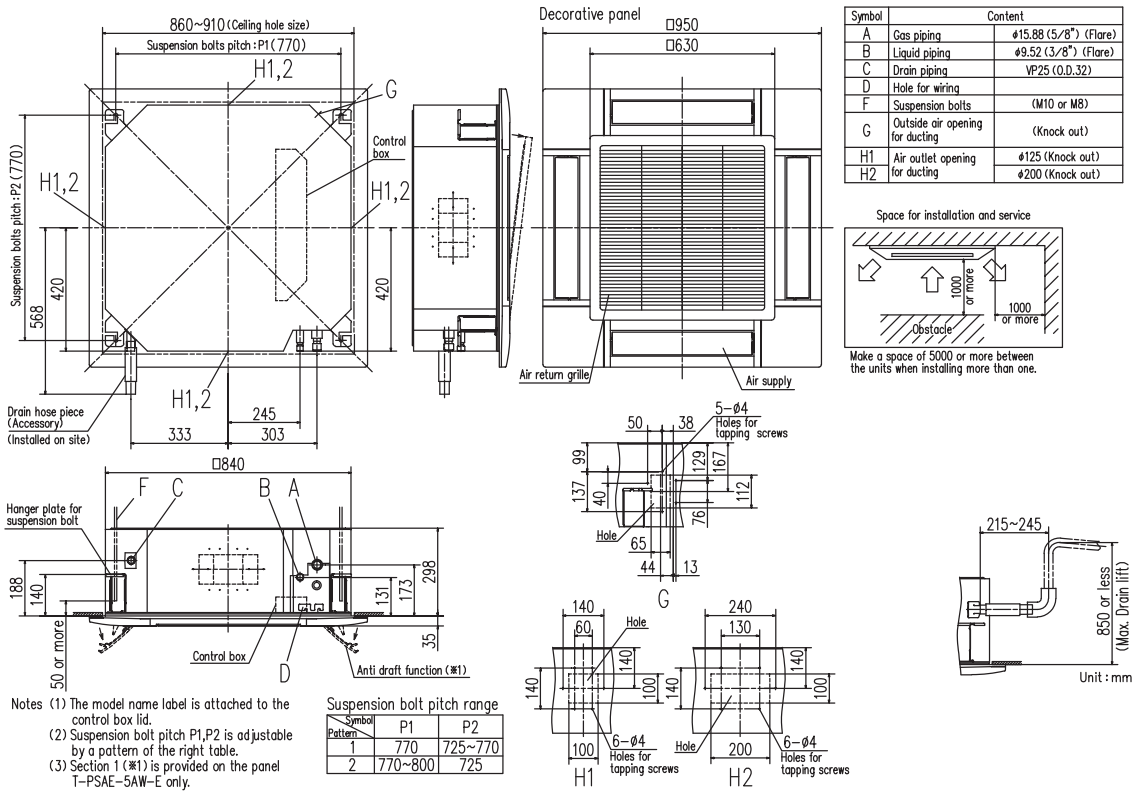
Symbol	Content			
	Model	28	36,45,56	71
A	Gas piping	ø12.7 (1/2") (Flare)	ø12.7 (1/2") (Flare)	ø15.88 (5/8") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)	ø6.35 (1/4") (Flare)	ø9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D.32)		
D	Hole for wiring			
F	Suspension bolts	(M10 or M8)		
G	Outside air opening for ducting	(Knock out)		
H1	Air outlet opening for ducting	ø125 (Knock out)		
H2		ø200 (Knock out)		

Notes (1) The model name label is attached to the control box lid.
(2) Suspension bolt pitch P1,P2 is adjustable by a pattern of the right table.
(3) Section 1 (※1) is provided on the panel T-PSAE-5AW-E only.

Suspension bolt pitch range

Symbol / Pattern	P1	P2
1	770	725~770
2	770~800	725

FDT90KXZE1
112KXZE1
140KXZE1
160KXZE1



Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D.32)
D	Hole for wiring	
F	Suspension bolts	(M10 or M8)
G	Outside air opening for ducting	(Knock out)
H1	Air outlet opening for ducting	ø125 (Knock out)
H2		ø200 (Knock out)

Notes (1) The model name label is attached to the control box lid.
(2) Suspension bolt pitch P1,P2 is adjustable by a pattern of the right table.
(3) Section 1 (※1) is provided on the panel T-PSAE-5AW-E only.

Suspension bolt pitch range

Symbol / Pattern	P1	P2
1	770	725~770
2	770~800	725

Ceiling Cassette -4way Compact FDTC

Draft Prevention Panel (option)

Remote control (option)

Wired

RC-EX3A RC-E5 RCH-E3

Wireless

RCN-TC-5AW-E2

Model No.

FDTC15KXZE1
FDTC22KXZE1
FDTC28KXZE1
FDTC36KXZE1
FDTC45KXZE1
FDTC56KXZE1

European design & Flat panel

Compact Design

□700mm → □620mm

It's only 14kg
Height of thin panel and main body is only 248 mm allowing it to be a very easy installation.

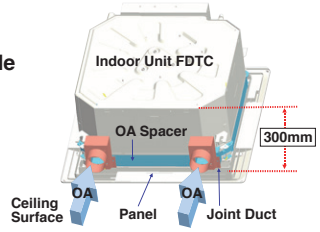
Integrated ceiling system design 600x600

A grille designed with a unique structure and a clean white panel that blends with the room. This design was invented by zweigrad GmbH & Co. KG in Germany.

Taking OA (Outside Air) into inside

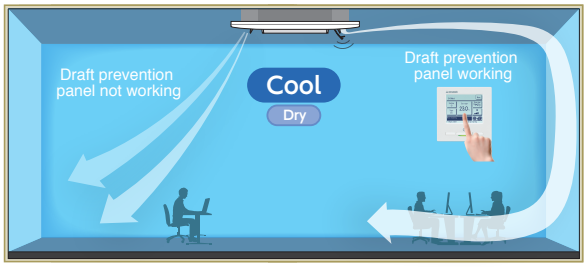
Fresh air can be taken in without optional parts. When the fresh air is insufficient, optional parts can be used.

OA Spacer TC-OAS-E2(option)
Joint Duct TC-OAD-E(option)



Draft Prevention Panel (Option)

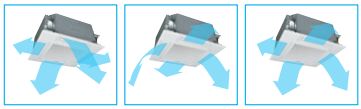
Draft Prevention Panel prevents cold/hot draft being blown directly on the user. It is possible to set Draft Prevention Panel for each air outlet.



User can position panels by using the remote controller only (RC-EX3A, RCN-TC-5AW-E2) when Draft Prevention Panel is available.

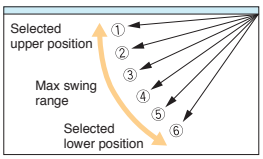
Individual flap control system

According to room temperature conditions, four directions of air flow can be controlled individually by following Flap control system. Individual flap control is available even after installation.



The flap can swing within the range of upper and lower flap position selected with wired remote control.

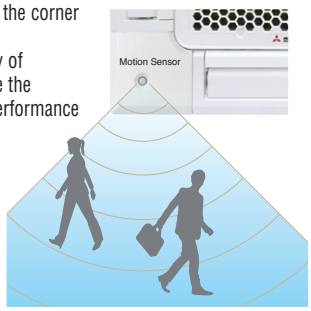
※The wireless remote control is not applicable to the Individual flap control system.



Motion Sensor (Option)

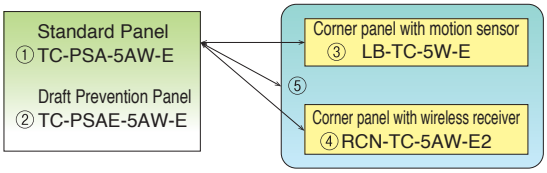
Motion sensor is equipped in the corner of the panel and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-TC-5W-E



Panel select pattern (Option)

8 patterns of panel are available. Please refer to P73.



850mm Drain Pump

Drain can be discharged upward by 850 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.

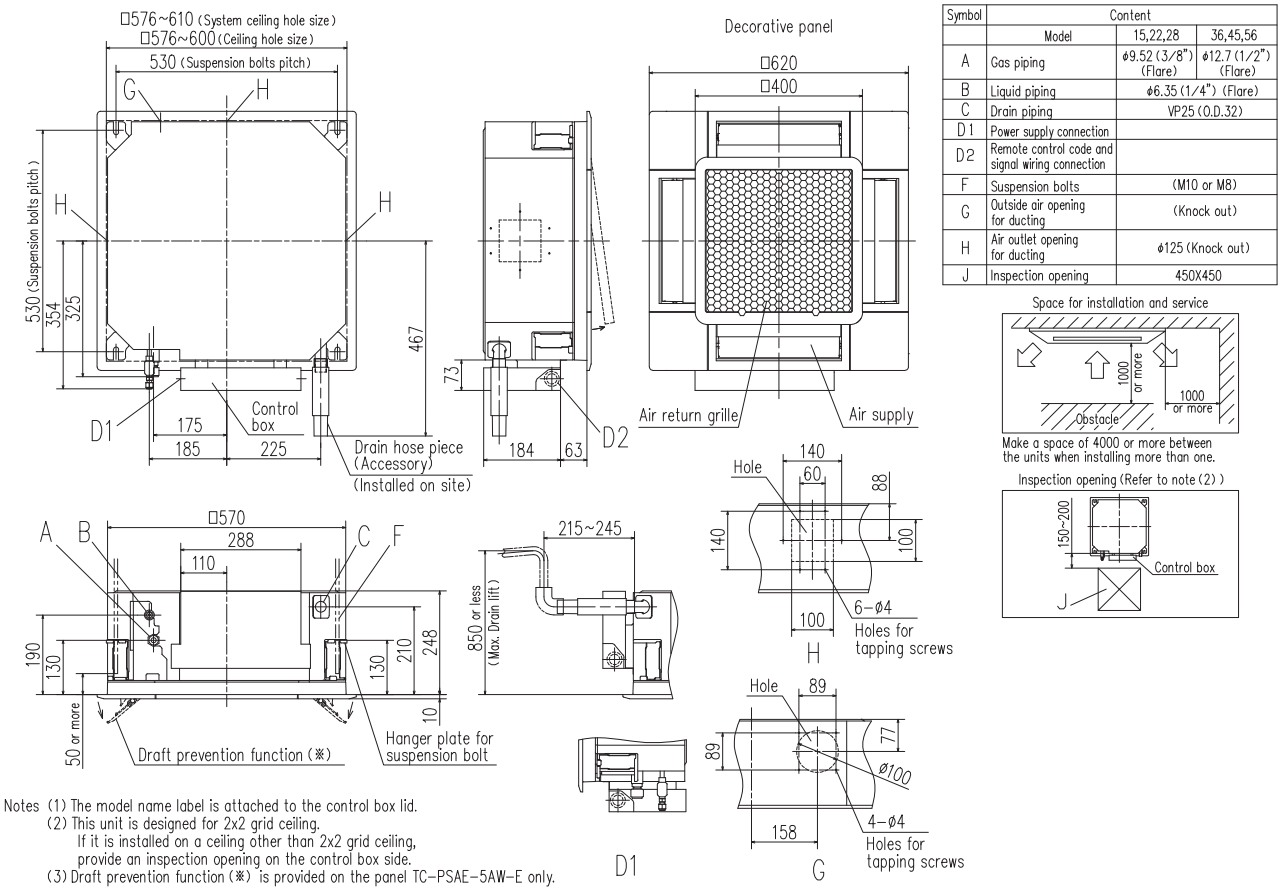
Specifications

Item		Model	FDTC15KXZE1	FDTC22KXZE1	FDTC28KXZE1	FDTC36KXZE1	FDTC45KXZE1	FDTC56KXZE1
Nominal cooling capacity		kW	1.5	2.2	2.8	3.6	4.5	5.6
Nominal heating capacity		kW	1.7	2.5	3.2	4.0	5.0	6.3
Power source			1 Phase 220-240V, 50Hz					
Power consumption	Cooling	kW	0.03-0.03			0.04-0.04	0.05-0.05	0.06-0.06
	Heating	kW	0.03-0.03			0.04-0.04	0.05-0.05	0.06-0.06
Sound power level		dB(A)	Cooling:47 Heating:46	49		Cooling:54 Heating:53	Cooling:58 Heating:57	60
Sound pressure level	Cooling	dB(A)	P-Hi:33 Hi:30 Me:28 Lo:25	P-Hi:35 Hi:32 Me:29 Lo:25		P-Hi:39 Hi:36 Me:31 Lo:26	P-Hi:43 Hi:39 Me:36 Lo:28	P-Hi:47 Hi:43 Me:39 Lo:31
	Heating	dB(A)	P-Hi:33 Hi:30 Me:26 Lo:22	P-Hi:35 Hi:32 Me:29 Lo:25		P-Hi:39 Hi:36 Me:31 Lo:26	P-Hi:43 Hi:39 Me:36 Lo:28	P-Hi:47 Hi:43 Me:39 Lo:31
Exterior dimensions H x W x D		mm	Unit:248x570x570 Panel:10x620x620					
Net weight		kg	Unit:12.5 Standard Panel:2.5	Unit:13 Standard Panel:2.5		Unit:14 Standard Panel:2.5		
Air flow	Cooling	m³/min	P-Hi:8 Hi:7 Me:6 Lo:5	P-Hi:9 Hi:8 Me:7 Lo:6		P-Hi:10 Hi:9 Me:8 Lo:6	P-Hi:12 Hi:10 Me:9 Lo:7	P-Hi:14 Hi:12 Me:10 Lo:8
	Heating	m³/min	P-Hi:8 Hi:7 Me:6 Lo:5	P-Hi:9 Hi:8 Me:7 Lo:6		P-Hi:10 Hi:9 Me:8 Lo:6	P-Hi:12 Hi:10 Me:9 Lo:7	P-Hi:14 Hi:12 Me:10 Lo:8
Outside air intake			Possible					
Panel			TC-PSA-5AW-E, TC-PSAE-5AW-E					
Air filter, Q'ty			Pocket Plastic net x1 (Washable)					
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-TC-5AW-E2					
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")			Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")		

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

Dimensions

All measurements in mm.



Symbol	Content		
	Model	15,22,28	36,45,56
A	Gas piping	ø9.52 (3/8") (Flare)	ø12.7 (1/2") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)	
C	Drain piping	VP25 (O.D.32)	
D1	Power supply connection		
D2	Remote control code and signal wiring connection		
F	Suspension bolts	(M10 or M8)	
G	Outside air opening for ducting	(Knock out)	
H	Air outlet opening for ducting	ø125 (Knock out)	
J	Inspection opening	450X450	

Notes (1) The model name label is attached to the control box lid.
(2) This unit is designed for 2x2 grid ceiling.
If it is installed on a ceiling other than 2x2 grid ceiling, provide an inspection opening on the control box side.
(3) Draft prevention function (※) is provided on the panel TC-PSAE-5AW-E only.

Ceiling Cassette -2way- FDTW

FDTW28~71

FDTW90~140

Model No.

FDTW28KXE6F	FDTW90KXE6F
FDTW45KXE6F	FDTW112KXE6F
FDTW56KXE6F	FDTW140KXE6F
FDTW71KXE6F	

Remote control (option)

Wired

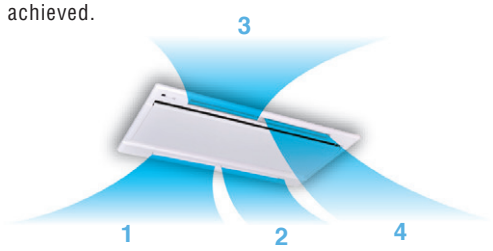
RC-EX3A RC-E5 RCH-E3

Wireless

RCN-TW-E2

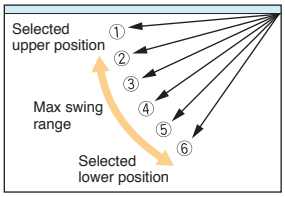
Individual flap control system

According to room temperature conditions, four directions air flow can be controlled individually by flap control system.
Due to optimization of outlet design of air flow our new advanced technology, sufficient air flow is secured and long reach of air flow is achieved.



The flap can swing within the range of upper and lower flap position selected with wired remote control.

* The wireless remote control is not applicable to the individual flap control system.



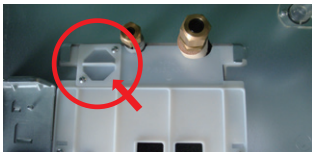
750mm Drain Pump

Drain can be discharged upward by 750mm 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.

Installation workability

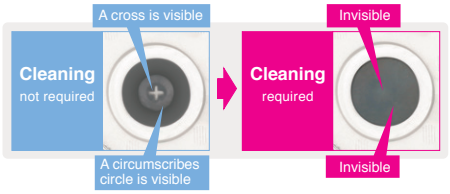
Drainage spout

Drainage flow test can be done easily by use of this drainage spout.



Transparent access hole to drain pan

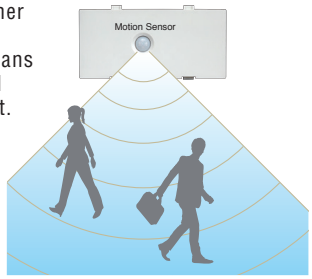
Condition of the bottom of a drain pan can be checked through this transparent access hole without removing drain pan.



Motion Sensor NEW (Option)

Motion sensor is equipped in the corner of the panel and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-TW-6W



Specifications

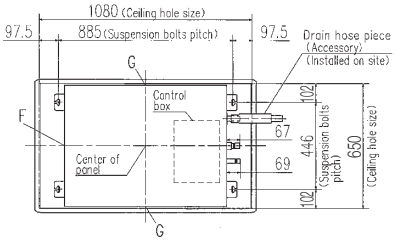
Item		Model	FDTW28KXE6F	FDTW45KXE6F	FDTW56KXE6F	FDTW71KXE6F	FDTW90KXE6F	FDTW112KXE6F	FDTW140KXE6F
Nominal cooling capacity		kW	2.8	4.5	5.6	7.1	9.0	11.2	14.0
Nominal heating capacity		kW	3.2	5.0	6.3	8.0	10.0	12.5	16.0
Power source			1 Phase 220-240V, 50Hz						
Power consumption	Cooling	kW	0.09-0.09	0.10-0.10		0.14-0.14	0.19-0.19		
	Heating		0.09-0.09	0.10-0.10		0.14-0.14	0.19-0.19		
Sound power level		dB(A)	58				65	—	
Sound pressure level		dB(A)	P-Hi:42 Hi:38 Me:34 Lo:31				P-Hi:48 Hi:45 Me:41 Lo:37		
Exterior dimensions H x W x D		mm	Unit:325x820x620 Panel:20x1120x680				Unit:325x1535x620 Panel:20x1835x680		
Net weight		kg	Unit:20 Panel:8.5	Unit:21 Panel:8.5		Unit:23 Panel:8.5	Unit:35 Panel:13		
Air flow		m³/min	P-Hi:14.5 Hi:12 Me:10 Lo:9				P-Hi:31 Hi:27 Me:23 Lo:20		
Outside air intake			Possible						
Panel			TW-PSA-26W-E				TW-PSA-46W-E		
Air filter, Q'ty			Pocket Plastic net x2 (Washable)				Pocket Plastic net x3 (Washable)		
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-TW-E2						
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")		Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")			

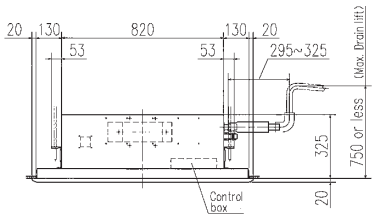
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

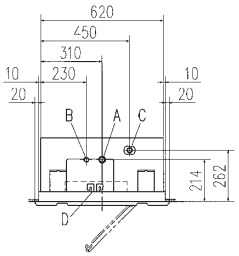
Dimensions

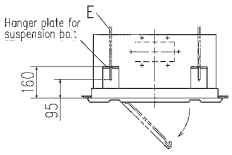
All measurements in mm.

FDTW28KXE6F, 45KXE6F, 56KXE6F, 71KXE6F





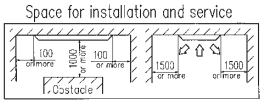




Symbol	Content			
	Model	28	45,56	71
A	Gas piping	ϕ9.52 (3/8") (Flare)	ϕ12.7 (1/2") (Flare)	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)		ϕ9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D. 32)		
D	Hole for wiring			
E	Suspension bolts	(M10)		
F	Outside air opening for ducting	(Knock out)		
G	Air outlet opening for ducting	(Knock out)		

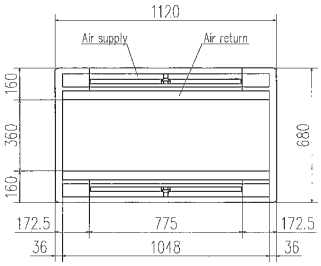
Notes (1) The model name label is attached on the lid of the control box.

Space for installation and service

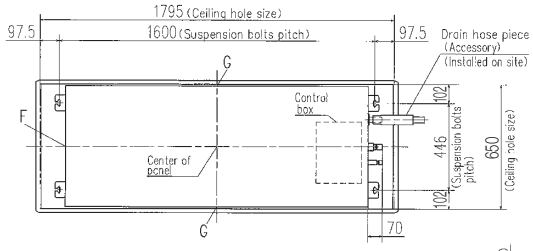


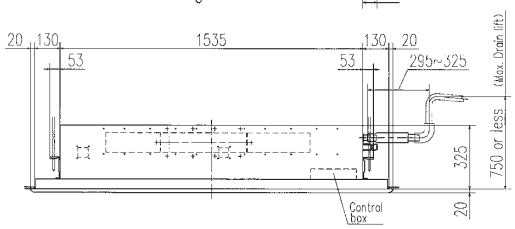
Make a space of 4000 or more between the units when installing more than one.

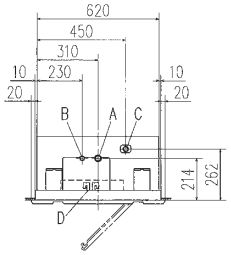
Decorative panel

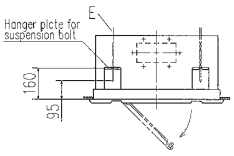


FDTW90KXE6F, 112KXE6F, 140KXE6F





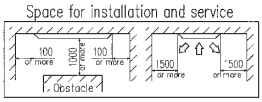




Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D. 32)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)

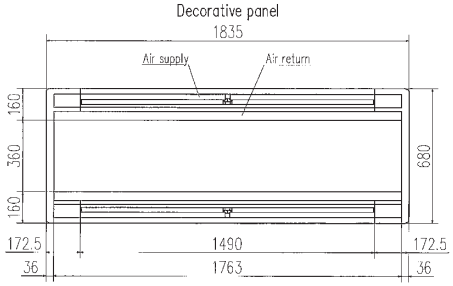
Notes (1) The model name label is attached on the lid of the control box.

Space for installation and service



Make a space of 5000 or more between the units when installing more than one.

Decorative panel



Ceiling Cassette -1way- FDTS

Model No.
FDTS45KXE6F
FDTS71KXE6F

Remote control (option)

Wired

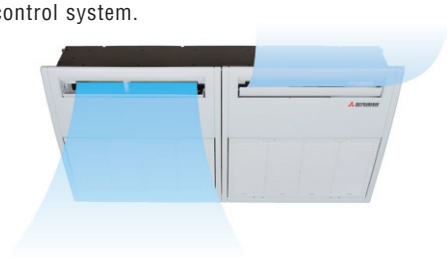
RC-EX3A RC-E5 RCH-E3

Wireless

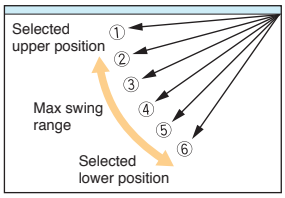
RCN-TS-E2

Individual flap control system

Two directions of air flow can be controlled individually by flap control system.



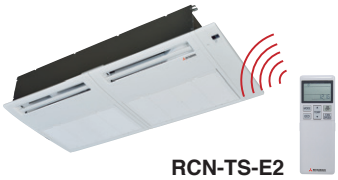
The flap can swing within the range of upper and lower flap position selected with wired remote control.



*The wireless remote control is not applicable to the individual flap control system.

Wireless remote control

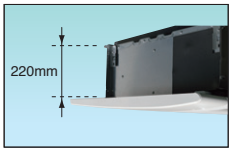
For wireless remote control simply attach an additional panel with infrared receiver on the right side of the main decorative panel.



RCN-TS-E2

Compact design

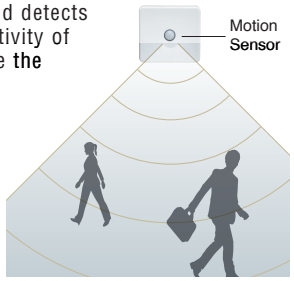
Indoor unit size (W:1,150 x D:565) brings easy installation for 1,200 x 600 ceiling and Panel size (1,250 x 650) is suitable for 1,200 x 600 ceiling. Height is the industry's lowest height level 220mm and weight is 27/28kg only.



Motion Sensor NEW (Option)

Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-KIT



600mm Drain Pump

Drain can be discharged upward by 600mm 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.

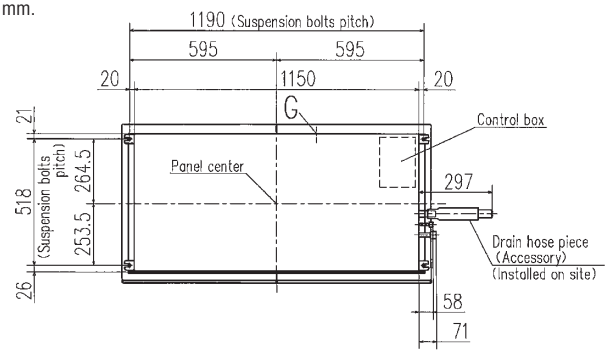
Specifications

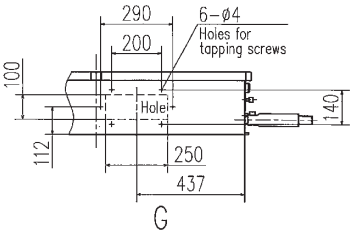
Item		Model	FDTS45KXE6F	FDTS71KXE6F
Nominal cooling capacity		kW	4.5	7.1
Nominal heating capacity		kW	5.0	8.0
Power source			1 Phase 220-240V, 50Hz	
Power consumption	Cooling	kW	0.04-0.04	0.09-0.09
	Heating		0.04-0.04	0.09-0.09
Sound power level		dB(A)	60	61
Sound pressure level		dB(A)	P-Hi:42 Hi:40 Me:38 Lo:35	P-Hi:49 Hi:46 Me:41 Lo:36
Exterior dimensions H x W x D		mm	Unit:220x1150x565 Panel:35x1250x650	
Net weight		kg	Unit:27 Panel:5	Unit:28 Panel:5
Air flow		m³/min	P-Hi:13 Hi:12 Me:11 Lo:9.5	P-Hi:17 Hi:15 Me:12 Lo:9.5
Outside air intake			Possible	
Panel			TS-PSA-3AW-E	
Air filter, Q'ty			Pocket Plastic net x2 (Washable)	
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-TS-E2	
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")	Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")

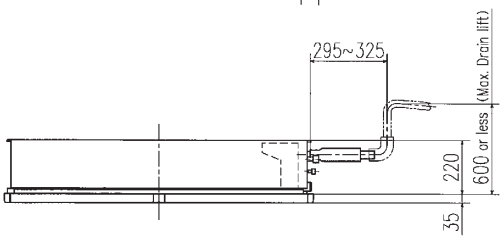
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

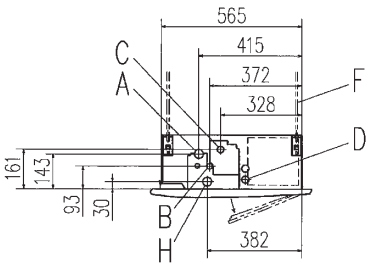
Dimensions

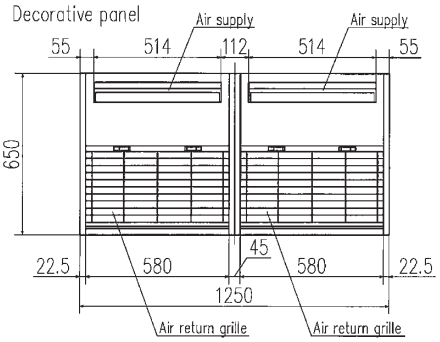
All measurements in mm.

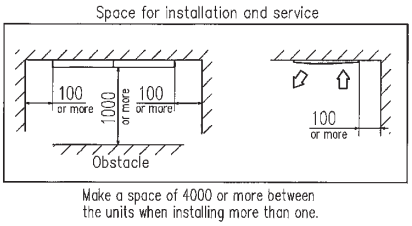












Make a space of 4000 or more between the units when installing more than one.

Symbol	Content		
	Model	45	71
A	Gas piping	ϕ12.7 (1/2") (Flare)	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	ϕ9.52 (3/8") (Flare)
C	Drain piping	VP25 (O.D.32)	
D	Hole for wiring		
F	Suspension bolts	(M10)	
G	Outside air opening for ducting	(Knock out)	
H	Drain piping (Gravity drainage)	VP25 (I.D.25 , O.D.32)	

Ceiling Cassette -1way Compact- FDTQ

Model No.
FDTQ22KXE6F
FDTQ28KXE6F
FDTQ36KXE6F

Fits into standard 600 x 600 ceiling

Remote control (option)

Wired

RC-EX3A RC-E5 RCH-E3

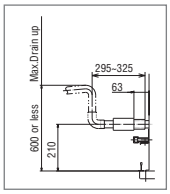
Wireless

RCN-KIT4-E2

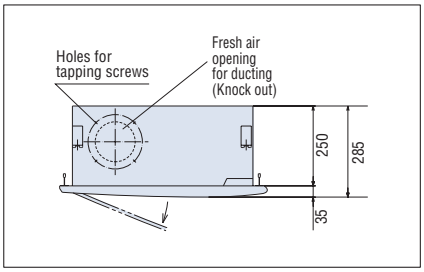
Compact design

- **Comfortable effective cooling for small rooms, with low fan speed air flow at just 5.4m³/min.**

Optional wide panel shown for solid ceiling



Condensate drain pump included as standard



Ultra slim design at just 250mm above the ceiling

Specifications

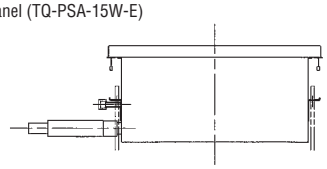
Item		Model	FDTQ22KXE6F				FDTQ28KXE6F				FDTQ36KXE6F			
Panel Name			Direct blow panel		Duct panel		Direct blow panel		Duct panel		Direct blow panel		Duct panel	
Panel mode (Option)			TQ-PSA-15W-E	TQ-PSB-15W-E	QR-PNA-14W-ER	QR-PNB-14W-ER	TQ-PSA-15W-E	TQ-PSB-15W-E	QR-PNA-14W-ER	QR-PNB-14W-ER	TQ-PSA-15W-E	TQ-PSB-15W-E	QR-PNA-14W-ER	QR-PNB-14W-ER
Nominal cooling capacity		kW	2.2				2.8				3.6			
Nominal heating capacity		kW	2.5				3.2				4.0			
Power source			1 Phase 220-240V, 50Hz											
Power consumption	Cooling	kW	0.05-0.07				0.05-0.07				0.05-0.07			
	Heating		0.05-0.07				0.05-0.07				0.05-0.07			
Sound power level		dB(A)	60											
Sound pressure level		dB(A)	P-Hi:45Hi:41 Me:38 Lo:33				P-Hi:45 Hi:41 Me:38 Lo:33				P-Hi:45 Hi:41 Me:38 Lo:33			
Exterior dimensions H x W x D	Unit	mm	250x570x570				250x570x570				250x570x570			
	Panel		35x625x650	35x780x650	35x625x650	35x780x650	35x625x650	35x780x650	35x625x650	35x780x650	35x625x650	35x780x650	35x625x650	35x780x650
Net weight		kg	Unit:23 Panel:2.5	Unit:23 Panel:3	Unit:23 Panel:2.5	Unit:23 Panel:3	Unit:23 Panel:2.5	Unit:23 Panel:3	Unit:23 Panel:2.5	Unit:23 Panel:3	Unit:23 Panel:2.5	Unit:23 Panel:3	Unit:23 Panel:2.5	Unit:23 Panel:3
Air flow		m³/min	P-Hi:8 Hi:7 Me:6 Lo:5				P-Hi:8 Hi:7 Me:6 Lo:5				P-Hi:8 Hi:7 Me:6 Lo:5			
Outside air intake			Possible											
Air filter, Q'ty			Pocket Plastic net x1 (Washable)											
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2											
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")								Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			

1. The data are based on the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

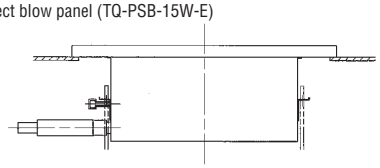
Dimensions

All measurements in mm.

Direct blow panel (TQ-PSA-15W-E)

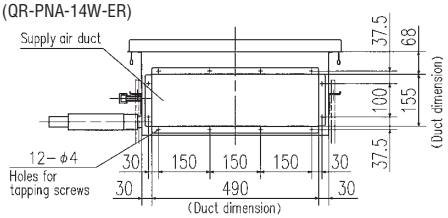


Direct blow panel (TQ-PSB-15W-E)

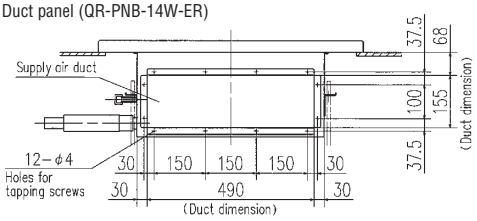


Symbol	Content		
	Model	FDTQ22KXE6F, 28KXE6F	FDTQ36KXE6F
A	Gas piping	ϕ9.52 (3/8") (Flare)	ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	
C	Drain piping	VP 25 (O.D. 32)	
D	Hole for wiring	ϕ30	
E	Suspension bolts	M10	
F1,2	Outside air opening for ducting	(Knock out)	

Duct panel (QR-PNA-14W-ER)



Duct panel (QR-PNB-14W-ER)

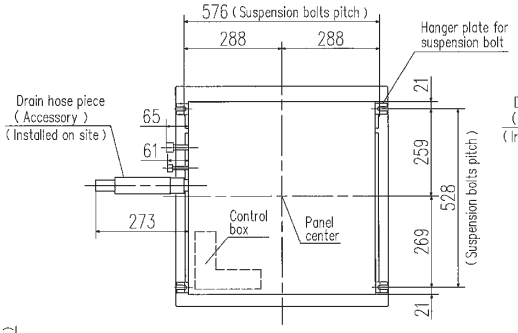


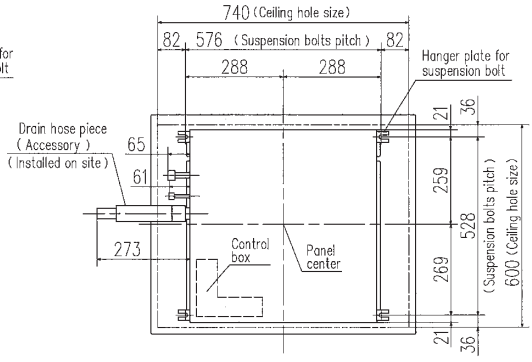
Notes

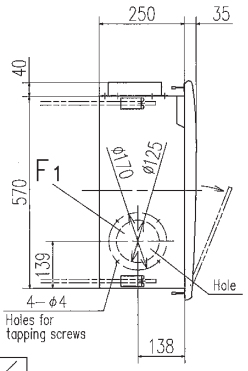
(1) The model name label is attached on the fan case inside the air return grille.

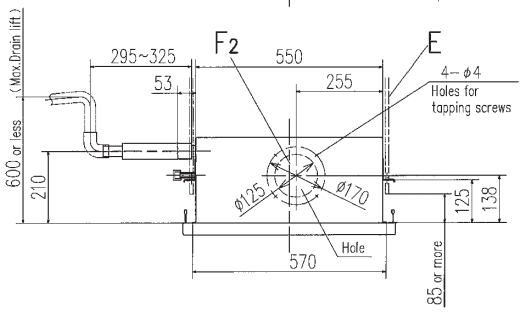
(2) This unit is designed for 2X2 grid ceiling.

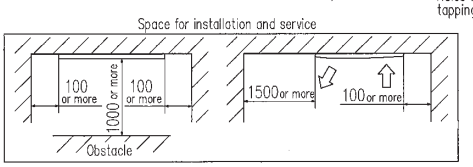
★ In case of Direct blow panel





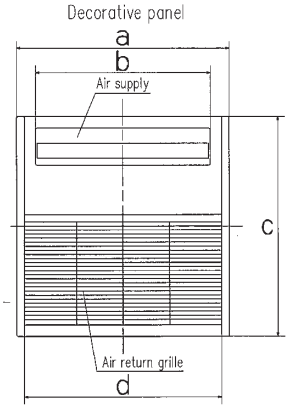




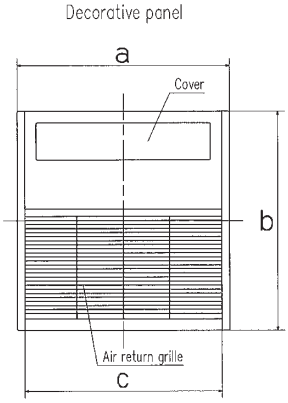


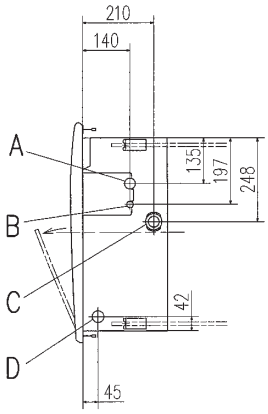
Make a space of 3000 or more between the units when installing more than one.

Decorative panel



Decorative panel





Dimension Table

Unit:mm

model	a	b	c	d
TQ-PSA-15W-E	625	514	650	580
TQ-PSB-15W-E	780	514	650	580

Dimension Table

Unit:mm

model	a	b	c
QR-PNA-14W-ER	625	650	580
QR-PNB-14W-ER	780	650	580

Duct Connected -High Static Pressure- FDU

Model No.

FDU45KXE6F
FDU56KXE6F
FDU71KXE6F
FDU90KXE6F
FDU112KXE6F
FDU140KXE6F
FDU160KXE6F

Model No.

FDU224KXZE1
FDU280KXZE1

Remote control (option)

Wired



RC-EX3A RC-E5 RCH-E3

Wireless

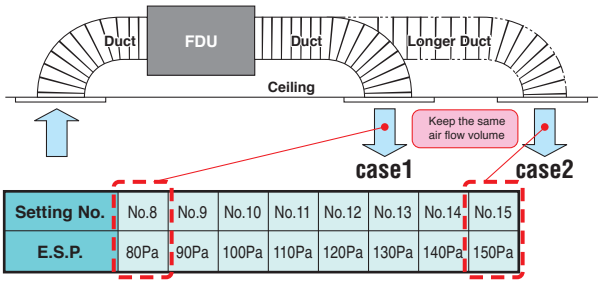
RCN-KIT4-E2

External Static Pressure(E.S.P) control

The External Static Pressure (E.S.P.) can be manually set on the wired remote controller. Indoor unit will control the fan speed to keep rated air flow volume at each fan speed setting. You can set required E.S.P. by wired remote controller, calculated with the set air flow rate and the pressure loss of the duct.

E.S.P. button RC-E5

External Static Pressure (E.S.P.) can be set by E.S.P. button.



Setting No.	No.8	No.9	No.10	No.11	No.12	No.13	No.14	No.15
E.S.P.	80Pa	90Pa	100Pa	110Pa	120Pa	130Pa	140Pa	150Pa

*Range of 80~150 Pa is set at ex-factory default.
Range of 10~200 Pa is available by setting SW8-4 switch on at site.

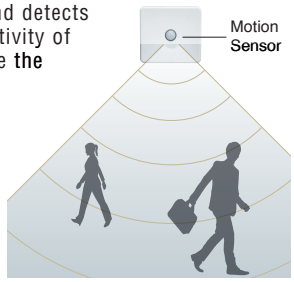
<Expansion of external static pressure range>

Previous		Current
10~130Pa	➡	10~200Pa

Motion Sensor NEW (Option)

Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

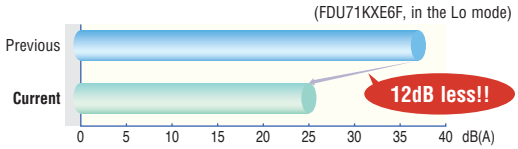
LB-KIT



Thin design

	Previous		Current	
FDU71KXE6F	297	➡	280	17mm less!!
FDU112/140KXE6F	350	➡	280	70mm less!!

Reduction of sound pressure level



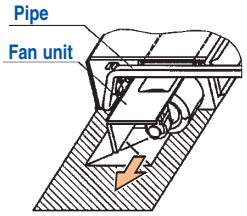
	Previous		Current	Lo mode
FDU90KXE6F	37	➡	25	12dB(A) less!!
FDU112KXE6F	38	➡	30	8dB(A) less!!
FDU140KXE6F	39	➡	29	10dB(A) less!!

Transparent inspection window

Dirt condition of the bottom of a drain pan can be checked through this transparent inspection window without removing drain pan.
(Please refer to P78)

Improvement of the serviceability

Fan unit (impeller and motor) can be pulled out from the right side of the unit. Maintenance can be available from the right side or the bottom side.
(Common for FDUM22~160KXE6F & FDU45~160KXE6F)



Specifications

Item		Model	FDU45KXE6F	FDU56KXE6F	FDU71KXE6F	FDU90KXE6F	FDU112KXE6F	FDU140KXE6F	FDU160KXE6F
Nominal cooling capacity		kW	4.5	5.6	7.1	9.0	11.2	14.0	16.0
Nominal heating capacity		kW	5.0	6.3	8.0	10.0	12.5	16.0	18.0
Power source			1 Phase 220-240V, 50Hz						
Power consumption	Cooling	kW	0.10-0.10		0.24-0.25		0.31-0.32	0.35-0.36	0.42-0.43
	Heating		0.10-0.10		0.24-0.25		0.31-0.32	0.35-0.36	0.42-0.43
Sound power level		dB(A)	60		65		—		
Sound pressure level		dB(A)	P-Hi:37 Hi:32 Me:29 Lo:26		P-Hi:38 Hi:33 Me:29 Lo:25		P-Hi:44 Hi:38 Me:36 Lo:30	P-Hi:45 Hi:40 Me:34 Lo:29	P-Hi:47 Hi:40 Me:35 Lo:30
Exterior dimensions H x W x D		mm	280x750x635		280x950x635		280x1370x740		
Net weight		kg	29		34		54		
Air flow		m³/min	P-Hi:13 Hi:10 Me:9 Lo:8		P-Hi:24 Hi:19 Me:15 Lo:10		P-Hi:36 Hi:28 Me:25 Lo:19	P-Hi:39 Hi:32 Me:26 Lo:20	P-Hi:48 Hi:35 Me:28 Lo:22
Maximum external static pressure		Pa	200						
Outside air intake			Possible						
Air filter			Procure locally						
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2						
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")		Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")				

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. External static pressure of indoor unit is 60Pa.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

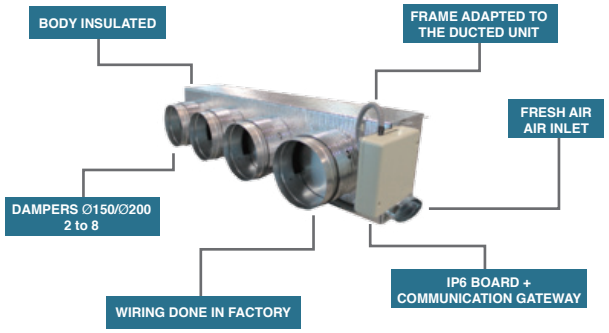
Item		Model	FDU224KXZE1	FDU280KXZE1
Nominal cooling capacity		kW	22.4	28.0
Nominal heating capacity		kW	25.0	31.5
Power source			1 Phase 220-240V, 50Hz	
Power consumption	Cooling	kW	1.16-1.20	1.16-1.20
	Heating		1.16-1.20	1.16-1.20
Sound pressure level		dB(A)	P-Hi:52 Hi:50 Me:47 Lo:45	
Exterior dimensions H x W x D		mm	379x1600x893	
Net weight		kg	89	
Air flow		m³/min	P-Hi:80 Hi:72 Me:64 Lo:56	
Maximum external static pressure		Pa	200	
Outside air intake			Possible(on return duct)	
Air filter			Procure locally	
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2	
Installation data Refrigerant piping size		mm(in)	Liquid line:ø9.52(3/8") Gas line:ø19.05(3/4")	Liquid line:ø9.52(3/8") Gas line:ø22.22(7/8")

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. External static pressure of indoor unit is 72Pa.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

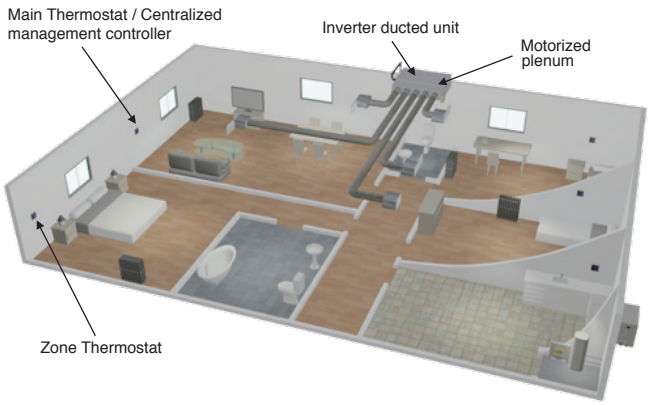
Round duct adapter (Available for FDU 45~160KXE6F, FDUM 22~160KXE6F)

Company : AIRZONE
URL : http://www.airzone.es

All-in-one solution: the whole zoning system in a plug&play device perfectly adapted to the indoor DX unit



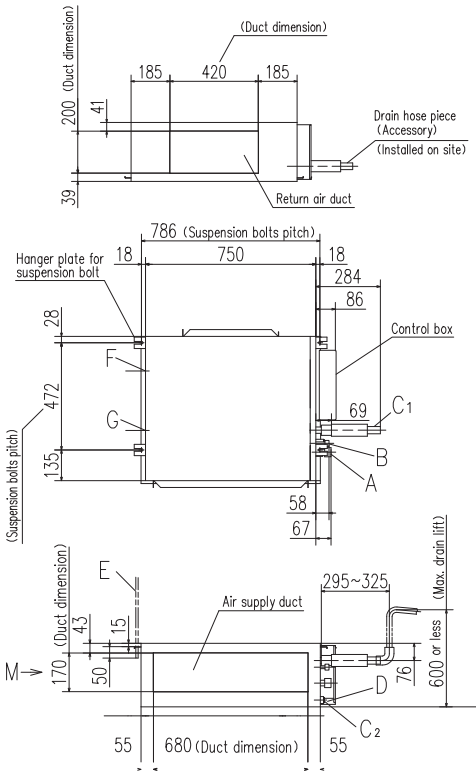
Main components



Dimensions

All measurements in mm.

FDU45KXE6F, 56KXE6F

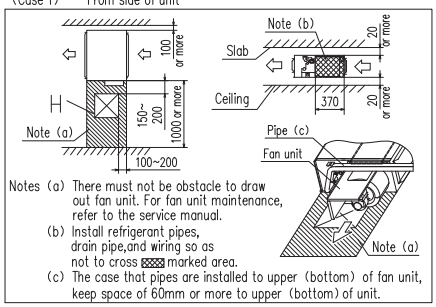


Symbol	Content	
A	Gas piping	φ12.7 (1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)
C1	Drain piping	VP25 (O.D.32)
C2	Drain piping (Gravity drainage)	VP20
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection opening	(450X450)

Space for installation and service

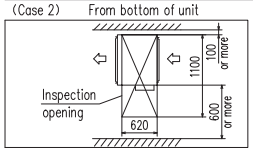
Select either of two cases to keep space for installation and services.

(Case 1) From side of unit



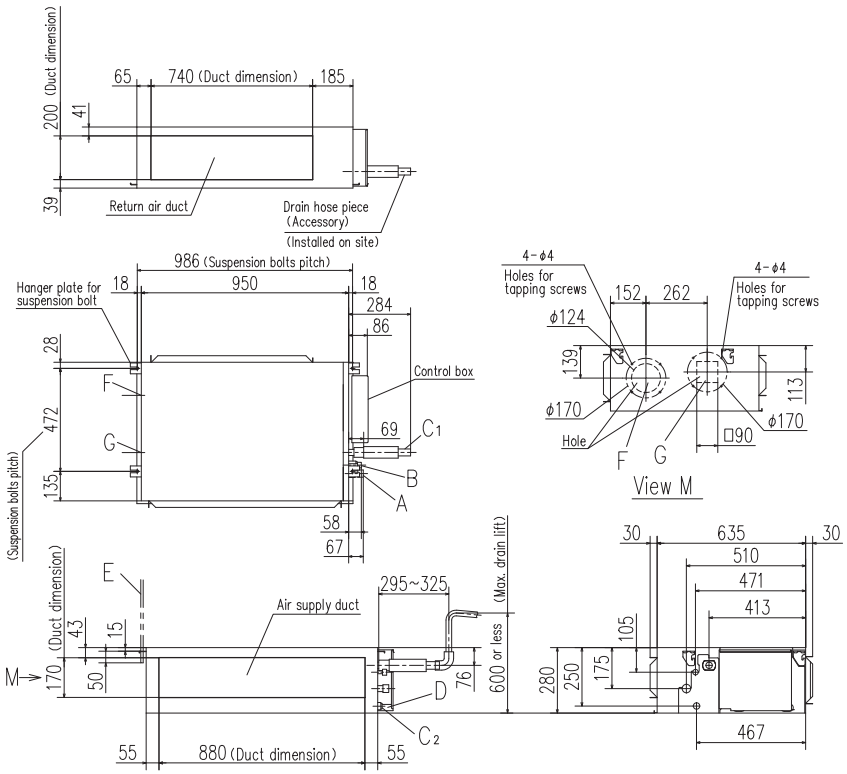
Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to the service manual.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



Note
(1) The model name label is attached on the lid of the control box.

FDU71KXE6F, 90KXE6F

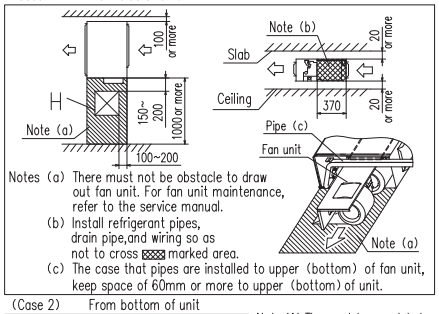


Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C1	Drain piping	VP25 (O.D.32)
C2	Drain piping (Gravity drainage)	VP20
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection opening	(450X450)

Space for installation and service

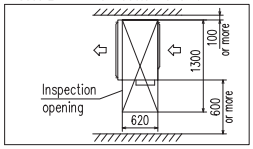
Select either of two cases to keep space for installation and services.

(Case 1) From side of unit



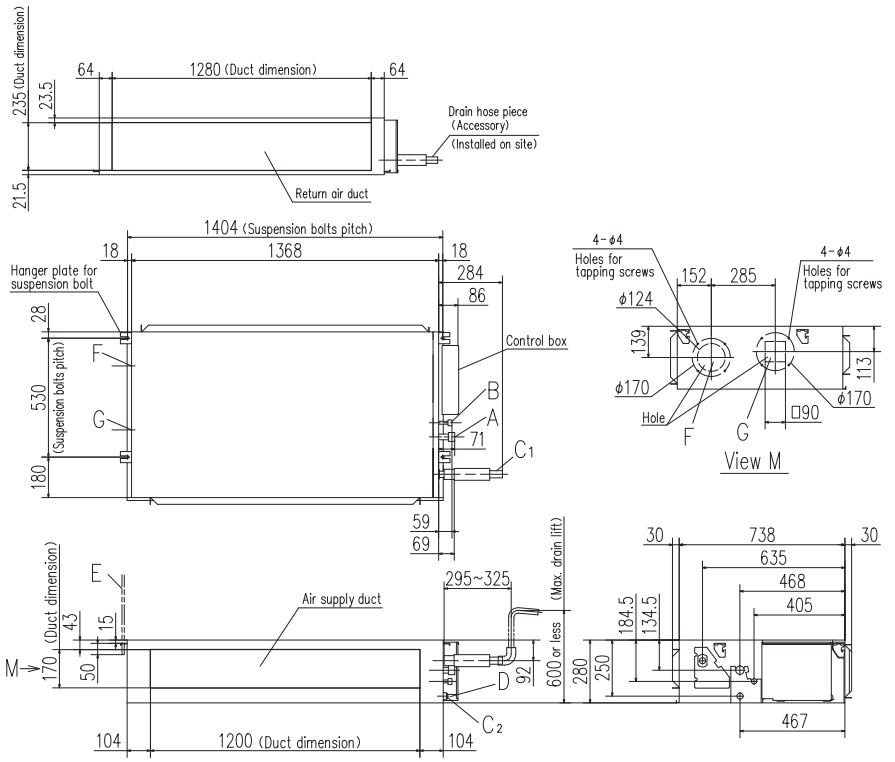
Notes (a) There must not be obstacle to draw out fan unit. For fan unit maintenance, refer to the service manual.
(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.
(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



Note (1) The model name label is attached on the lid of the control box.

FDU112KXE6F, 140KXE6F, 160KXE6F

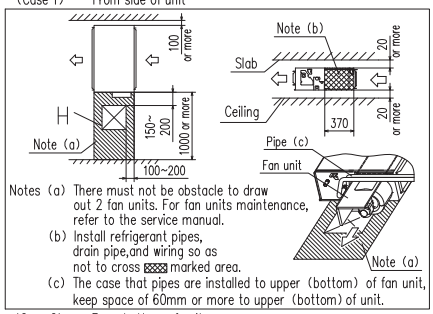


Symbol	Content	
A	Gas piping	φ15.88 (5/8") (Flare)
B	Liquid piping	φ9.52 (3/8") (Flare)
C1	Drain piping	VP25 (O.D.32)
C2	Drain piping (Gravity drainage)	VP20
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection opening	(450X450)

Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

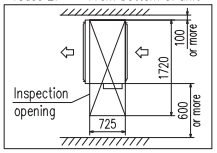


Notes (a) There must not be obstacle to draw out 2 fan units. For fan units maintenance, refer to the service manual.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

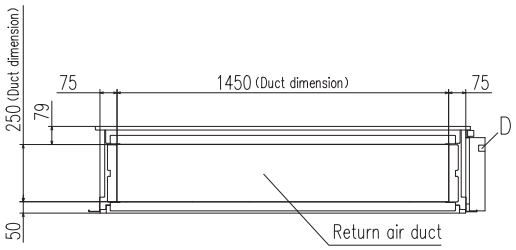
(Case 2) From bottom of unit



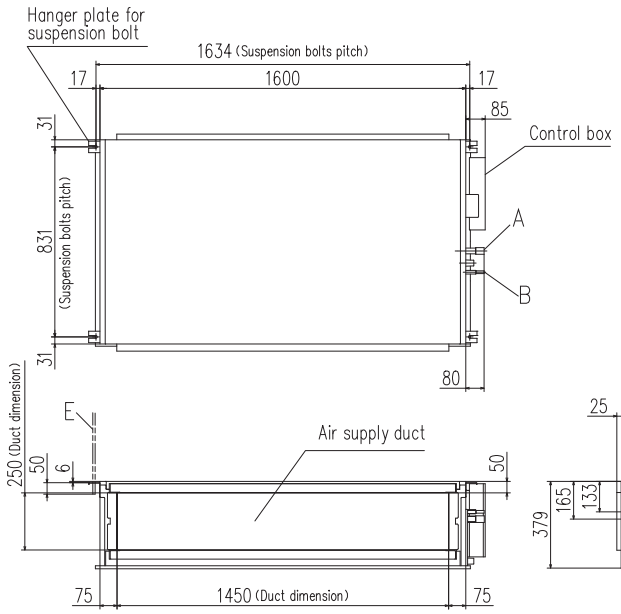
Note

(1) The model name label is attached on the lid of the control box.

FDU224KXZE1, 280KXZE1



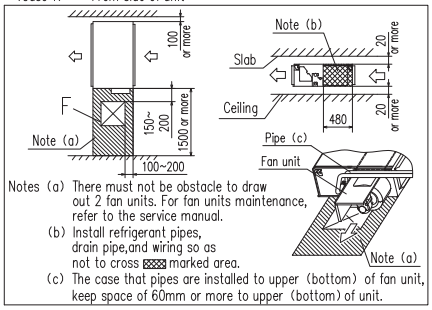
Symbol	Content		
	MODEL	224	280
A	Gas piping	φ19.05 (3/4") (Brazing)	φ22.22 (7/8") (Brazing)
B	Liquid piping	φ9.52 (3/8") (Brazing)	
C	Drain piping (Gravity drainage)	VP25 (O.D.32)	
D	Hole for wiring		
E	Suspension bolts	M10	
F	Inspection hole	(450X450)	



Space for installation and service

Select either of two cases to keep space for installation and services.

(Case 1) From side of unit

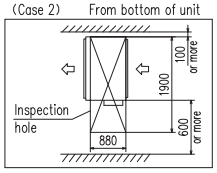


Notes (a) There must not be obstacle to draw out 2 fan units. For fan units maintenance, refer to the service manual.

(b) Install refrigerant pipes, drain pipe,and wiring so as not to cross ▨ marked area.

(c) The case that pipes are installed to upper (bottom) of fan unit, keep space of 60mm or more to upper (bottom) of unit.

(Case 2) From bottom of unit



Notes (1) The model name label is attached on the lid of the control box.

Duct Connected -Low/Middle Static Pressure- FDUM

Model No.

FDUM22KXE6F	FDUM71KXE6F
FDUM28KXE6F	FDUM90KXE6F
FDUM36KXE6F	FDUM112KXE6F
FDUM45KXE6F	FDUM140KXE6F
FDUM56KXE6F	FDUM160KXE6F

Filter kit (option)

UM-FL1EF : for 22~56
UM-FL2EF : for 71, 90
UM-FL3EF : for 112, 140, 160

*Filter pressure loss:5pa

Remote control (option)

Wired

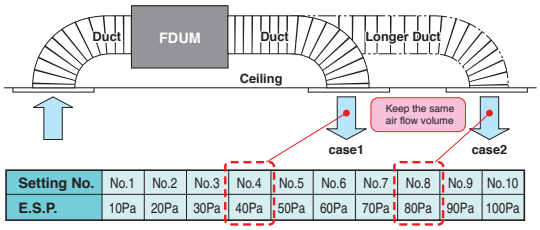
RC-EX3A **RC-E5** **RCH-E3**

Wireless

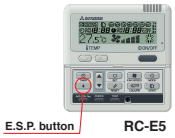
RCN-KIT4-E2

Automatic external static pressure (E.S.P.) control

Duct design was simplified. Using DC motor, the most optimum air flow volume can be achieved by this automatic control.
Indoor unit will recognize external static pressure by itself automatically and keep rated air flow volume.



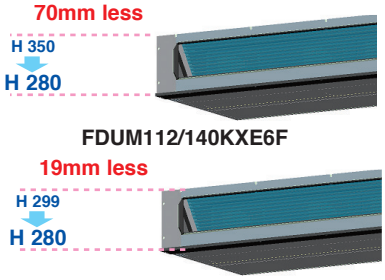
Setting No.	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
E.S.P.	10Pa	20Pa	30Pa	40Pa	50Pa	60Pa	70Pa	80Pa	90Pa	100Pa



External static pressure (E.S.P.) can be set by E.S.P. button.

Thin design

The height of all FDUM models is only 280mm.



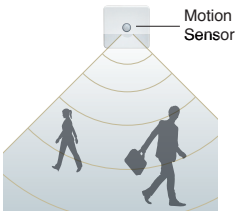
FDUM112/140KXE6F

FDUM22~90KXE6F

Motion Sensor NEW (Option)

Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-KIT



Transparent inspection window

Dirt condition of the bottom of a drain pan can be checked through this transparent inspection window without removing drain pan. (Please refer to P78)

Specifications

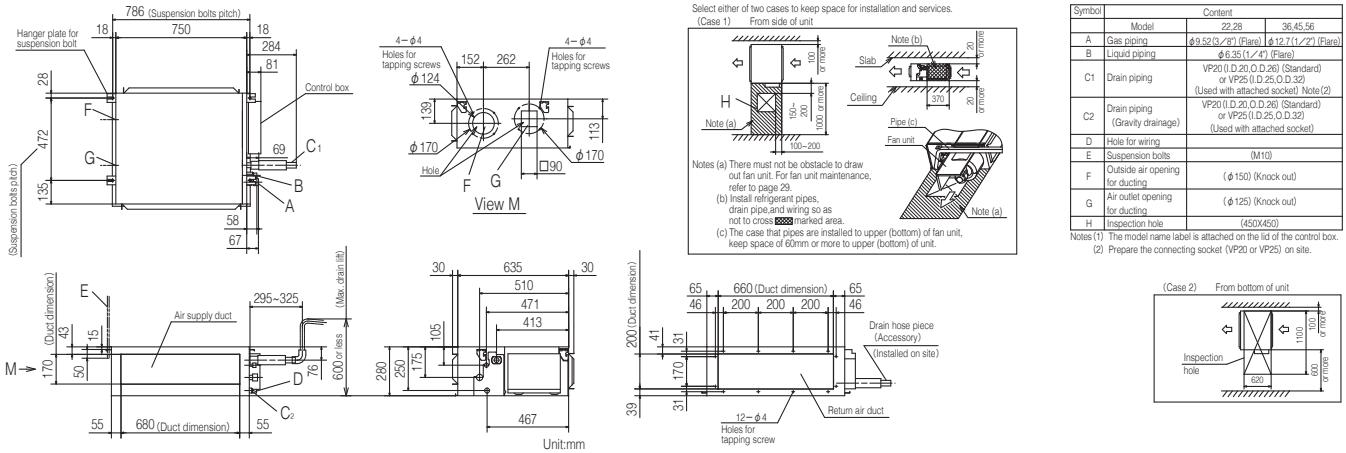
Item		Model	FDUM22KXE6F	FDUM28KXE6F	FDUM36KXE6F	FDUM45KXE6F	FDUM56KXE6F	FDUM71KXE6F	FDUM90KXE6F	FDUM112KXE6F	FDUM140KXE6F	FDUM160KXE6F
Nominal cooling capacity		kW	2.2	2.8	3.6	4.5	5.6	7.1	9.0	11.2	14.0	16.0
Nominal heating capacity		kW	2.5	3.2	4.0	5.0	6.3	8.0	10.0	12.5	16.0	18.0
Power source			1 Phase 220-240V, 50Hz									
Power consumption	Cooling	kW	0.10-0.10					0.20-0.20		0.29-0.29	0.33-0.33	0.45-0.45
	Heating		0.10-0.10					0.20-0.20		0.29-0.29	0.33-0.33	0.45-0.45
Sound power level		dB(A)	60					65		—		
Sound pressure level		dB(A)	P-Hi:37 Hi:32 Me:29 Lo:26					P-Hi:38 Hi:33 Me:29 Lo:25		P-Hi:44 Hi:38 Me:36 Lo:30	P-Hi:45 Hi:40 Me:34 Lo:29	P-Hi:47 Hi:40 Me:35 Lo:30
Exterior dimensions H x W x D		mm	280 x 750 x 635					280 x 950 x 635		280 x 1370 x 740		
Net weight		kg	29					34		54		
Air flow		m³/min	P-Hi:13 Hi:10 Me:9 Lo:8					P-Hi:24 Hi:19 Me:15 Lo:10		P-Hi:36 Hi:28 Me:25 Lo:19	P-Hi:39 Hi:32 Me:26 Lo:20	P-Hi:48 Hi:35 Me:28 Lo:22
Maximum external static pressure		Pa	100									
Outside air intake			Possible									
Air filter			Filter kit:UM-FL1EF/UM-FL2EF/UM-FL3EF(option)									
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2									
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")		Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")				

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. External static pressure of indoor unit is 35Pa(22/28/36/45/56/71/90), 60Pa(112/140/160).
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

Dimensions

All measurements in mm.

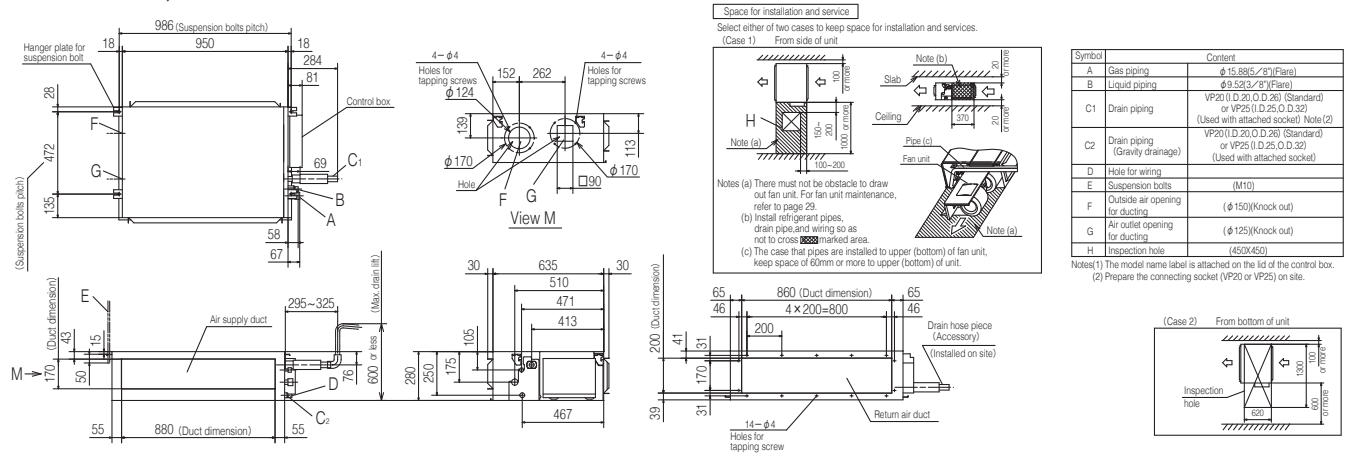
FDUM22KXE6F, 28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F



Symbol	Content		
	Model	22,28	36,45,56
A	Gas piping	φ9.52(3/8") (Flare)	φ12.7(1/2") (Flare)
B	Liquid piping	φ6.35 (1/4") (Flare)	
C1	Drain piping	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket) Note (2)	
C2	Drain piping (Gravity drainage)	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket)	
D	Hole for wiring		
E	Suspension bolts	(M10)	
F	Outside air opening for ducting	(φ150) (Knock out)	
G	Air outlet opening for ducting	(φ125) (Knock out)	
H	Inspection hole	(450X450)	

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

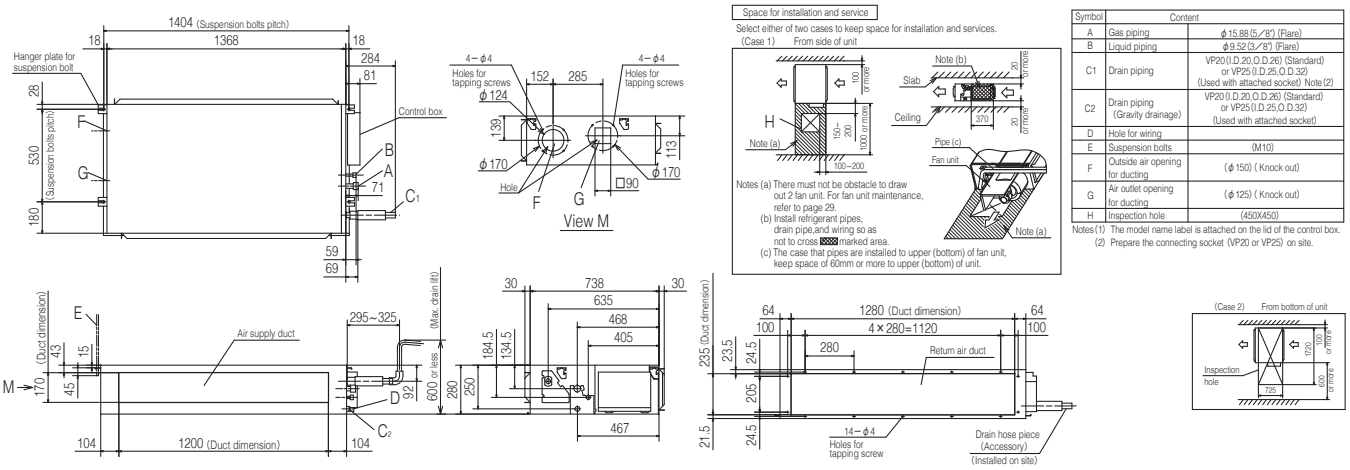
FDUM71KXE6F, 90KXE6F



Symbol	Content	
A	Gas piping	φ15.88(5/8")(Flare)
B	Liquid piping	φ9.52(3/8")(Flare)
C1	Drain piping	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150)(Knock out)
G	Air outlet opening for ducting	(φ125)(Knock out)
H	Inspection hole	(450X450)

Notes(1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

FDUM112KXE6F, 140KXE6F, 160KXE6F

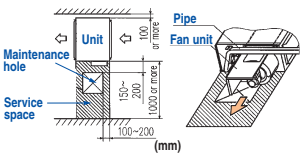


Symbol	Content	
A	Gas piping	φ15.88(5/8") (Flare)
B	Liquid piping	φ9.52(3/8") (Flare)
C1	Drain piping	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket) Note (2)
C2	Drain piping (Gravity drainage)	VP20 (I.D.20,O.D.26) (Standard) or VP25 (I.D.25,O.D.32) (Used with attached socket)
D	Hole for wiring	
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(φ150) (Knock out)
G	Air outlet opening for ducting	(φ125) (Knock out)
H	Inspection hole	(450X450)

Notes(1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

Improvement of the serviceability

Fan unit (impeller and motor) can be pulled out from the right side or the bottom side of the unit. Maintenance can be available from the right side or the bottom side.



Round duct adapter

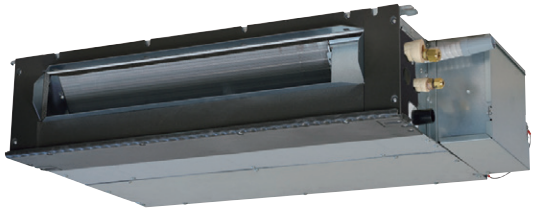
In case of requirements of round duct adapter, please refer to P85.

Company URL | AIRZONE http://www:airzone.es

Duct Connected (thin) -Low Static Pressure- FDUT

Model No.

FDUT15KXE6F-E
FDUT22KXE6F-E
FDUT28KXE6F-E
FDUT36KXE6F-E
FDUT45KXE6F-E
FDUT56KXE6F-E
FDUT71KXE6F-E



Remote control (option)

Wired

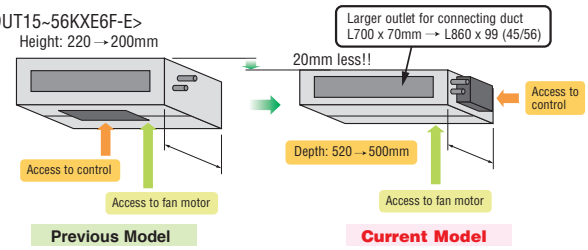
RC-EX3A RC-E5 RCH-E3

Wireless

RCN-KIT4-E2

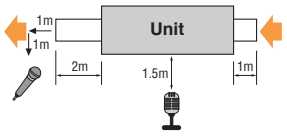
Compact design

<FDUT15~56KXE6F-E>
Height: 220→200mm

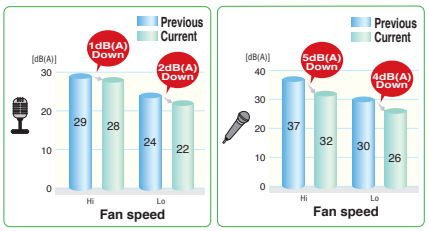


Lower noise

<FDUT28KXE6F-E>



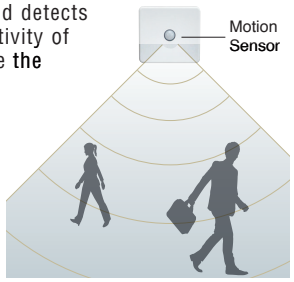
※Measured based on JIS B 8616



Motion Sensor NEW (Option)

Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

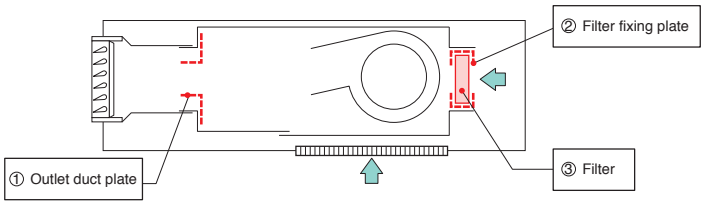
LB-KIT ※Applied for 71 only



Duct kit and filter options

Item	Contents	for FDUT15/22/28/36KXE6F-E	for FDUT45/56KXE6F-E	for FDUT71KXE6F-E
Outlet duct plate	①	UT-SAT1EF	UT-SAT2EF	UT-SAT3EF
Filter set	②+③	UT-FL1EF	UT-FL2EF	UT-FL3EF

Filter pressure loss : 5 Pa



Specifications

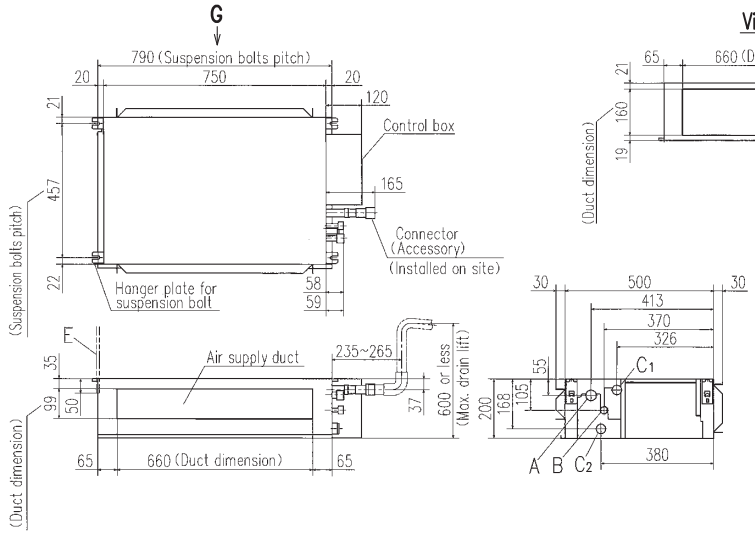
Item		Model	FDUT15KXE6F-E	FDUT22KXE6F-E	FDUT28KXE6F-E	FDUT36KXE6F-E	FDUT45KXE6F-E	FDUT56KXE6F-E	FDUT71KXE6F-E
Nominal cooling capacity		kW	1.5	2.2	2.8	3.6	4.5	5.6	7.1
Nominal heating capacity		kW	1.7	2.5	3.2	4.0	5.0	6.0	8.0
Power source			1 Phase 220-240V, 50Hz						
Power consumption	Cooling	kW	0.06-0.06	0.07-0.07			0.08-0.08		0.08-0.08
	Heating	kW	0.06-0.06	0.07-0.07			0.08-0.08		0.07-0.07
Sound power level		dB(A)	52			57	58	59	
Sound pressure level ①		dB(A)	Hi:28 Me:26 Lo:22	Hi:28 Me:26 Lo:22		Hi:33 Me:30 Lo:26	Hi:34 Me:32 Lo:28	Hi:35 Me:33 Lo:30	Hi:35 Me:31 Lo:28
Sound pressure level ②		dB(A)	Hi:32 Me:29 Lo:25	Hi:32 Me:29 Lo:26		Hi:37 Me:34 Lo:28	Hi:36 Me:33 Lo:27	Hi:38 Me:33 Lo:29	Hi:41 Me:37 Lo:32
Exterior dimensions H x W x D		mm	200x750x500				200x950x500		220x1150x565
Net weight		kg	21			22	25		31
Air flow (Standard)		m³/min	Hi:6 Me:5 Lo:4	Hi:7.5 Me:6 Lo:5		Hi:8.5 Me:7 Lo:5.5	Hi:11.5 Me:9 Lo:7	Hi:12.5 Me:9 Lo:7.2	Hi:16 Me:13 Lo:9.5
External Static pressure		Pa	Standard:10, Max:35				Standard:10, Max:50		
Outside air intake			Possible from return duct						
Air filter			Filter set:UT-FL1EF/UT-FL2EF/UT-FL3EF(option)						
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2						
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")			Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")

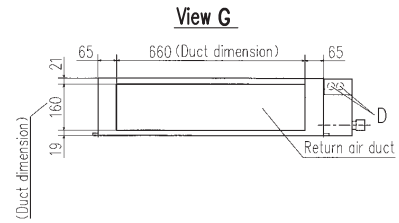
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. External static pressure of indoor unit is 10Pa.
2. The data of nominal cooling and heating capacity and sound pressure level are measured with 10Pa of external static pressure.
3. The sound level indicates the value of rear-intake type with duct in anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
4. Sound pressure levels are values when 2m supply duct and 1m return duct are connected.
① : Mike position is 1.5m below unit, ② : Mike position is 1m in front and 1m below the air supply duct.

Dimensions

All measurements in mm.

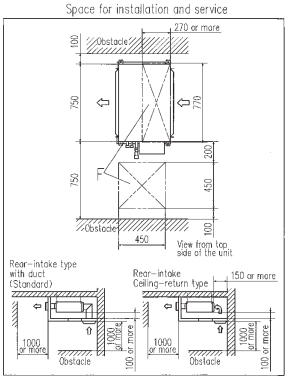
FDUT15KXE6F-E, 22KXE6F-E, 28KXE6F-E, 36KXE6F-E



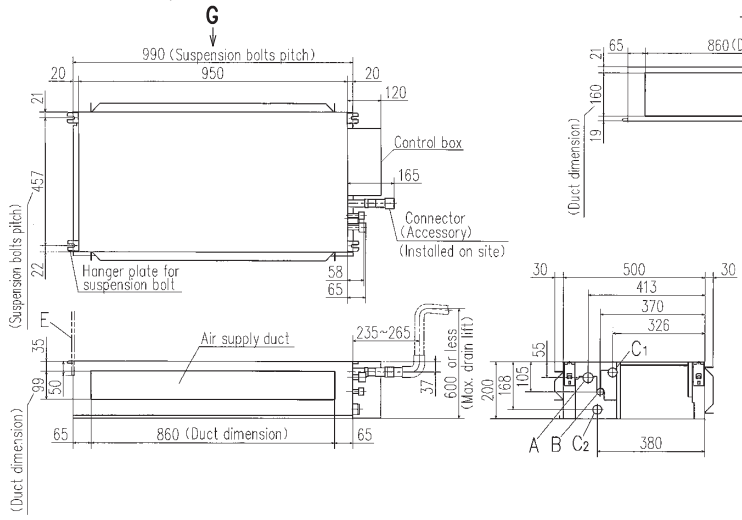


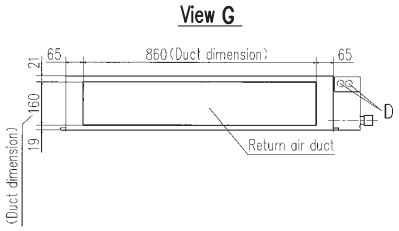
Symbol	Content		
	Model	15222836	
A	Gas piping	ø9.52 (3/8") (Flare)	ø12.7 (1/2") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)	
C1	Drain piping	VP25 (I.D.25 , O.D.32) (Used with attached connector)	
C2	Drain piping (Gravity drainage)	VP25 (I.D.25 , O.D.32) (Used with attached connector)	
D	Hole for wiring	ø25 x 2	
E	Suspension bolts	(M10)	
F	Inspection hole	(450X450) , (270X770)	

Space for installation and service



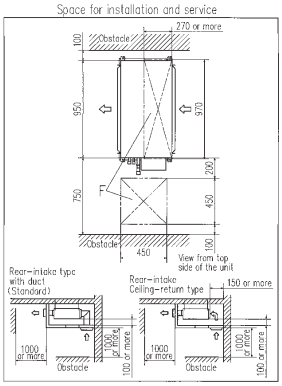
FDUT45KXE6F-E, 56KXE6F-E



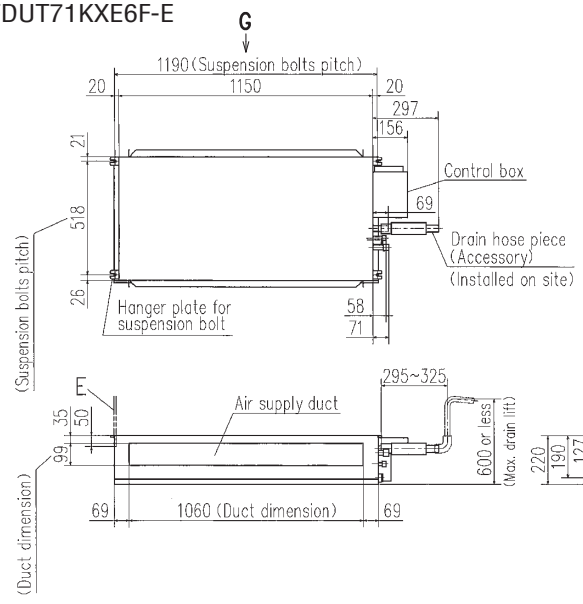


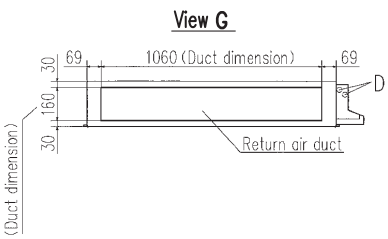
Symbol	Content	
	Model	45,56
A	Gas piping	ø12.7 (1/2") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)
C1	Drain piping	VP25 (I.D.25 , O.D.32) (Used with attached connector)
C2	Drain piping (Gravity drainage)	VP25 (I.D.25 , O.D.32) (Used with attached connector)
D	Hole for wiring	ø25 x 2
E	Suspension bolts	(M10)
F	Inspection hole	(450X450) , (270X970)

Space for installation and service



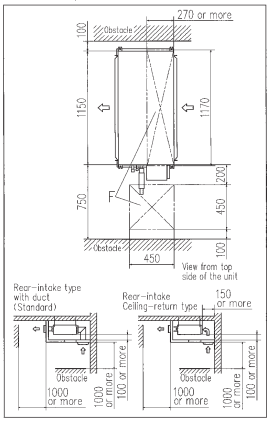
FDUT71KXE6F-E





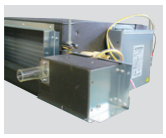
Symbol	Content	
	Model	71
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C1	Drain piping	VP25 (I.D.25 , O.D.32) (Used with attached socket)
C2	Drain piping (Gravity drainage)	VP25 (I.D.25 , O.D.32) (Used with attached socket)
D	Hole for wiring	ø25 x 2
E	Suspension bolts	(M10)
F	Inspection hole	(450X450) , (270X1170)

Space for installation and service



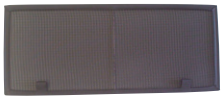
Duct Connected (Compact & Flexible)
FDUH

Model No.
FDUH22KXE6F
FDUH28KXE6F
FDUH36KXE6F



Drain up kit (option)
(600mm)
UH-DU-E

Filter kit (option)
UH-FL1E



∗Filter pressure loss:5pa

Remote control (option)

Wired

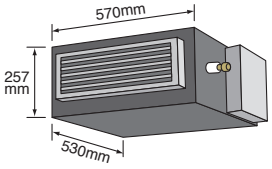
RC-EX3A **RC-E5** **RCH-E3**

Wireless

RCN-KIT4-E2

Compact and thin size, light weight

Our leading high technology has realized the best solution for air conditioning in hotels with compact and thin size units and high energy efficiency. In addition, weight is only 20kg.

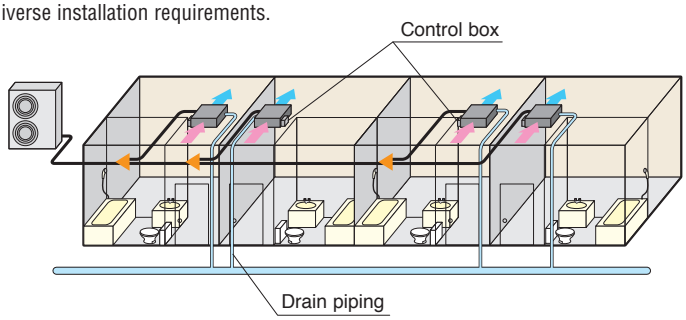


Quiet operation

The lowest sound level in the industry can ensure comfortable stay and rest in hotels.

Installation Flexibility

Control box and drain piping can be installed on both side of the unit and air intake to the unit is available from bottom or back side. Our highest technology can satisfy diverse installation requirements.



Wired remote control

RCH-E3
(option)

Simple remote control

Designed specially for hotel rooms, control buttons are limited only to the minimum required functions such as ON/OFF, mode, temperature setting and fan speed. It is really simple and easy to use.

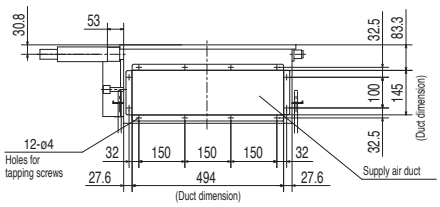
Specifications

Item	Model	FDUH22KXE6F	FDUH28KXE6F	FDUH36KXE6F
Nominal cooling capacity	kW	2.2	2.8	3.6
Nominal heating capacity	kW	2.5	3.2	4.0
Power source		1 Phase 220-240V, 50Hz		
Power consumption Cooling	kW	0.05-0.07		
Power consumption Heating	kW	0.05-0.07		
Sound power level	dB(A)	60		
Sound pressure level	dB(A)	P-Hi:39 Hi: 33 Me: 30 Lo: 27		
Exterior dimensions HxWxD	mm	257x570x530		
Net weight	kg	22		
Air flow	m³/min	P-Hi:8.5 Hi: 7 Me: 6.5 Lo: 6		
External static pressure	Pa	30		
Outside air intake		Possible from return duct		
Air filter		Filter kit:UH-FL1E(option)		
Remote control(option)		wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2		
Installation data Refrigerant piping size	mm(in)	Liquid line:ø6.35(1/4")		Liquid line:ø6.35(1/4")
		Gas line:ø9.52(3/8")		Gas line:ø12.7(1/2")

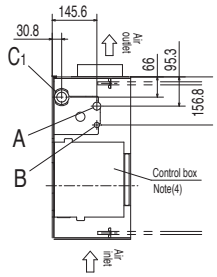
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

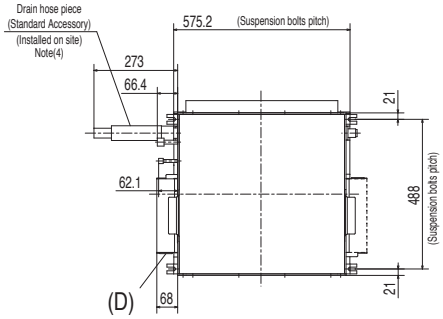
Dimensions

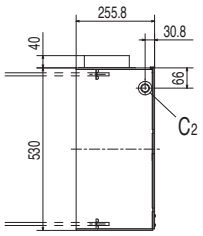
All measurements in mm.

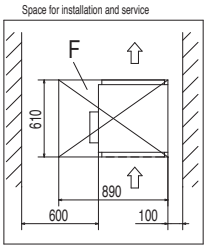


Symbol	Content		
	Model	FDUH22KXE6F,28KXE6F	FDUH36KXE6F
A	Gas piping	ø9.52 (3/8") (Flare)	ø12.7 (1/2") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)	
C_1,C_2	Drain piping	VP20(I.D.20, O.D.26) Note (2)	
D	Hole for wiring	ø30	
E	Suspension bolts	(M10)	
F	Inspection hole	(635X890) Note (3)	

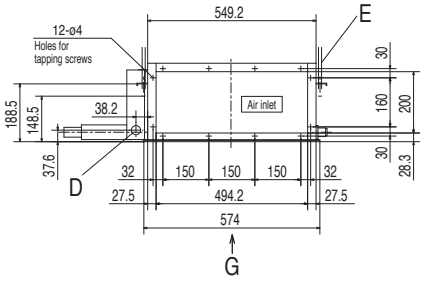






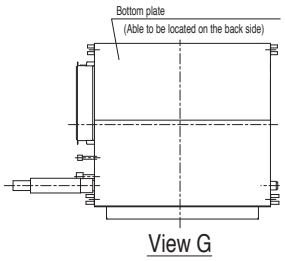


Unit:mm

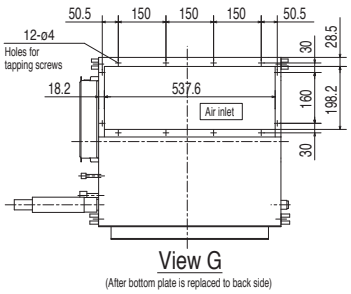


Notes

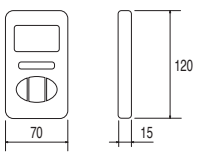
(1) The model name label is attached on the fan case inside the air return grille.
(2) Prepare the connecting socket (VP20) on site. (As for drain piping, it is possible to choose C_1 or C_2)
(3) When control box is located on the reverse side, Installation space should be modified to new location.
(4) Control box and Drain hose piece are able to be relocated on the reverse side.



In case of Bottom air intake



Simple remote control



Wall Mounted FDK

Model No.

FDK15KXZE1
FDK22KXZE1
FDK28KXZE1
FDK36KXZE1
FDK45KXZE1
FDK56KXZE1
FDK71KXZE1
FDK90KXZE1

FDK15~56

FDK71,90

Remote control (option)

Wired

RC-EX3A

RC-E5

RCH-E3

Wireless

RCN-K-E2: FDK15~56

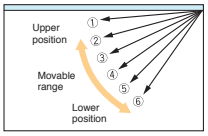
RCN-K71-E2: FDK71,90

Elegant Timeless Design

The FDK series air-conditioners have been stylishly designed with rounded contours that fit beautifully into any of Europe's diverse interior settings. The design was created by the Italian industrial design studio Tensa srl, based in Milan, to respond to a broad spectrum of local user needs. (15~56KXZE1)

Flap control system

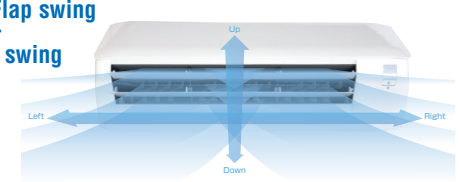
Selection of flap position is possible. A flap can be set at different angles.



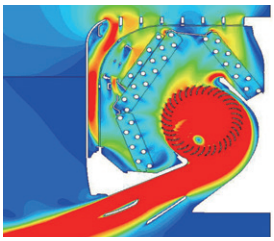
*The wireless remote control is not applicable to the flap control system.

Lateral Swing ▶ flap swings from right to left automatically

Up/Down Flap swing + Lateral swing



Jet Technology



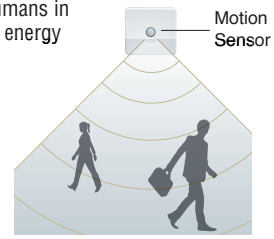
Fast ⟷ Slow
Colours in the figure show the air speed.

FDK models adopt the air flow design that's proven to minimise resistance in a CFD analysis to achieve uniform air conditioning to the furthest corners of the room.

Motion Sensor NEW (Option)

Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-KIT



Specifications

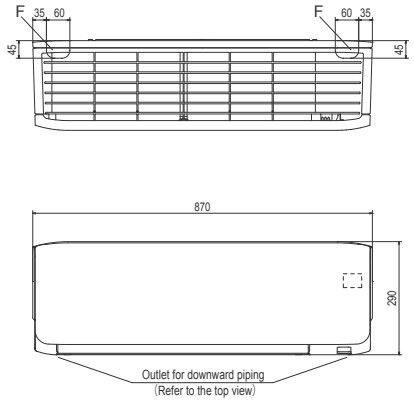
Item		Model	FDK15KXZE1	FDK22KXZE1	FDK28KXZE1	FDK36KXZE1	FDK45KXZE1	FDK56KXZE1	FDK71KXZE1	FDK90KXZE1
Nominal cooling capacity		kW	1.5	2.2	2.8	3.6	4.5	5.6	7.1	9.0
Nominal heating capacity		kW	1.7	2.5	3.2	4.0	5.0	6.3	8.0	10.0
Power source			1 Phase 220-240V, 50Hz							
Power consumption	Cooling	kW	0.02-0.02			0.03-0.03			0.04-0.04	0.05-0.05
	Heating	kW	0.02-0.02			0.03-0.03			0.04-0.04	0.05-0.05
Sound power level		dB(A)	54	55		58		Cooling:58 Heating:61	59	61
Sound pressure level	Cooling	dB(A)	P-Hi:38 Hi:34 Me:31 Lo:28	P-Hi:38 Hi:36 Me:32 Lo:28		P-Hi:40 Hi:38 Me:33 Lo:28	P-Hi:43 Hi:41 Me:36 Lo:33	P-Hi:43 Hi:41 Me:36 Lo:33	P-Hi:42 Hi:40 Me:37 Lo:35	P-Hi:44 Hi:42 Me:39 Lo:35
	Heating	dB(A)	P-Hi:38 Hi:34 Me:31 Lo:28	P-Hi:38 Hi:36 Me:32 Lo:28		P-Hi:40 Hi:38 Me:33 Lo:28	P-Hi:43 Hi:41 Me:36 Lo:33	P-Hi:44 Hi:42 Me:37 Lo:33	P-Hi:42 Hi:40 Me:37 Lo:35	P-Hi:44 Hi:42 Me:39 Lo:35
Exterior dimensions H x W x D		mm	290 x 870 x 230						339 x 1197 x 262	
Net weight		kg	11.5	11		11.5			17	
Air flow	Cooling	m³/min	P-Hi:5.7 Hi:5 Me:4.5 Lo:3.6	P-Hi:8.5 Hi:8 Me:6 Lo:5		P-Hi:11 Hi:10 Me:8 Lo:7	P-Hi:12 Hi:11 Me:9 Lo:8	P-Hi:12 Hi:11 Me:9 Lo:8 P-Hi:13 Hi:12 Me:10 Lo:8	P-Hi:21 Hi:19 Me:16 Lo:14	P-Hi:23 Hi:21 Me:19 Lo:16
	Heating	m³/min								
Outside air intake			Not possible							
Air filter, Q'ty			Polypropylene net x2 (Washable)							
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-K-E2, RCN-K71-E2							
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")			Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")	

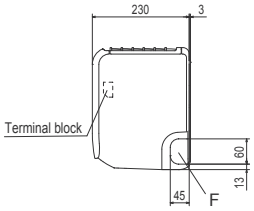
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

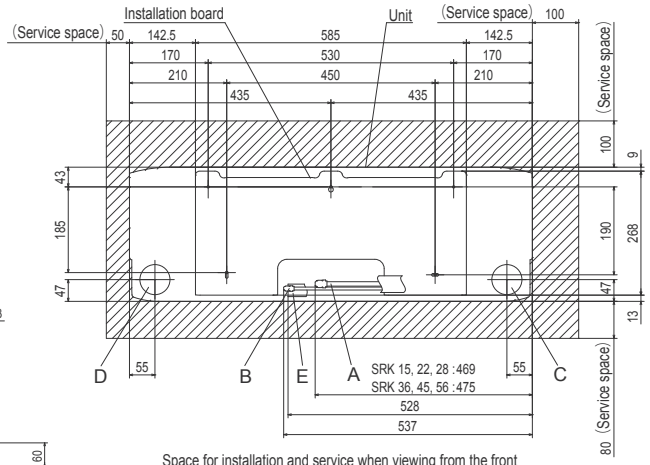
Dimensions

All measurements in mm.

FDK15KXZE1, 22KXZE1, 28KXZE1, 36KXZE1, 45KXZE1, 56KXZE1



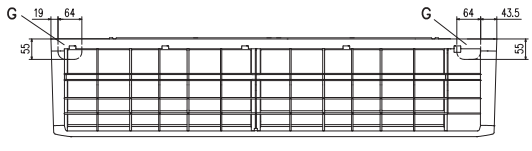


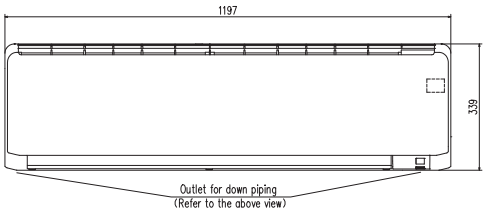


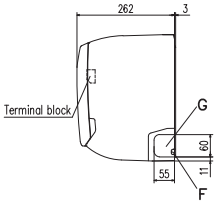
Space for installation and service when viewing from the front

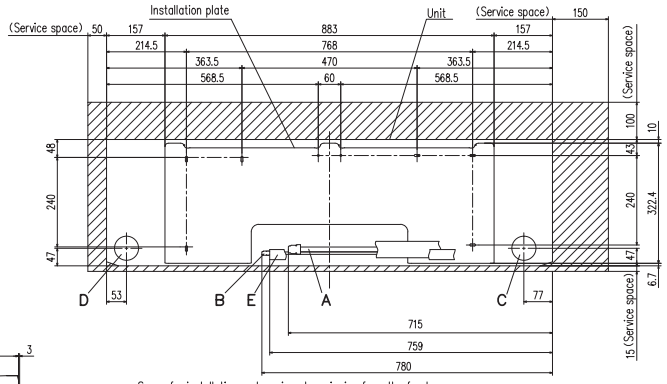
Symbol	Content	
A	Gas piping	SRK15, 22, 28 ϕ9.52 (3/8") (Flare) SRK36, 45, 56 ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C	Hole on wall for right rear piping	(ϕ65)
D	Hole on wall for left rear piping	(ϕ65)
E	Drain hose	VP16
F	Outlet for piping (on both side)	

FDK71KXZE1, 90KXZE1









Space for installation and service when viewing from the front

Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C	Hole on wall for right rear piping	(ϕ65)
D	Hole on wall for left rear piping	(ϕ65)
E	Drain hose	VP16
F	Outlet for wiring (on both side)	
G	Outlet for piping (on both side)	

Ceiling Suspended
FDE

Model No.

FDE36KXZE1
FDE45KXZE1
FDE56KXZE1
FDE71KXZE1
FDE112KXZE1
FDE140KXZE1

Remote control (option)

Wired

RC-EX3A RC-E5 RCH-E3

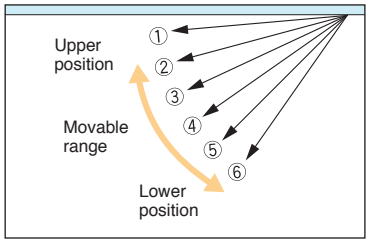
Wireless

RCN-E-E2

Flap control system

Selection of flap position is possible. A flap can be set at different angles.

*The wireless remote control is not applicable to the flap control system.



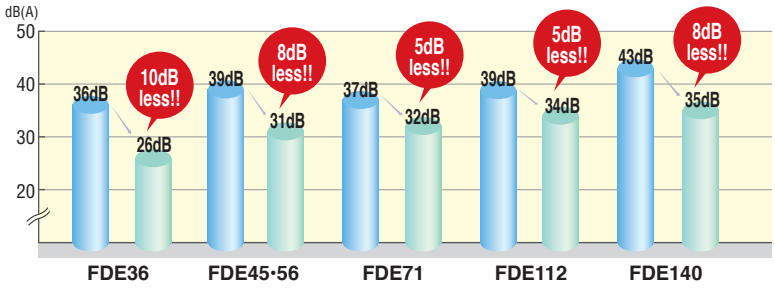
Reduction of weight

Thanks to decreasing the numbers of fan motor from two to one, reduction of weight was achieved.

	Previous		Current	
FDE71	37	➡	33	4kg less!!
FDE112	49	➡	43	6kg less!!
FDE140	49	➡	43	6kg less!!

Reduction of sound pressure level (Lo mode)

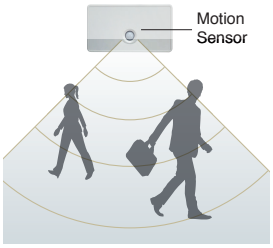
The industry's lowest sound pressure levels were achieved by decreasing air flow volume, decreasing pressure loss with employment of one fan motor and optimizing casing and distributor shape. (comparison of previous model)



Motion Sensor NEW (Option)

Motion sensor is equipped in the panel and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-E



Specifications

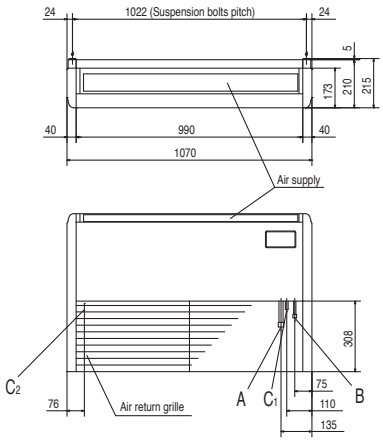
Item	Model	FDE36KXZE1	FDE45KXZE1	FDE56KXZE1	FDE71KXZE1	FDE112KXZE1	FDE140KXZE1
Nominal cooling capacity	kW	3.6	4.5	5.6	7.1	11.2	14.0
Nominal heating capacity	kW	4.0	5.0	6.3	8.0	12.5	16.0
Power source		1 Phase 220-240V, 50Hz					
Power consumption	Cooling kW	0.05-0.05			0.07-0.07	0.10-0.10	0.13-0.13
	Heating kW	0.05-0.05			0.07-0.07	0.10-0.10	0.13-0.13
Sound power level	dB(A)	60			62	—	
Sound pressure level	dB(A)	P-Hi:46 Hi:38 Me:31 Lo:26	P-Hi:46 Hi:38 Me:36 Lo:31	P-Hi:46 Hi:38 Me:36 Lo:31	P-Hi:47 Hi:39 Me:37 Lo:32	P-Hi:45 Hi:42 Me:38 Lo:34	P-Hi:48 Hi:43 Me:40 Lo:35
Exterior dimensions H x W x D	mm	210 x 1070 x 690			210 x 1320 x 690	250 x 1620 x 690	
Net weight	kg	28			33	43	
Air flow	m³/min	P-Hi:13 Hi:10 Me:7 Lo:5.5	P-Hi:13 Hi:10 Me:9 Lo:7		P-Hi:20 Hi:15 Me:13 Lo:10	P-Hi:28 Hi:25 Me:21 Lo:16.5	P-Hi:32 Hi:26 Me:23 Lo:17
Outside air intake		Not possible					
Air filter, Q'ty		Pocket Plastic net x2 (Washable)					
Remote control(option)		wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-E-E3					
Installation data Refrigerant piping size	mm(in)	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")			Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")		

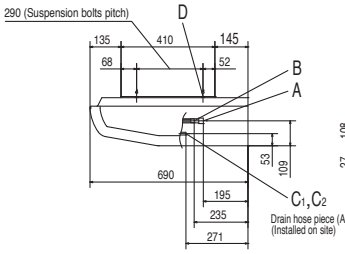
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

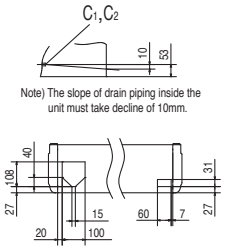
Dimensions

All measurements in mm.

FDE36KXZE1, 45KXZE1, 56KXZE1

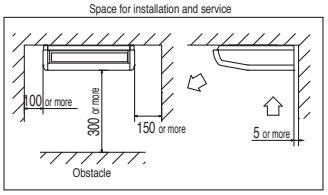




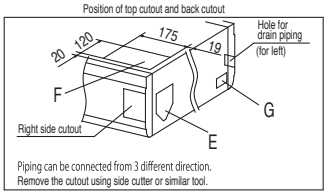


Note) The slope of drain piping inside the unit must take decline of 10mm.

Symbol	Content	
A	Gas piping	ø12.7 (1/2") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare)
C 1,2	Drain piping	VP20 (I.D.20)
D	Hole for suspension bolt	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Hole for drain piping (for left back)	(Knock out)

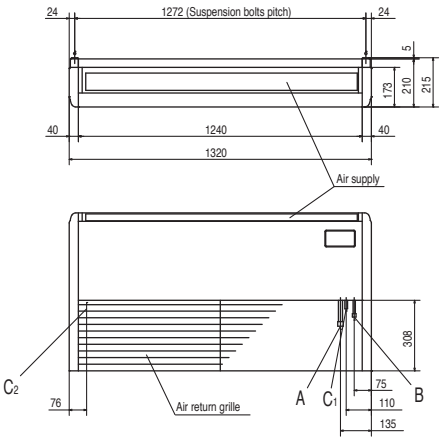


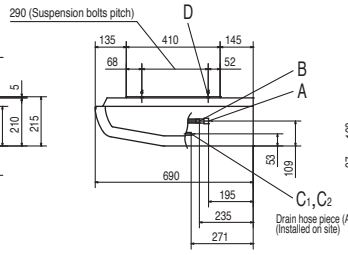
Make a space of 4000 or more between the units when installing more than one.

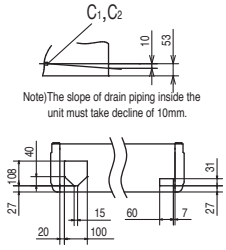


Note(1)The model name label is attached on the fan casing inside the air return grille.

FDE71KXZE1

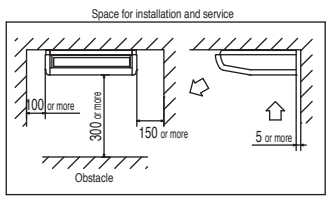




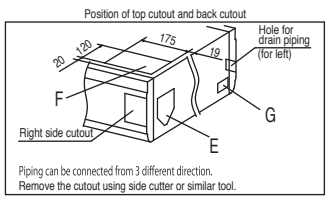


Note)The slope of drain piping inside the unit must take decline of 10mm.

Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D.20)
D	Hole for suspension bolt	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Hole for drain piping(for left back)	(Knock out)

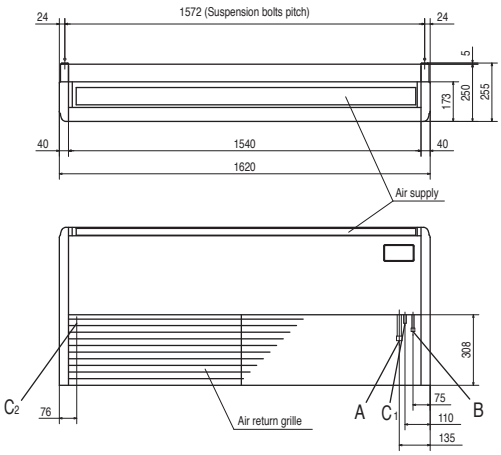


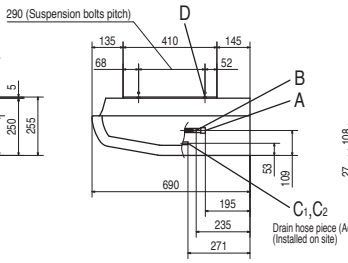
Make a space of 4500 or more between the units when installing more than one.

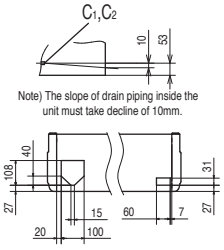


Note(1)The model name label is attached on the fan casing inside the air return grille.

FDE112KXZE1, 140KXZE1

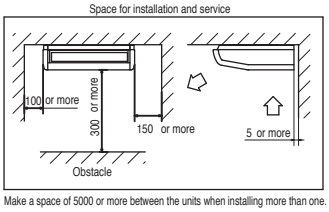




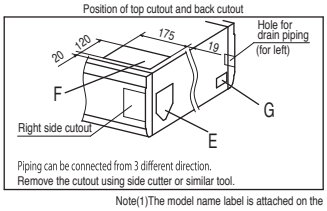


Note) The slope of drain piping inside the unit must take decline of 10mm.

Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C 1,2	Drain piping	VP20 (I.D.20)
D	Hole for suspension bolt	(M10 or M8)
E	Back cutout	PE cover
F	Top cutout	Plate cover
G	Hole for drain piping (for left back)	(Knock out)



Make a space of 5000 or more between the units when installing more than one.



Note(1)The model name label is attached on the fan casing inside the air return grille.

Floor Standing -2way-
FDFW

Model No.

FDFW28KXE6F
FDFW45KXE6F
FDFW56KXE6F

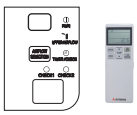
Auto air outlet selection

Remote control (option)

Wired

RC-EX3A RC-E5 RCH-E3

Wireless



RCN-FW-E2

Sophisticated Design

With an elegant semi flat front panel in stylish white, the new series fit in various kinds of rooms and create relaxing atmosphere. Choice of wall hanging, floor standing or behind gallery installation is available.

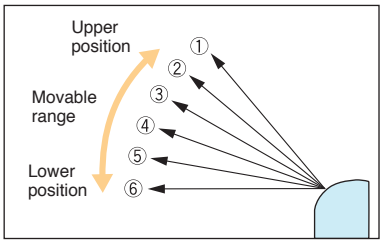
Quiet Operation

Thanks to optimum balance of air outlet direction and sufficient air flow volume, the sound level has been minimized. The level of FDFW28KXE6F in the cooling lo mode is 30dB(A) only.

Flap control system

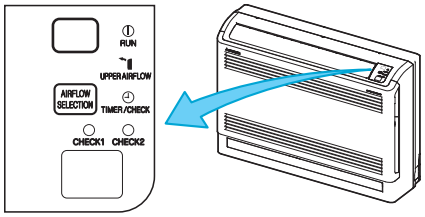
Selection of flap position is possible. A flap can be set at different angles.

*The wireless remote control is not applicable to the flap control system.



Convenient to use operation

Simultaneous lower and upper air outlets or upper outlet can be selected by air flow direction button. Further control can be arranged by a remote control.



(In case of use of wireless remote control)

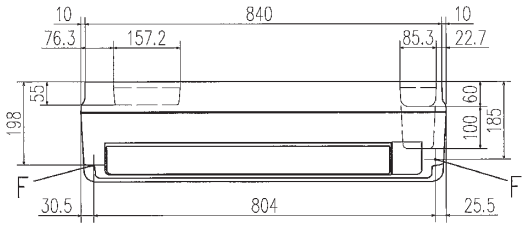
Specifications

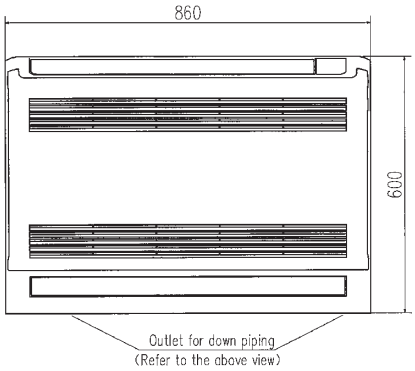
Item		Model	FDFW28KXE6F	FDFW45KXE6F	FDFW56KXE6F
Nominal cooling capacity		kW	2.8	4.5	5.6
Nominal heating capacity		kW	3.2	5.0	6.3
Power source			1 Phase 220-240V, 50Hz		
Power consumption	Cooling	kW	0.02-0.02	0.02-0.02	0.03-0.03
	Heating		0.02-0.02	0.02-0.02	0.03-0.03
Sound power level		dB(A)	55	57	60
Sound pressure level		dB(A)	Hi:36 Me:34 Lo:30	Hi:38 Me:36 Lo:33	Hi:44 Me:37 Lo:33
Exterior dimensions H x W x D		mm	600x860x238		
Net weight		kg	19	20	
Air flow (Standard)		m³/min	Hi:9 Me:8 Lo:7		Hi:11 Me:9 Lo:8
Air filter, Q'ty			Polypropylene net x1 (Washable)		
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-FW-E2		
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")	

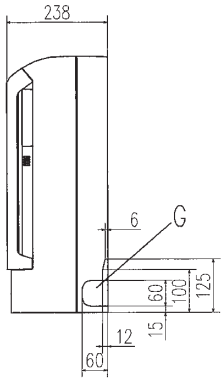
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

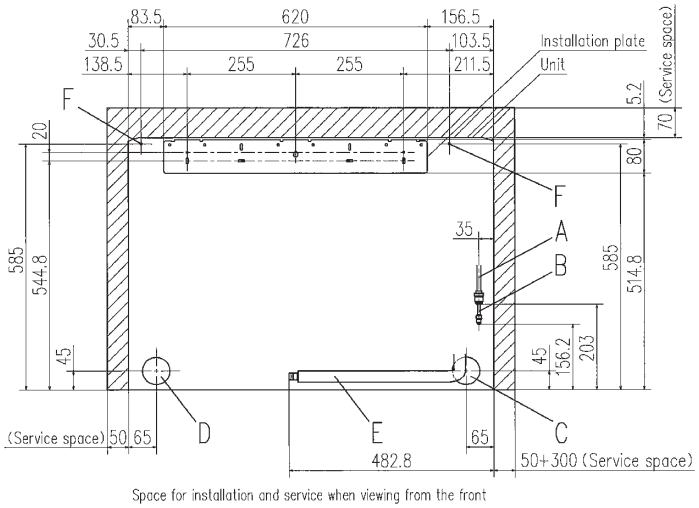
Dimensions

All measurements in mm.









Space for installation and service when viewing from the front

Symbol	Content		
	Model	FDFW28KXE6F	FDFW45KXE6F,56KXE6F
A	Gas piping	ϕ9.52 (3/8") (Flare)	ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)	
C	Hole on wall for right rear piping	(ϕ65)	
D	Hole on wall for left rear piping	(ϕ65)	
E	Drain hose	VP16 (I.D.16)	
F	Screw point fasten the indoor unit	ϕ5	
G	Outlet for piping (on both side)		

Notes
(1) The model name label is attached on the rightside of the unit.
(2) In case of wall installation, leave the unit 150mm or less from the floor.

Floor Standing (with casing) FDFL
Floor Standing (without casing) FDFU

Remote control (option)

Wired

RC-EX3A

RC-E5

RCH-E3

Wireless

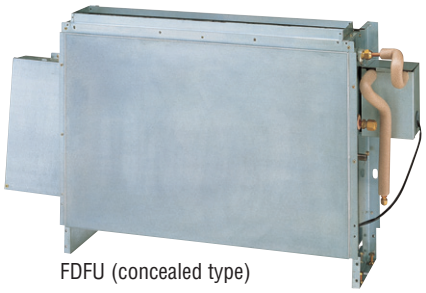
RCN-KIT4-E2

Model No.

FDFL71KXE6F

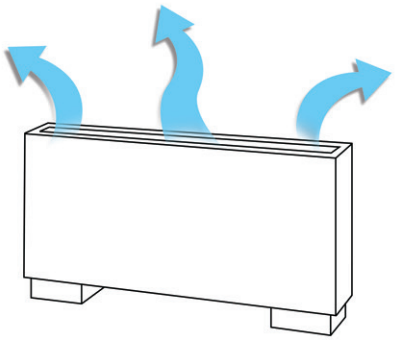
FDFU28KXE6F
FDFU45KXE6F
FDFU56KXE6F
FDFU71KXE6F

FDFL



FDFU (concealed type)

Compact design at 630mm height



Wider airflow for optimum comfort

Specifications

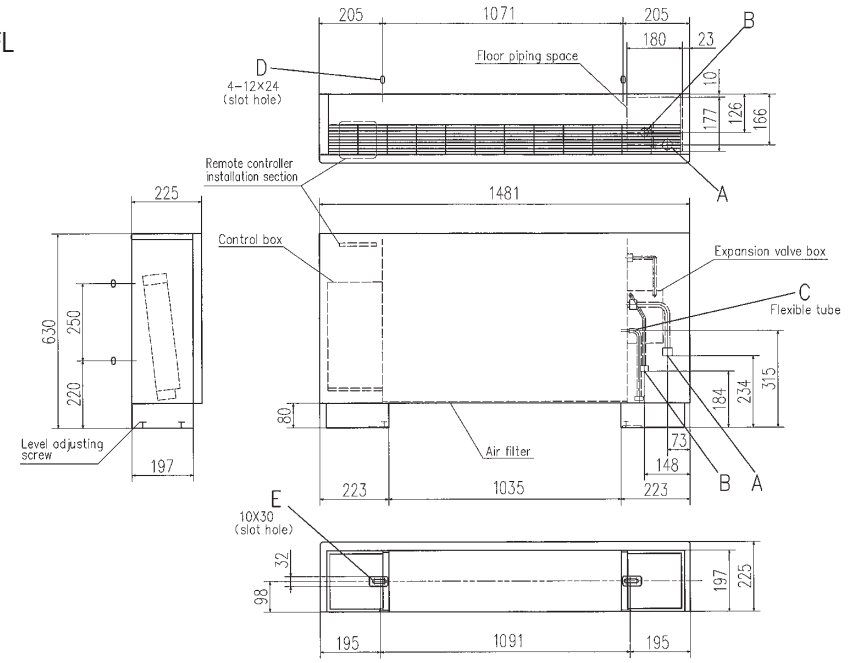
Item		Model	FDFL71KXE6F	FDFU28KXE6F	FDFU45KXE6F	FDFU56KXE6F	FDFU71KXE6F
Nominal cooling capacity		kW	7.1	2.8	4.5	5.6	7.1
Nominal heating capacity		kW	8.0	3.2	5.0	6.3	8.0
Power source			1 Phase 220-240V, 50Hz				
Power consumption	Cooling	kW	0.09-0.10	0.09-0.10			
	Heating		0.09-0.10	0.09-0.10			
Sound power level		dB(A)	62	58	60		
Sound pressure level		dB(A)	Hi:43 Me:41 Lo:40	Hi:41 Me:38 Lo:36	Hi:43 Me:41 Lo:40		
Exterior dimensions H x W x D		mm	630x1481x225	630x1077x225			630x1362x225
Net weight		kg	40	25			32
Air flow (Standard)		m³/min	Hi:18 Me:15 Lo:12	Hi:12 Me:11 Lo:10	Hi:14 Me:12 Lo:10		Hi:18 Me:15 Lo:12
Air filter, Q'ty			Polypropylene net x1 (Washable)				
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2				
Installation data Refrigerant piping size		mm(in)	Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")	Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")		Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

Dimensions

All measurements in mm.

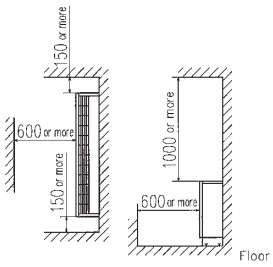
FDFL



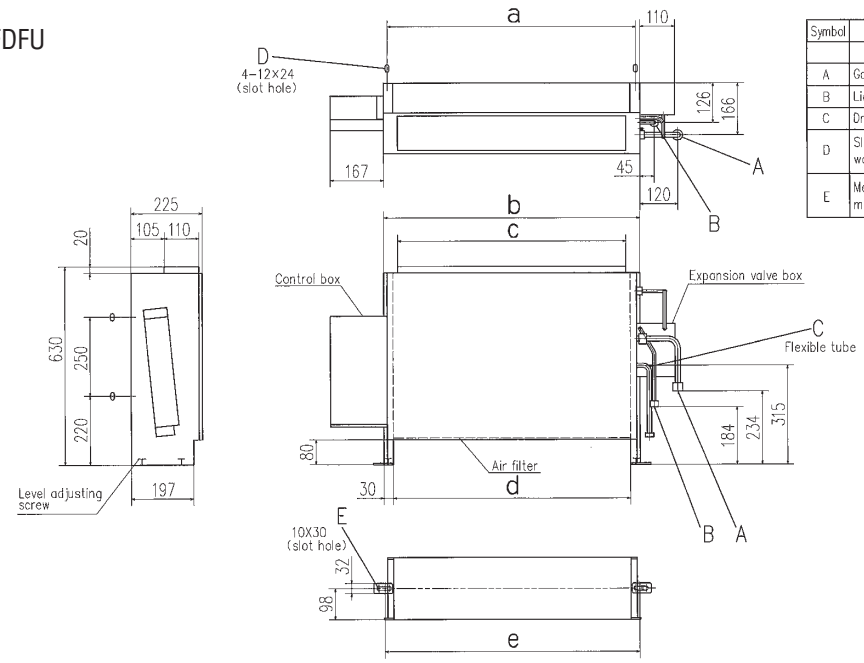
Symbol	Content	
	Model	FDFL71KXE6F
A	Gas piping (Accessory)	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Drain piping (Accessory)	PT20A female screw, 360mm
D	Slot hole for wall mounting	(M10)
E	Metal plate for floor mounting (Accessory)	(M8)

Note (1) The model name label is attached on the lid of the control box.

Space for installation and service



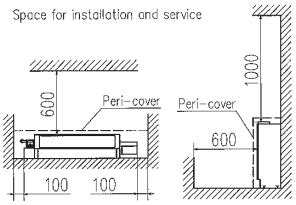
FDFU



Symbol	Content		
	Model	FDFU28KXE6F	FDFU45KXE6F,56KXE6F	FDFU71KXE6F
A	Gas piping (Accessory)	ϕ9.52(3/8")(Flare)	ϕ12.7 (1/2")(Flare)	ϕ15.88 (5/8")(Flare)
B	Liquid piping	ϕ6.35 (1/4")(Flare)		ϕ9.52 (3/8")(Flare)
C	Drain piping (Accessory)	PT20A female screw, 360mm		PT20A female screw, 360mm
D	Slot hole for wall mounting	(M10)		(M10)
E	Metal plate for floor mounting (Accessory)	(M8)		(M8)

Note (1) The model name label is attached on the lid of the control box.

Space for installation and service



Dimension Table

Unit:mm

model	a	b	c	d	e
FDFU28KXE6F, 45KXE6F, 56KXE6F	786	810	722	750	806
FDFU71KXE6F	1071	1095	1007	1035	1091

Outdoor Air Processing unit
FDU-F

Model No.

FDU650FKXZE1
FDU1100FKXZE1
FDU1800FKXZE1
FDU2400FKXZE1

Remote control (option)

Wired

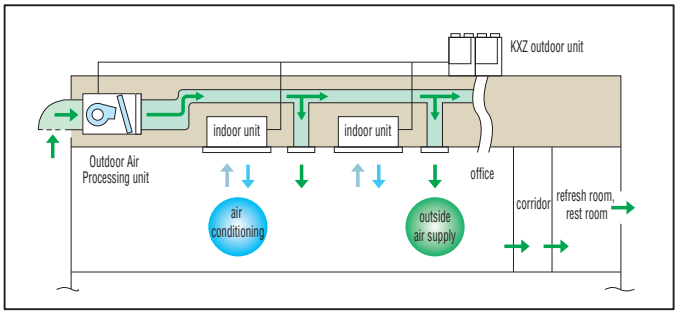
RC-EX3A **RC-E5** **RCH-E3**

Wireless

RCN-KIT4-E2

Air conditioning and intake of outdoor air are in the same system

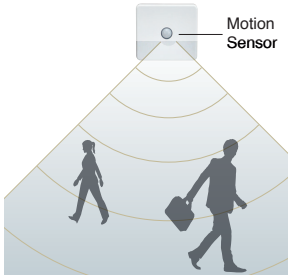
Outdoor Air processing unit can be connected in a KXZ system as one of the indoor unit series and can create fresh and comfortable air supply together from our high advanced technology.



Motion Sensor NEW (Option)

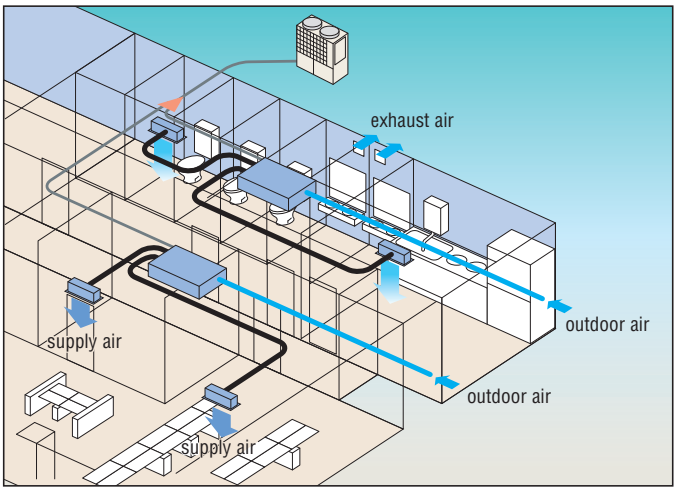
Motion sensor is equipped in the ceiling plane or wall plane and detects the presence/absence and activity of humans in a room to improve the comfort and energy saving performance of the unit.

LB-KIT



Compact design

Compact design at just 280(650, 1100), 379(1800, 2400)mm in height, high static pressure of 200Pa and the industry's lowest noise level can meet various kind of installation location for office, refresh room, restroom and kitchen of restaurant etc.



(1) This unit is the specific unit for processing the outdoor air temperature closer to the room temperature. For conditioning the room temperature a dedicated air-conditioner is required additionally.
(2) This unit monitors the outdoor air temperature and controls thermostat ON/OFF at the setting temperature by the remote controller, which indicates the outdoor air temperature for controlling thermostat ON/OFF. When thermostat is turned OFF, the operation is changed to the fan mode so that unprocessed outdoor air will be blown into the room directly. Therefore place the air outlet port or orient the air outlet direction not to blow air directly to persons in the room, especially in the small room such as a restroom and/or sanitary hot water supplying room.
(3) It is strictly prohibited to monitor the room temperature by switching to the thermistor at remote controller side and/or the optional remote thermistor. Otherwise dew formation at air outlet port and/or dew dripping may occur during cooling operation due to the lower outdoor air temperature. Therefore keep the remote controller of this unit in place closer to the administrator so as not to be touched it freely by the end user.
(4) Dehumidifying operation with this unit is prohibited.
(5) When handing over this unit to the end user, make sure to explain sufficiently about the foregoing cautions, the installation place and usage of remote control for this unit and the location of the air outlet.

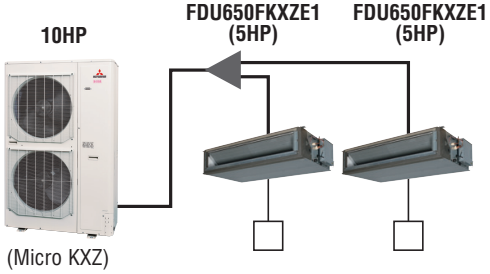
Connectivity with Outdoor units

FDU-F series are connectable to 8~60HP outdoor units, not connectable to 4~6HP, KXZ Lite.

Combination with Outdoor units

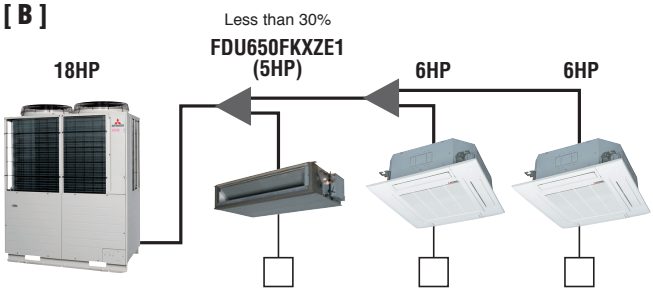
	case	Combination
A	In case OA processing units only are connected with outdoor units.	The total capacity of FDU-F is 50~100% of outdoor capacity and max quantity of FDU-F is 2 units.
B	In case both of OA processing units and dedicated air-conditioner are connected with outdoor units.	The total capacity of FDU-F and dedicated air-conditioners is 50~100% of outdoor capacity and max quantity of FDU-F should be below 30% of outdoor unit capacity.

[A]



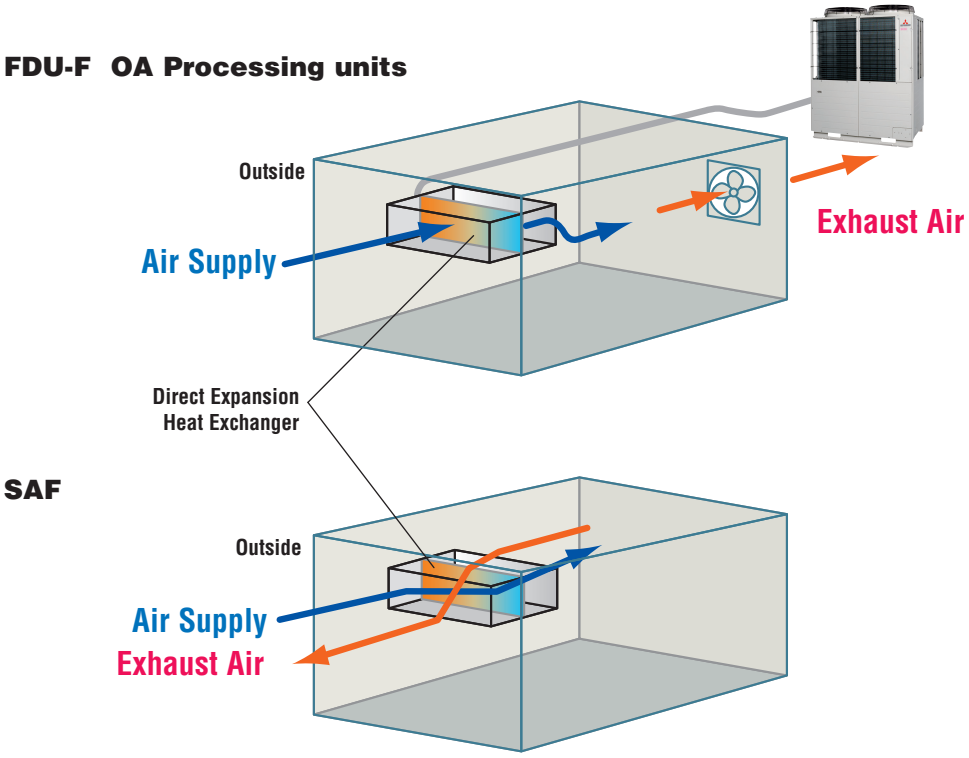
(Micro KXZ)

[B]



Concept (Difference between FDU-F and SAF)

SAF is the energy recovery ventilation unit which can recover heat energy from exhaust air to supply air and "has no air processing function, but FDU-F is air processing unit which can treat the supply air closer to room temperature by cooling or heating in connection with KXZ refrigerant system and exhaust air is discharged to outside of the room.



Specifications

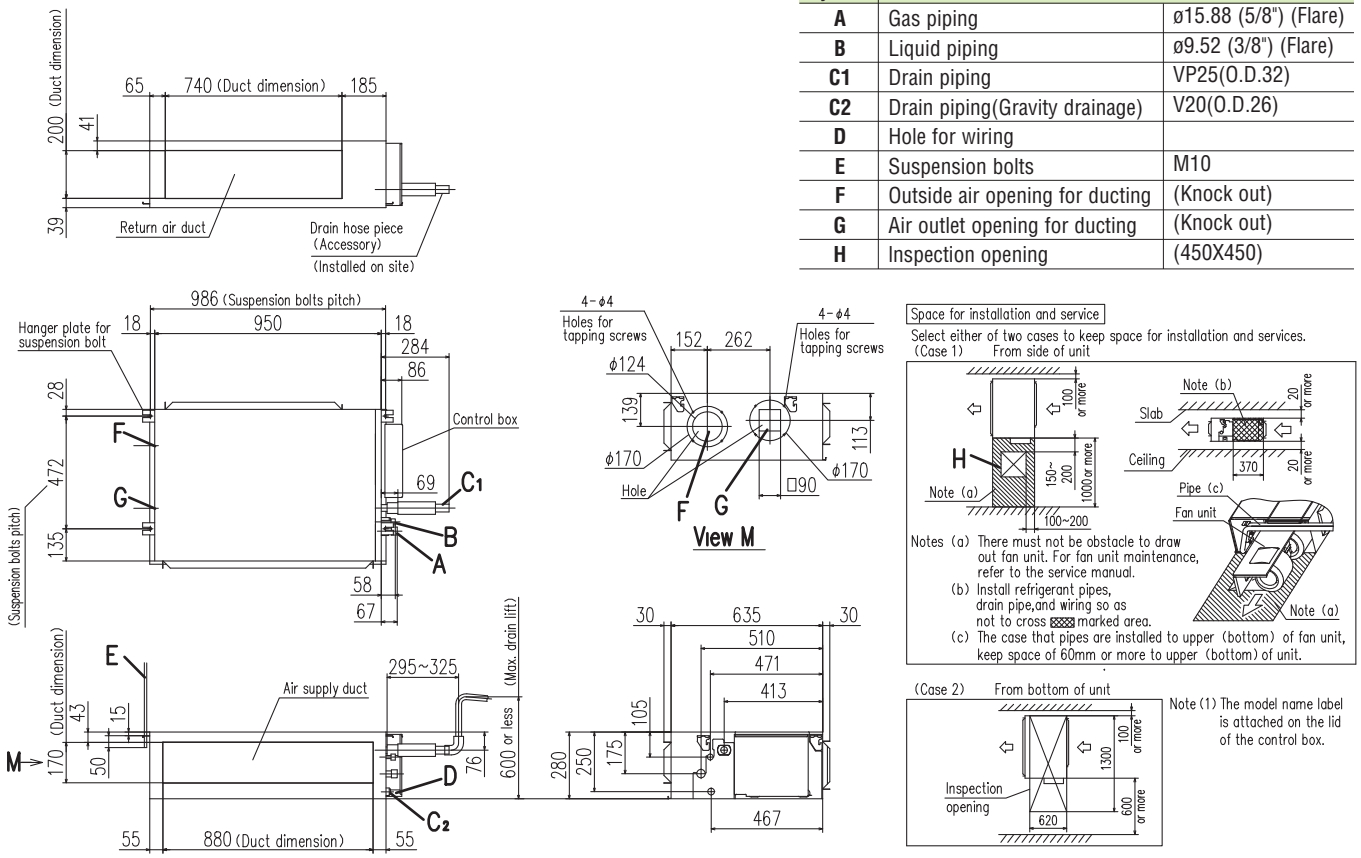
Item		Model	FDU650FKXZE1	FDU1100FKXZE1	FDU1800FKXZE1	FDU2400FKXZE1
Nominal cooling capacity		kW	9.0	14.0	22.4	28.0
Nominal heating capacity		kW	6.5	10.5	16.0	21.5
Power source			1 Phase 220-240V, 50Hz			
Power consumption	Cooling	kW	0.24-0.25	0.35-0.36	1.16-1.20	1.16-1.20
	Heating		0.24-0.25	0.35-0.36	1.16-1.20	1.16-1.20
Sound pressure level		dB(A)	Hi:31	Hi:37	Hi:42	Hi:45
Exterior dimension HxWxD		mm	280x950x635	280x1370x740	379x1600x893	
Net weight		kg	34	54	89	89
Air flow (Standard)		m³/min	Hi:11	Hi:18	Hi:30	Hi:40
External static pressure		Pa	200 (at Hi Air flow)			
Air filter, Q'ty			Procure locally			
Remote control(option)			wired:RC-EX3A, RC-E5, RCH-E3 wireless:RCN-KIT4-E2			
Installation data Refrigerating piping size		mm (in)	Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")		Liquid line:ø9.52(3/8") Gas line:ø19.05(3/4")	Liquid line:ø9.52(3/8") Gas line:ø22.22(7/8")

1. The data are measured at 33ºCDB 28ºCWB (68%RH) during cooling and 0ºCDB-2.9ºCWB (50%RH) during heating (no frost).
2. Temperature range of outdoor air must be 20~40ºCDB (32ºCWB) during cooling and 0~24ºCDB during heating.
3. Sound level indicates the value in an anechoic chamber. During operation these value are somewhat higher due to ambient conditions.
4. The factory E.S.P. setting is set within the range of 10 - 120Pa.If SW8-4 is turned to "ON", E.S.P. setting range can be changed to 10 - 200 Pa. (with RC-EX3A and RC-E5 only)

Dimensions

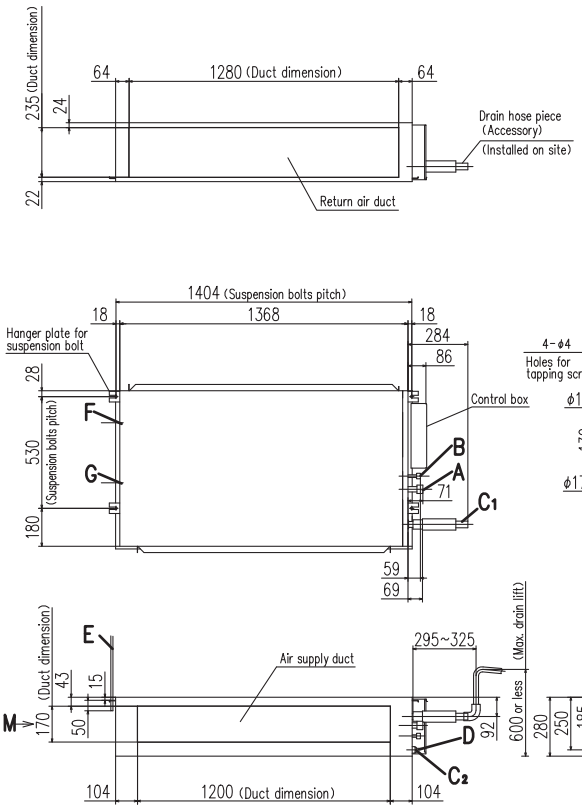
All measurements in mm.

FDU650FKXZE1

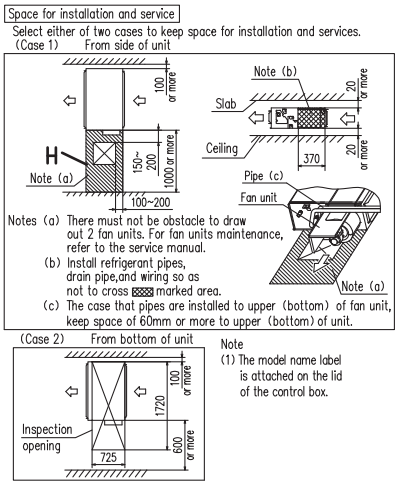


Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C1	Drain piping	VP25(O.D.32)
C2	Drain piping(Gravity drainage)	V20(O.D.26)
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection opening	(450X450)

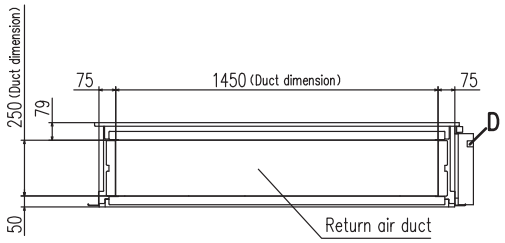
FDU1100FKXZE1



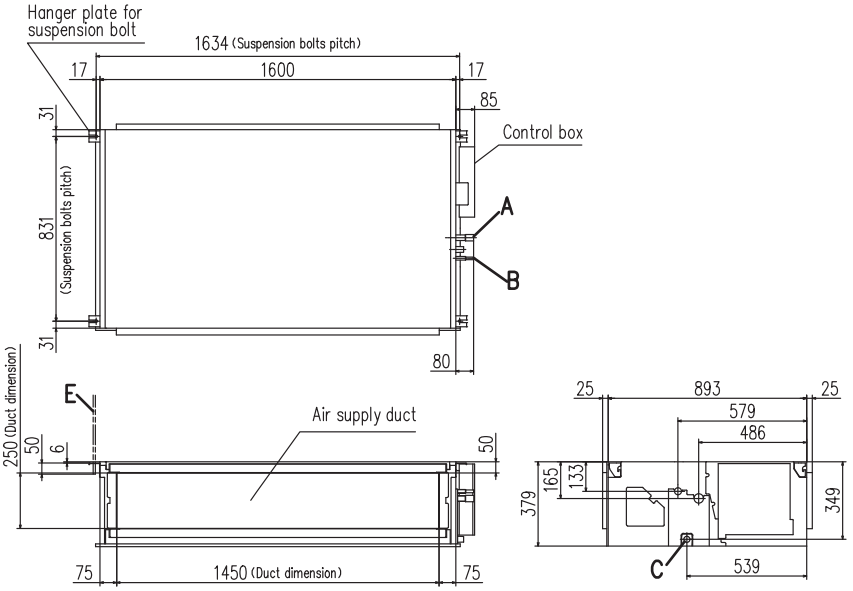
Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C1	Drain piping	VP25(O.D.32)
C2	Drain piping(Gravity drainage)	V20(O.D.26)
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection opening	(450X450)

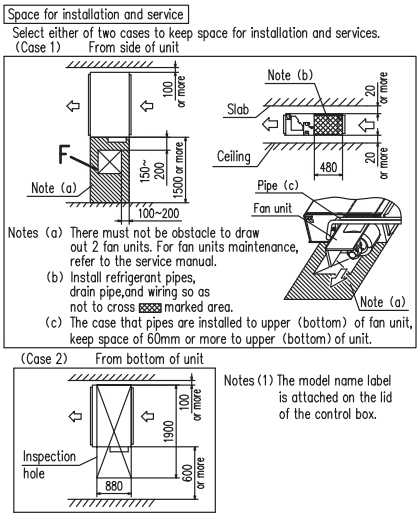


FDU1800FKXZE1, FDU2400FKXZE1



Symbol	Content		
	MODEL	1800	2400
A	Gas piping	ø19.05 (3/4")	ø22.22 (7/8")
B	Liquid piping	ø9.52 (3/8") (Brazing)	
C	Drain piping(Gravity drainage)	VP25(O.D.32)	
D	Hole for wiring		
E	Suspension bolts	M10	
F	Inspection hole	(450X450)	





Fresh Air Ventilation and Heat Exchange unit
SAF-E7

Model No.

SAF150E7
SAF250E7
SAF350E7
SAF500E7
SAF800E7
SAF1000E7

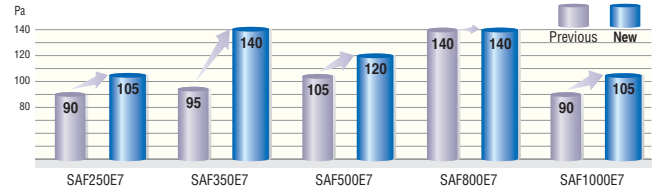
Energy Performance of Building Directive - EPBD

EPBD limit the amount of electrical/gas power to be used to provide heating or cooling in commercial buildings. Therefore the building designer needs to select energy efficient heating/cooling equipment, and to minimise energy losses through ventilation systems.

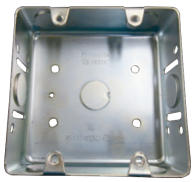
The SAF recovers heat energy which would otherwise be exhausted to atmosphere, and uses this energy to warm the air entering the building. The reverse happens in warmer climates, where the exhausted cool air is used to partially cool the incoming air.

Capturing this waste energy, means the heating/ cooling requirements of the building are reduced, so smaller size plant can be selected, savings can be made in long term energy consumption, and carbon emissions are reduced.

Increased external static pressure at UHi air flow



Switch box (option)



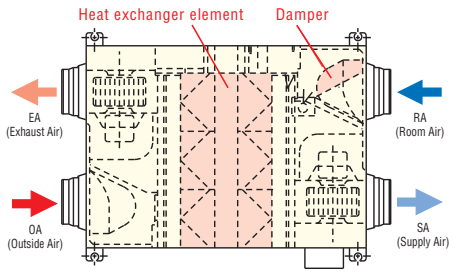
Remote control
The following functions are newly available.

- ON/OFF Timer – The hour and minute of timer on/off can be set.
- Filter Sign – Announces the due time for cleaning the air filter.

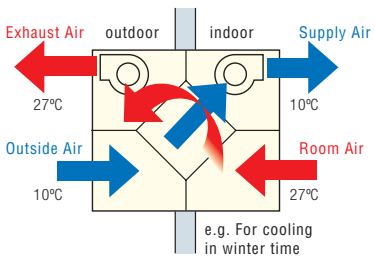
Specifications

Item				Model	SAF150E7	SAF250E7	SAF350E7	SAF500E7	SAF800E7	SAF1000E7
Power source					1 Phase 220-240V, 50Hz					
Exterior dimensions Height x Width x Depth				mm	270x970x467	270x882x599	317x1050x804	317x1090x904	388x1322x884	388x1322x1134
Exterior appearance					Galvanized steel sheet					
Power input				W	92-107	108-123	178-185	204-225	360-378	416-432
Running current				A	0.42-0.45	0.49-0.51	0.81-0.77	0.93-0.94	1.64-1.58	1.89-1.80
Capacity	UHi	Enthalpy exchange efficiency	Cooling	%	63	63	66	62	65	65
			Heating		70	70	69	67	71	71
		Temperature exchange efficiency			75					
	Hi	Enthalpy exchange efficiency	Cooling		63	63	66	62	65	65
			Heating		70	70	69	67	71	71
		Temperature exchange efficiency			75					
	Lo	Enthalpy exchange efficiency	Cooling		66	65	71	64	68	70
			Heating		73	72	73	69	74	76
		Temperature exchange efficiency			77	77	78	76	76	79
Motor & Q'ty				W	10 x 2	20 x 2	40 x 2	70 x 2	180 x 2	180 x 2
Air handling equipment Fan type & Q'ty					Sirocco fan x 2					
Air flow			UHi	m^3/h	150	250	350	500	800	1000
			Hi		150	250	350	500	800	1000
			Lo		120	190	240	440	630	700
External static pressure			UHi	Pa	80	105	140	120	140	105
			Hi		70	95	60	60	110	80
			Lo		25	45	45	35	55	75
Net weight				kg	25	29	49	57	71	83
Remote control					Included					
Air filter	Supply air				Protection for element (Washable) PS400					
	Exhaust air									

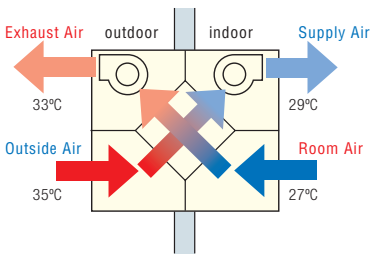
Structure (SAF800E7)



Principle of operation (simple ventilation)



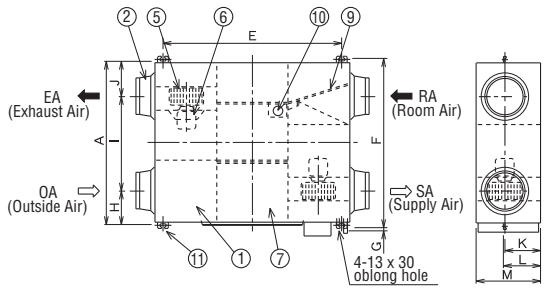
Principle of operation (heat exchanging)



Dimensions

All measurements in mm.

SAF150E7, SAF250E7, SAF350E7, SAF500E7



Applied duct

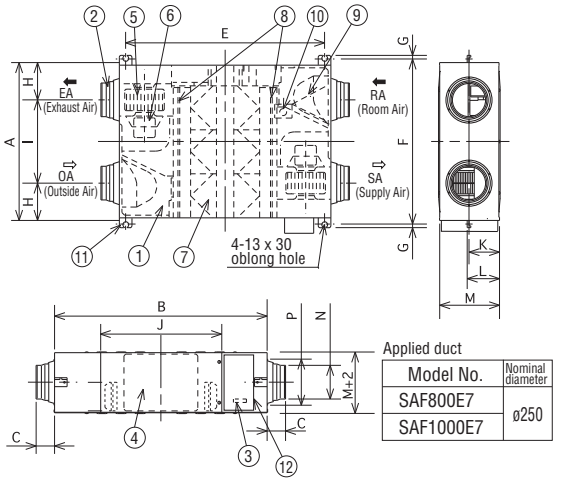
Model No.	Nominal diameter
SAF150E7	ø100
SAF250E7	ø150
SAF350E7	
SAF500E7	ø200

Dimension table

Unit:mm

Model	A	B	C	E	F	G	H	I	J	K	L	M	N	P
SAF150E7	467	970	49	810	525	19	82	303	82	135	159	270	ø98	ø110
SAF250E7	599	882	95		655		142	315	142				ø144	ø164
SAF350E7	804	1050	70	978	860		112	580	112	159	182	317		ø164
SAF500E7	904	1090		1018	960		132	640	132				ø194	ø210

SAF800E7, SAF1000E7



Applied duct

Model No.	Nominal diameter
SAF800E7	ø250
SAF1000E7	

Dimension table

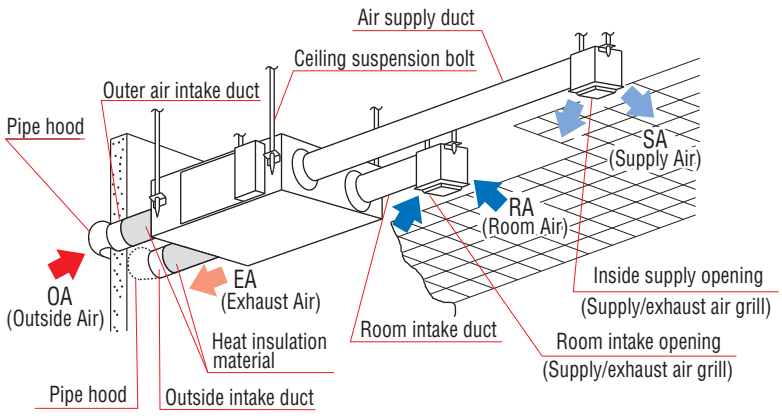
Unit:mm

Model	A	B	C	E	F	G	H	I	J	K	L	M	N	P
SAF800E7	884	1322	85	1250	940	19	228	428	612	194	218	388	ø242	ø258
SAF1000E7	1134				1190			678						

NO.	Name	Qt'y
①	Frame	1
②	Adaptor	4
③	Terminal board	1
④	Inspection Cover	1
⑤	Fan	2 ※
⑥	Motor	2 ※
⑦	Heat Exchange Element SAF150E7 SAF250E7 SAF350E7 SAF500E7 SAF800E7 SAF1000E7	 1 1 2 2 3 4
⑧	Filter	2
⑨	Damper	1
⑩	Damper Motor	1
⑪	Suspension fitting	4
⑫	Electrical components box	1

※Model SAF350E7, SAF500E7 have different fan and motor locations.

Installation reference



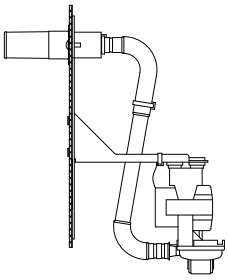
Note:An inspection port is needed for cleaning the heat exchanger and filter 1 or 2 times a year.

Fresh Air DX Assembly

Model No.
SAF-DX250E6
SAF-DX350E6
SAF-DX500E6
SAF-DX800E6
SAF-DX1000E6

Drain up kit (option, built-in type)
(600mm)

DXA-DU-E



Remote control (option)

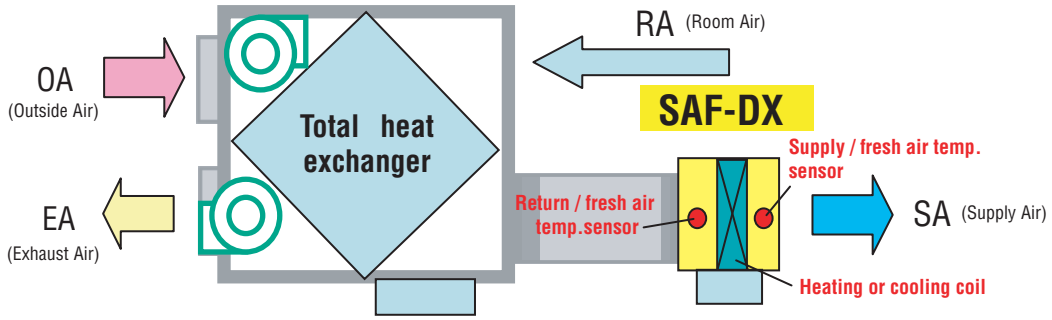
Wired

RC-E5 **RCH-E3**

Wireless

RCN-KIT4-E2

- SAF-DX is a heating or cooling coil incorporating KXZ series controls. It can be used in combination with our SAF series of total heat exchanger.
- Combination of SAF-DX together with other indoor units is possible. The capacity code index of each model is shown below and must be used when making the system selection. Total capacity code index must be within 100% of outdoor unit capacity code index.
- Remote control option is the same as with other indoor units (see above). Connection to all Superlink controls is also possible.
- Optional condensate lift mechanism is also available (600mm height).
- Return air temp. control or supply air temp. control can be selectable.



SAF-DX can provide heating or cooling to the fresh air supplied through a 3rd party air handling unit or total heat exchanger such as our SAF series.

Specifications

Item		Model	SAF-DX250E6	SAF-DX350E6	SAF-DX500E6	SAF-DX800E6	SAF-DX1000E6
Nominal cooling capacity *1		kW	2.0	2.8	3.6	5.6	6.3
Nominal heating capacity *2		kW	1.8	2.2	2.8	4.5	5.6
Capacity code			22	28	36	56	71
Power source			1 Phase 220-240V, 50Hz				
Power consumption	Cooling	W	7.2-7.2				
	Heating		7.2-7.2				
Running current	Cooling	A	0.05-0.05				
	Heating		0.05-0.05				
Exterior dimensions H x W x D		mm	315 x 452 x 422		315 x 537 x 422	315 x 682 x 422	315 x 822 x 422
Net weight		kg	12.3		13.6	16.1	18.4
Air flow (Standard)		m^3/h	250	350	500	800	1000
Internal resistance		Pa	38	66			
Remote control(option)			wired: RC-E5, RCH-E3 wireless: RCN-KIT4-E2				
Installation data Refrigerant piping size		mm(in)	Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8")		Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")		Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")

(1) The data are measured at the following conditions.

Item	Return/fresh air temperature		Outdoor air temperature		Standards
Operation	DB	WB	DB	WB	
Cooling*1	27ºC	19ºC	35ºC	24ºC	ISO-T1
Heating*2	20ºC		7ºC	6ºC	

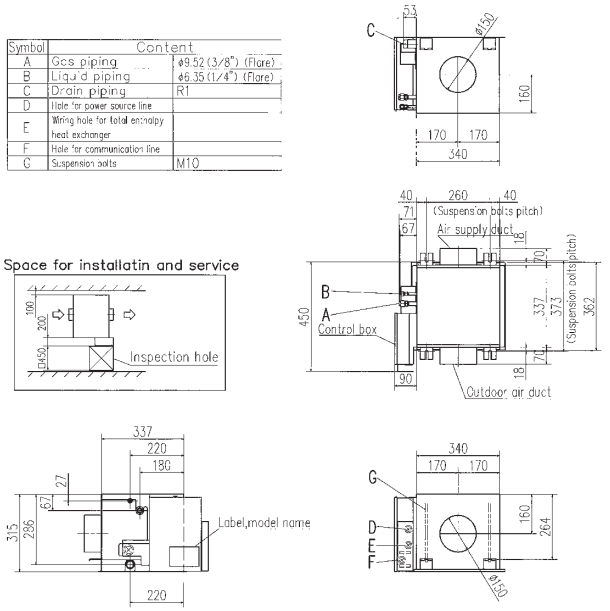
(2) This air-conditioner is manufactured and tested in conformity with ISO-T1 "UNITARY AIR-CONDITIONERS".

Dimensions

All measurements in mm.

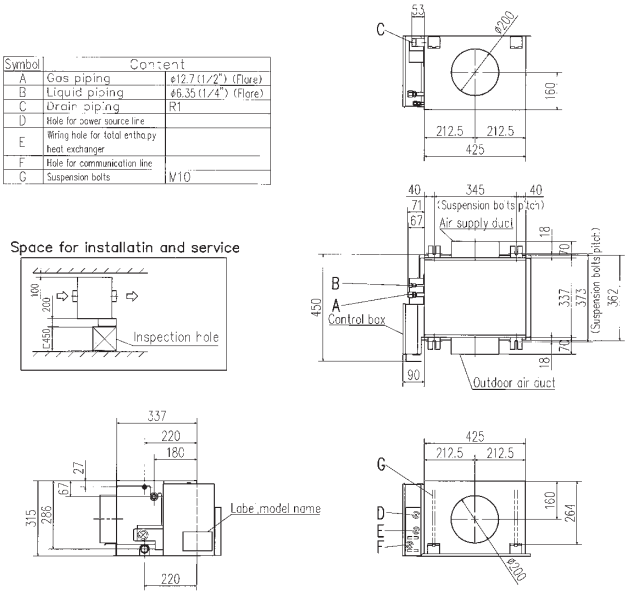
SAF-DX250E6,350E6

Symbol	Content	
A	Gas piping	ϕ9.52 (3/8") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C	Drain piping	R1
D	Hole for power source line	
E	Wiring hole for total enthalpy heat exchanger	
F	Hole for communication line	
G	Suspension bolts	M10



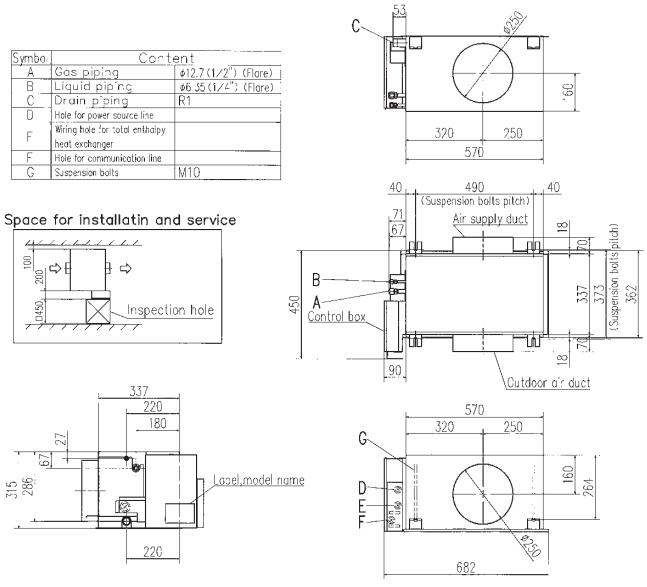
SAF-DX500E6

Symbol	Content	
A	Gas piping	ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C	Drain piping	R1
D	Hole for power source line	
E	Wiring hole for total enthalpy heat exchanger	
F	Hole for communication line	
G	Suspension bolts	M10



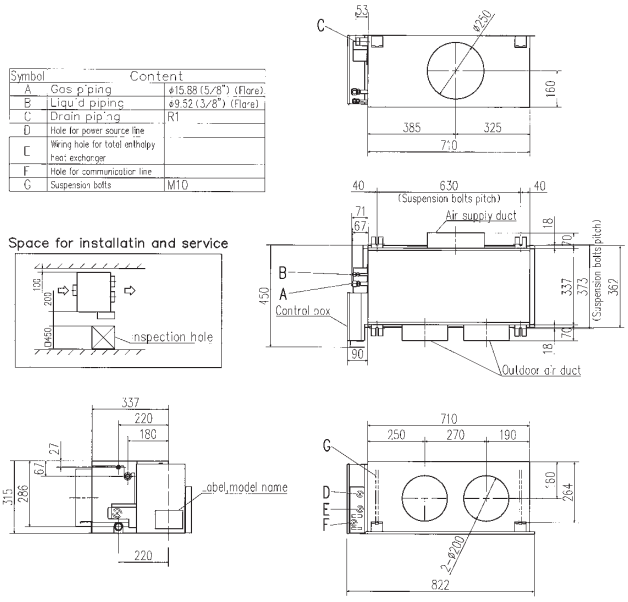
SAF-DX800E6

Symbol	Content	
A	Gas piping	ϕ12.7 (1/2") (Flare)
B	Liquid piping	ϕ6.35 (1/4") (Flare)
C	Drain piping	R1
D	Hole for power source line	
F	Wiring hole for total enthalpy heat exchanger	
F	Hole for communication line	
G	Suspension bolts	M10



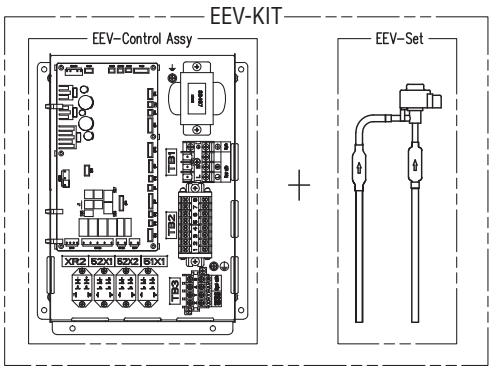
SAF-DX1000E6

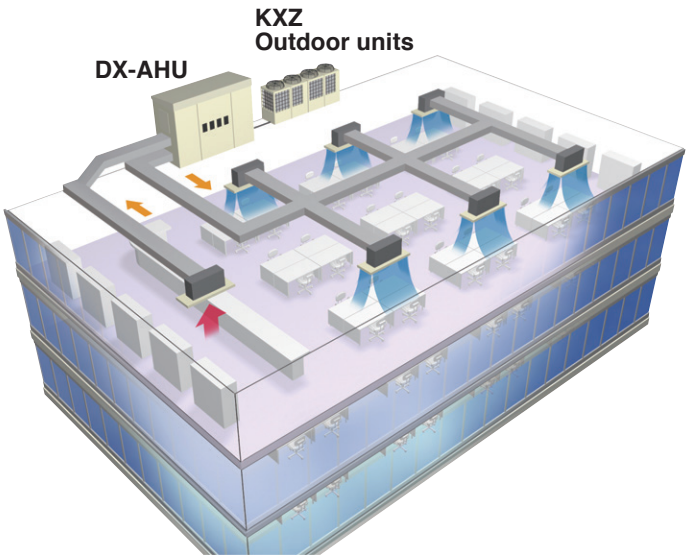
Symbol	Content	
A	Gas piping	ϕ15.88 (5/8") (Flare)
B	Liquid piping	ϕ9.52 (3/8") (Flare)
C	Drain piping	R1
D	Hole for power source line	
E	Wiring hole for total enthalpy heat exchanger	
F	Hole for communication line	
G	Suspension bolts	M10



EEV-KIT

- EEV-KIT is the control kit for operating the locally provided AHU or FCU with direct expansion heat exchanger coils in connection with the KXZ system.
  (AHU : Air Handling Unit, FCU : Fan Coil Unit)
- EEV-KIT is composed of one EEV-Control ASSY and one EEV-Set.





DX : Direct expansion coil

Features

EEV-Control Assy has 2 types.

Refrigeration system	EEV-Control Assy	
	EEVKIT6-E-M	EEVKIT6-E-C
Single	~~Not Use~~	1 box-Many boxes
Multiple	1 box (for master)	Many boxes(for slave)

EEV-Set Select from following 3 types according to the coil capacity.

Type	EEV6-71-E	EEV6-160-E	EEV6-280-E
Capacity	22-71	90-160	224-280

System configuration

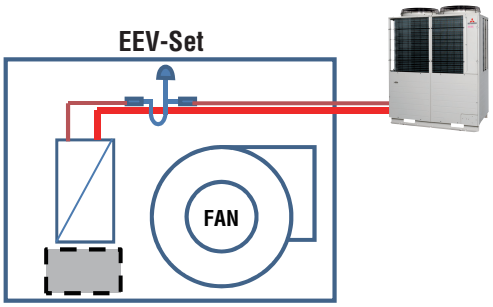
- Single refrigeration system EEVKIT6-E-C ··· Possible with multiple
- Multiple refrigeration system EEVKIT6-E-M (1) + EEVKIT6-E-C ···
  Possible with multiple (Max32)
- EEVKIT6-E-C is common for both single and multiple refrigeration systems

Single refrigerant system

- Single refrigeration system is one that can have multiple outdoor units on one refrigerant pipe work circuit.
- There are 2 types of EEV-KIT systems that can be built into the single refrigeration system.
- System A : one EEV-KIT.
- System B : multiple EEV-KIT's.

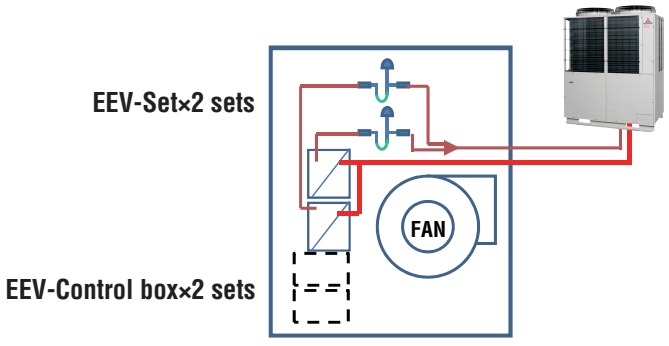
System A

- This system has only one set of EEV-KIT built into one indoor unit with only one heat exchanger. This system can be applied to an indoor unit whose capacity is up to 10HP.



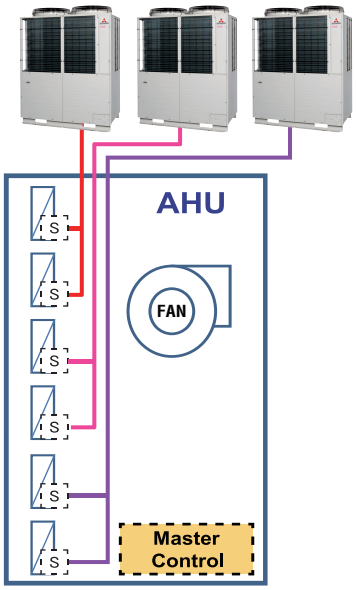
System B

- System B is a system that has multiple EEV-KIT's built into one indoor unit with multiple heat exchangers on one refrigerant circuit.
- This system can be applied up to 60HP (for KXZ) AHU capacity.



Multiple refrigerant system

Multiple refrigeration system is an AHU system with
1) Multiple independent refrigerant circuits
2) One master control to control the whole system.



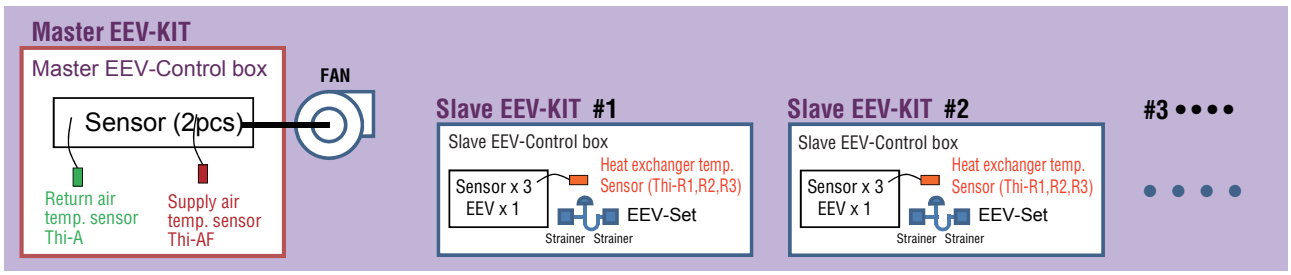
Advantages

- Large systems are possible [max capacity 896kW (Indoor unit : 28kW x 32)]
- External control
- Capacity step control

Additional parts over a single refrigeration system

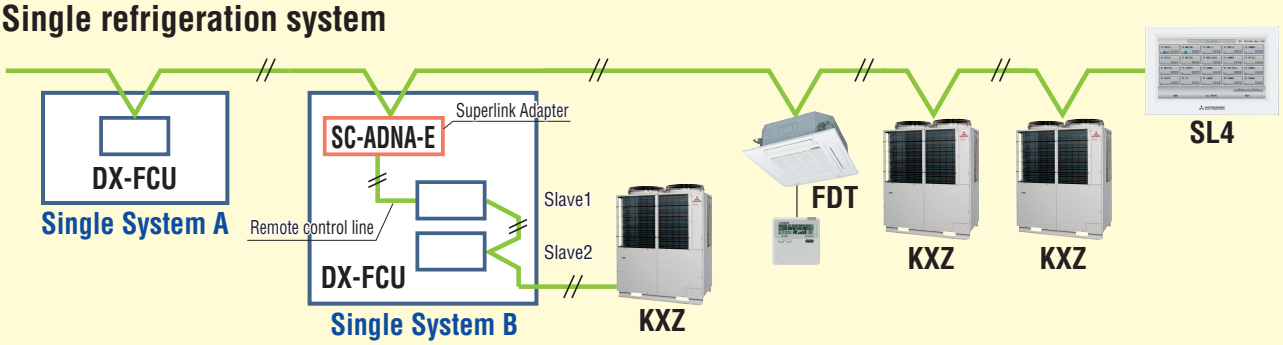
- One master control

The slave EEV control and EEV set are the same as a single refrigeration system.

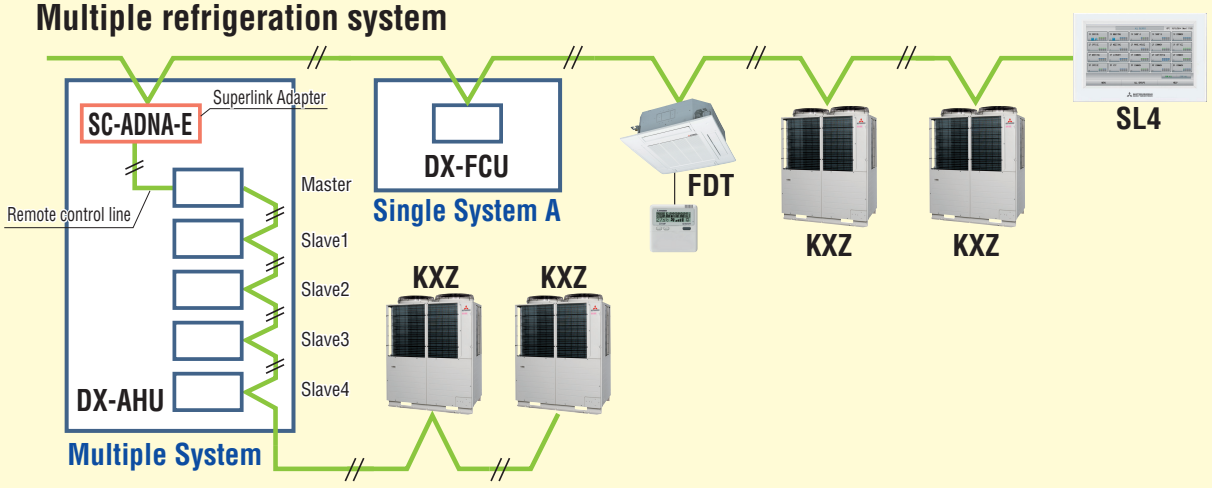


Connection to SUPERLINK II

Single refrigeration system



Multiple refrigeration system



HMU-KIT

- HMU-KIT is the control kit for operating HMU (HMU : Hydro Module Unit) with water heat exchanger, water pump and EEV-set.

HMU-CONTROL ASSY HMU-KIT

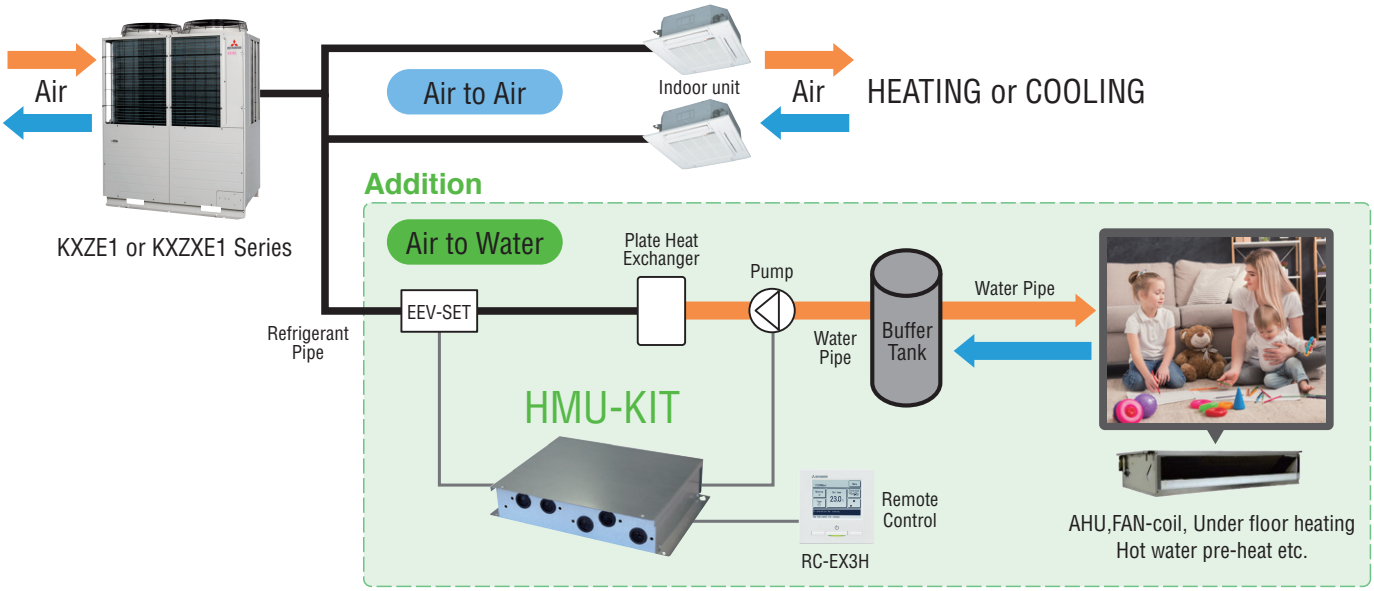
EEV-Set Select from following 2 types according to the capacity.

Type	EEV6-160-E	EEV6-280-E
Capacity	140	280

System image

Water heating / heating & cooling / Pre-heat of Domestic Hot Water (DHW)

MHI's HMU has the flexibility to adapt efficiently to any building requirement. A wide range of indoor units and simple piping systems enable an easy fit to even the most complex configurations.
The HMU is designed to achieve a hot water temperature of 55°C.



Features

1. Target outlet water temperature constant control

- This is achieved by controlling compressor frequency and control of EEVs.
- Controlling the capacity of HMUs in accordance with the load.

2. Mixed operation

- Mixed operation is possible in the air to air indoor unit and HMU.
- During the operation of the only HMU , it can accommodate a wide range of outlet water temperature controlled by a dedicated control.
- When the system is in mixed operation, the HMU or air conditioner can be set as priority.

3. Antifreeze control

- Anti-freeze protection of plate heat exchanger is enabled during defrost operation.

4. External equipment linked

- External output of interlocking signal to an external heat source for the secondary heating.
- Possible target setting temperature change from the external input. (3 points)
- Water pump control (ON / OFF) possible.

*HMU is designed for closed loop heat exchange applications. Connections to any other open loop systems (such as domestic water) should be handled via a secondary heat exchanger.

Application example

Heating system using HMU kit and air conditioner propose various solutions.

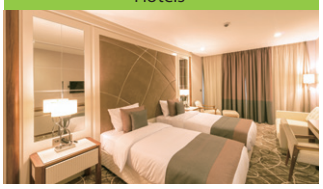
Office

Health clubs

Care homes

Restaurants

Hotels



School / University

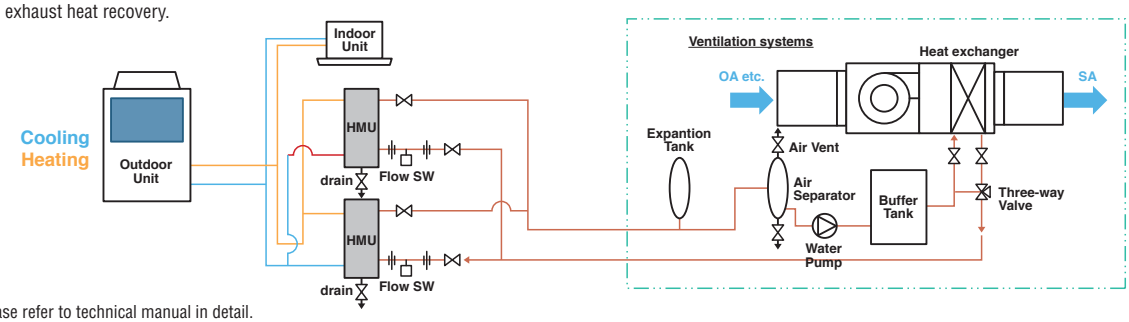
Specification

Model			HMU-KIT	
Power source			1-phase / 220-240V / 50Hz	
Nominal capacity	Cooling	[kW]	14.0 , 28.0	
	Heating	[kW]	14.0 , 28.0	
Connectable outdoor unit			KXZE1, KXZXE1	
Dimensions	Height	[mm]	100	
	Width	[mm]	495	
	Depth	[mm]	355	
Inlet Water temp. range of cooling	HMU only	[℃]	10～30	
	Not HMU only		19～24	
Inlet Water temp. range of heating	HMU only	[℃]	10～50	
	Not HMU only		20～35	
Water flow rate range		[%]	50～100	
MIN outlet water temp of cooling	HMU only	[℃]	5	
	Not HMU only		14	
MAX outlet water temp of heating	HMU only	[℃]	55	
	Not HMU only		40	
			＜Nominal cooling condition＞	＜Nominal heating condition＞
Outdoor temp.		[℃]	35℃DB	7℃DB／6℃WB
Inlet water temp.		[℃]	23	30
Outlet water temp.		[℃]	18	35
Water flow rate		[%]	100	100

HMU-KIT is applicable on the capacity of 14.0 and 28.0kW. They can be connected to the KXZ series, but the connection limit is different. If only the HMU is connected, the MIN outlet water temp of cooling is 5°C and MAX outlet water temp of heating is 55°C. If HMU and normal indoor units are connected, the MIN outlet water temp of cooling is 14°C and MAX outlet water temp of heating is 40°C. Water temperature range controlled by outdoor temperature. Please refer to technical manual in detail.

Ventilation (potential application of the HMU)

HMU can provide hot or cool water to the heat exchanger of an AHU which supplies the fresh air. In the application shown below, the ventilation air from this system would be better suited for introduction into the return air or mixing section duct of the indoor fan coils, this is due to the lack of that would provide the room with neutral conditioned air. It is also possible to be used in conjunction with a total heat exchanger, to reduce the load of processing outside air by the exhaust heat recovery.



＊Please refer to technical manual in detail.

Control Systems
<Individual control>

Remote Control line up

	indoor unit	remote control
wired	all models	RC-EX3A
		RC-E5
		RCH-E3

	indoor unit	remote control	indoor unit	remote control	indoor unit	remote control
wireless	FDT	RCN-T-5AW-E2	FDTS	RCN-TS-E2	FDE	RCN-E-E3
	FDTC	RCN-TC-5AW-E2	FDK22~56	RCN-K-E2	FDFW	RCN-FW-E2
	FDTW	RCN-TW-E2	FDK71	RCN-K71-E2	others*	RCN-KIT4-E2

*FDTQ, FDU, FDUM, FDUT, FDUH, FDU-F

Wired remote control (option)

RC-EX3A

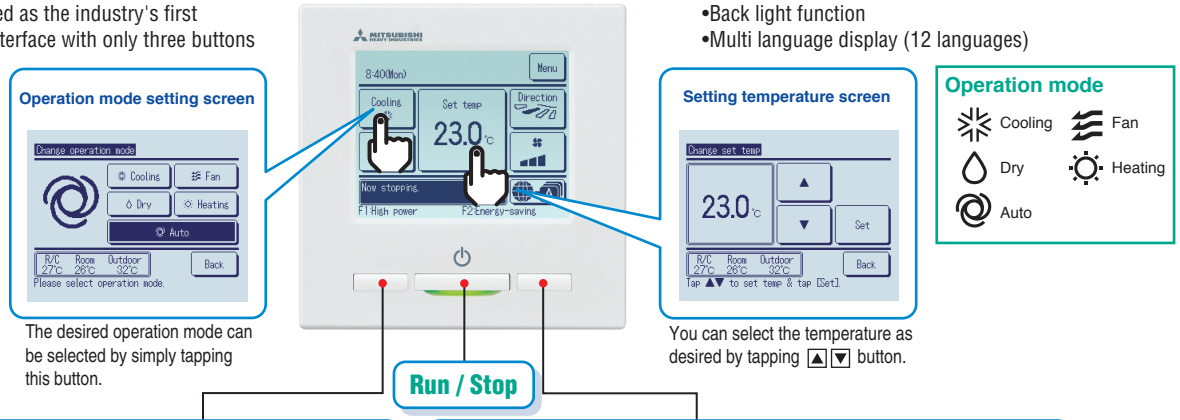
Intuitive touch controller with Liquid Crystal Display

User friendly

- LCD panel with light tap operation introduced as the industry's first
- Simple interface with only three buttons

Easy view

- Big LCD with 3.8 inch full dot display
- Back light function
- Multi language display (12 languages)



2. Main functions

	Function name	Description
Economy & Timer	Energy-saving operation	Since the capacity is controlled automatically based on the outdoor temperature, energy can be saved without losing comfort.
	Sleep timer	Set the time period from start to stop of operation. The selectable range of setting time is from 30 to 240 minutes (at 10-minuteintervals).
	Set temperature auto return	The temperature automatically returns to the previously set temperature.
	Set ON timer by hour	When the set time elapses, the air conditioner starts.
	Set OFF timer by hour	When the set time elapses, the air conditioner stops.
	Set ON timer by clock	The air conditioner starts at the set time.
	Set OFF timer by clock	The air conditioner stops at the set time.
	Weekly timer	On or Off timer can be set on a weekly basis.
	Peak-cut timer	Capacity control can be set by using peak cut function on RC-EX3A for better energy saving. Five-step capacity control is available.
	Home leave operation	When the unit is not used for a long period of time, the room temperature is maintained at a moderate level, avoiding extremely hot or cool temperatures.
Comfort	Big LCD & Touch screen panel	Large 3.8 inch screen has resulted in improved visibility and operability.
	Easy modification of Individual flap control	User can visually confirm and set the direction of flaps using the visual display on the remote controller.
	Automatic fan speed *1	The micro-computer automatically adjusts the airflow effectively to follow the changes of return air temperature.
	Temp increment setting	Temperature increment for the change of the set temp can be changed.
	Silent mode	Set the period of time to operate the Outdoor unit with prioritizing the quietness.
Convenience	Function switch	The function switch allows user to select and set two functions among available functions.
	Favorite setting	Operation mode, set temperature, fan speed and air flow direction automatically adjust to the programmed favorite setting.
	Adjusting Brightness of the background light	The brightness of the background light can be adjusted by 10 stages.
	LCD contrast setting	This function allows user to adjust LCD display contrast.
	High power operation	High Power Mode increases the unit operating ability for 15 minutes to quickly adjust the room temperature to a comfortable level.
	Back light setting	This convenient function allows user to see controls under low light conditions.
	Administrator settings	This function only allows specific individuals to operate the unit.
	Setting temp range	Limited range of setting temperature in the heating or the cooling operation can be selected.
	External Input/Output Function	The external input/output of indoor unit by remote controller can set input/output based on user needs.
	Select the language	Set the language to be displayed on the remote control.
Service	USB connection (mini-B)	This function allows batch input of schedule timer settings and other settings involving a large amount of data.
	Error code display	This function allows user to check information displayed when abnormal function of the unit occurs.
	Operation data display	Displays various types of air conditioner operation data in real time.
	Contact company display	Address of the service contact is displayed.
	Filter sign	Announces the due time for cleaning of the air filter.
	Static pressure adjustment	Allows user to adjust duct static pressure using the remote control.
	Backup Control	Allows for rotation control, fault backup control, and capacity backup control.

*1 Cannot be used when a centralized control remote is connected.

Wireless remote control (option)

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

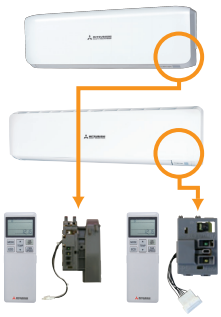
RCN-T-5AW-E2

RCN-TC-5AW-E2

RCN-TW-E2

RCN-TS-E2

RCN-K-E2,
RCN-K71-E2



RCN-E-E3

RCN-FW-E2

RCN-KIT4-E2

*The wireless remote control is not applicable to the Individual flap control system.

Wired remote control (option)

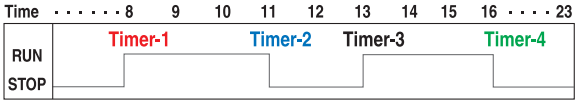
RC-E5

The RC-E5 controller enables extensive access to service and maintenance technical data combined with easy to use functions and a clear LCD display.

Weekly timer function as standard

RC-E5 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



Run hour meters to facilitate maintenance checking

RC-E5 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.

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-E5 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)

Simple remote control (option)

RCH-E3 (wired)

Designed specially for hotel rooms, the controller's buttons are limited only to the minimum required functions such as ON/OFF, mode, temperature setting and fan speed. It is really simple and easy to use.

Up to 16 units

It can control up to 16 units individually, with pressing the AIR CON No. button.

AUTO restart

This function allows starting the air conditioner automatically when power supply is restored after power failure or by turning on the power switch.

*RCH-E3 is not applicable to the Individual flap control system.
*When RCH-E3 is used, the fan speed setting can only be set to 3 speed settings (Hi-Me-Lo).

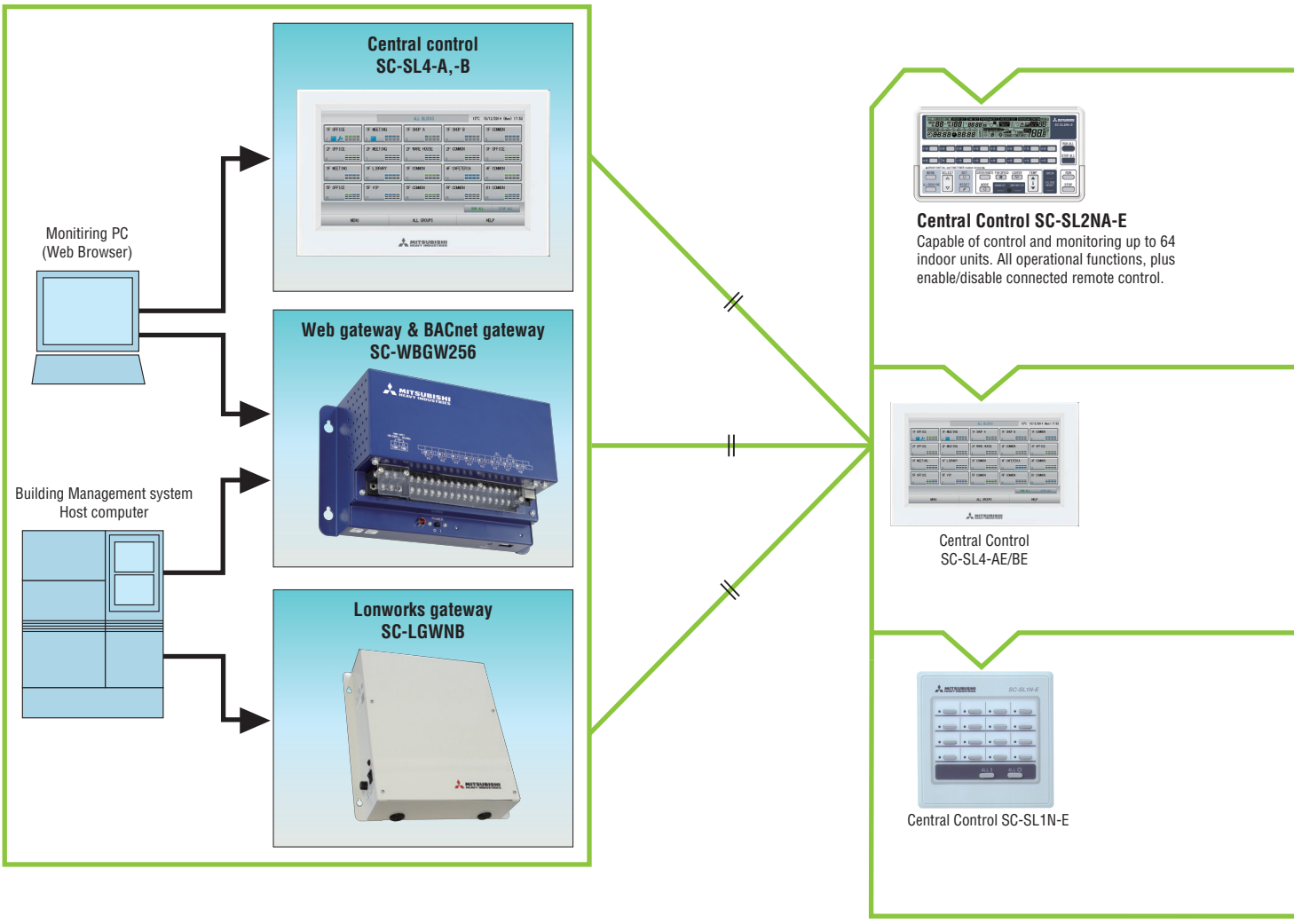
Thermistor (option)

SC-THB-E3

In case the sensor integrated in the indoor unit or in the remote controller is unable to sense the room temperature correctly, or an individual controller in each room is not required but a temperature sensor is (as when a central control system is in place), install SC-THB-E3 in an adequate location in the room.

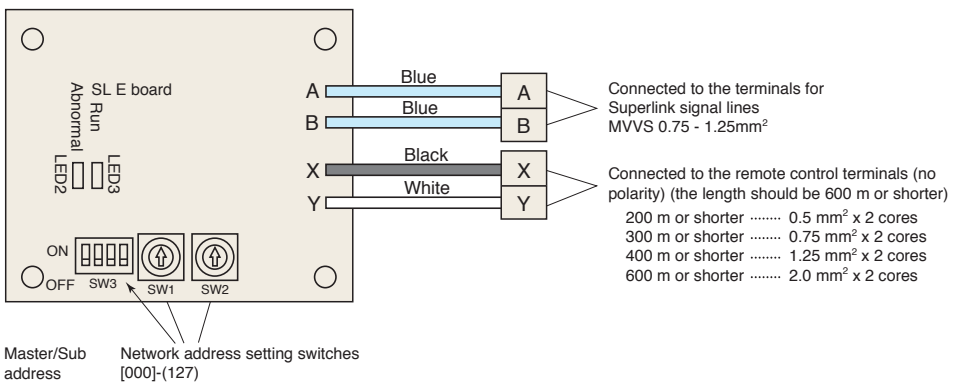
<SUPERLINK®- Ⅱ Control System>

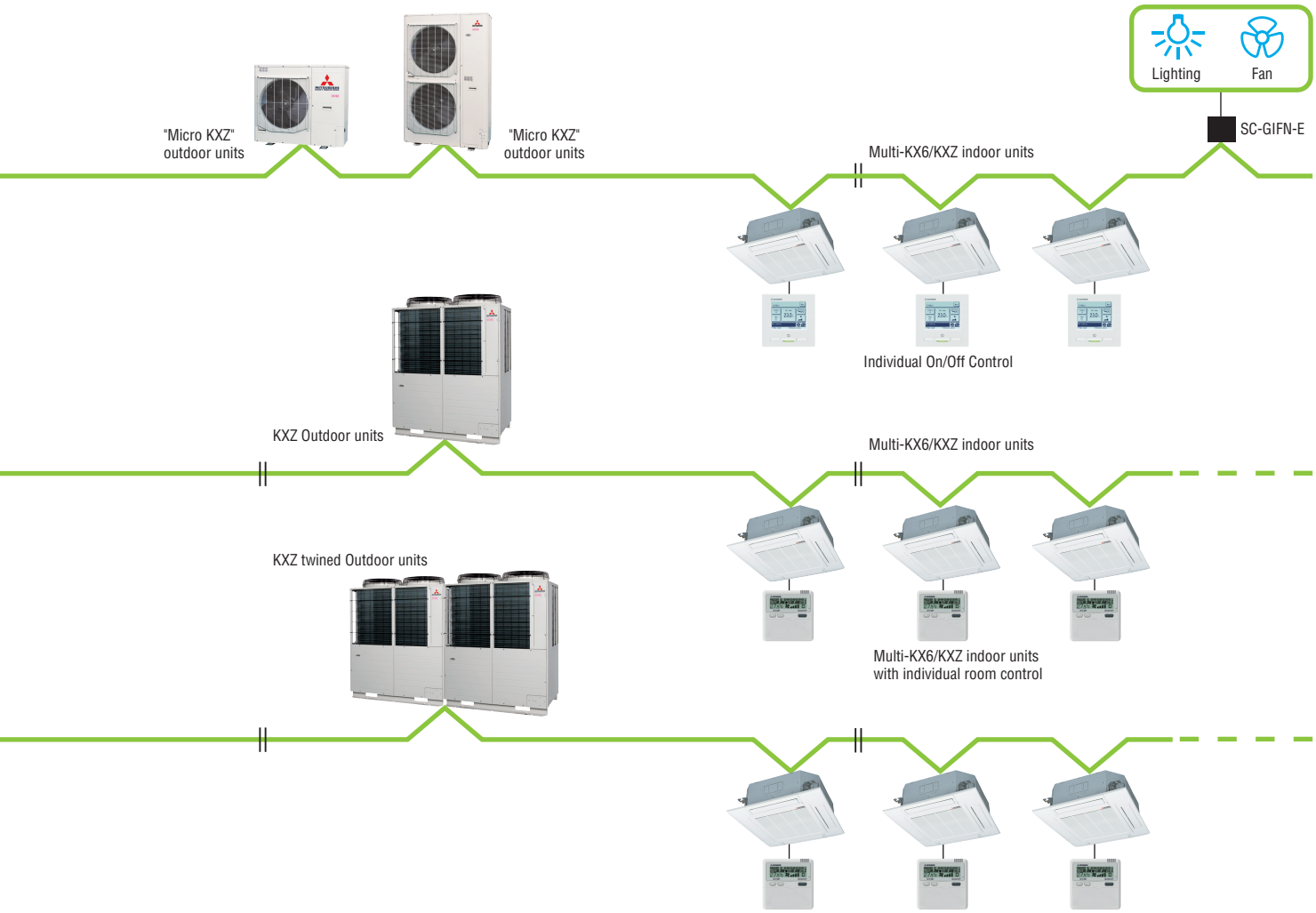
Mitsubishi Heavy Industries Thermal Systems has now combined simplicity of installation with our highly sophisticated Superlink-Ⅱ control system, to offer building owners and occupiers a comprehensive control and management system, while providing complete commissioning and service maintenance assistance for installers and service engineers. The Superlink-Ⅱ network utilises two wire, non-polar cable - for further details of wiring. Superlink-Ⅱ is an advanced high speed data transmission system that can connect up to 128 indoor units and 32 outdoor units as a network. Mitsubishi Heavy Industries Thermal Systems offers a wide range of control options for the Superlink-Ⅱ network to suit any application large or small, as well as connection to new or existing building management systems. Individual Mitsubishi Heavy Industries Thermal Systems split systems can also be integrated on to the Superlink-Ⅱ network using SC-ADNA-E.

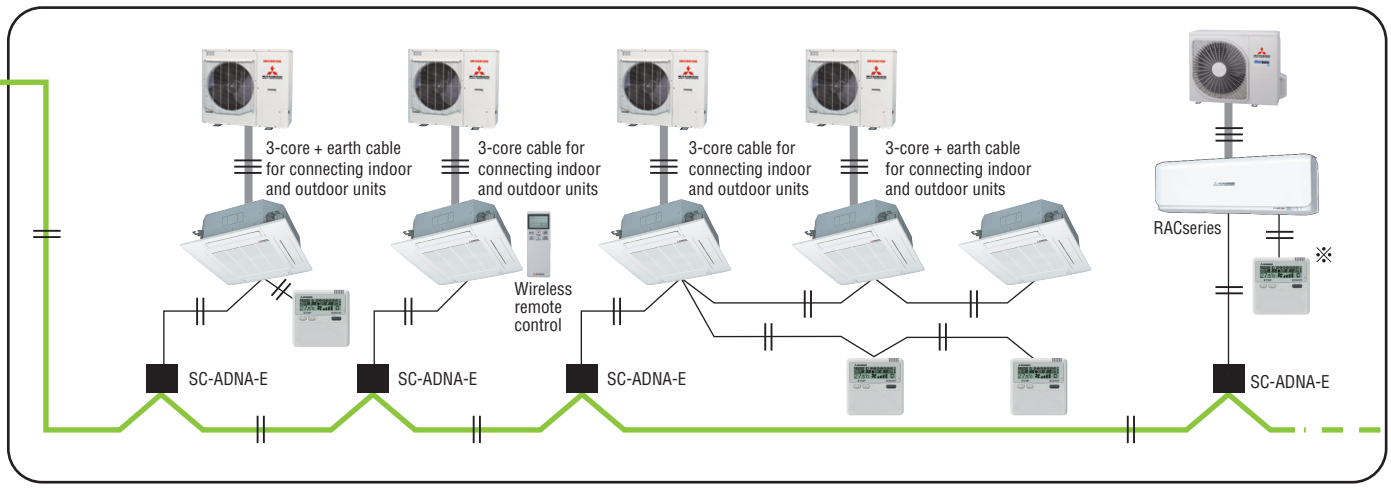


SUPERLINK E BOARD(SC-ADNA-E)

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



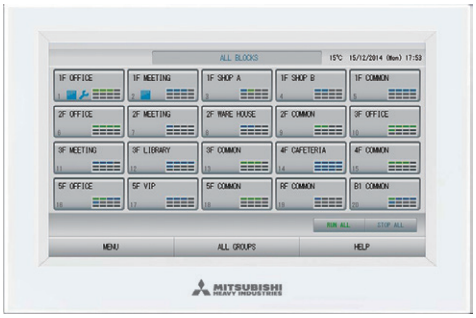




※SC-BIKN2-E is necessary to connect to wired remote controller.

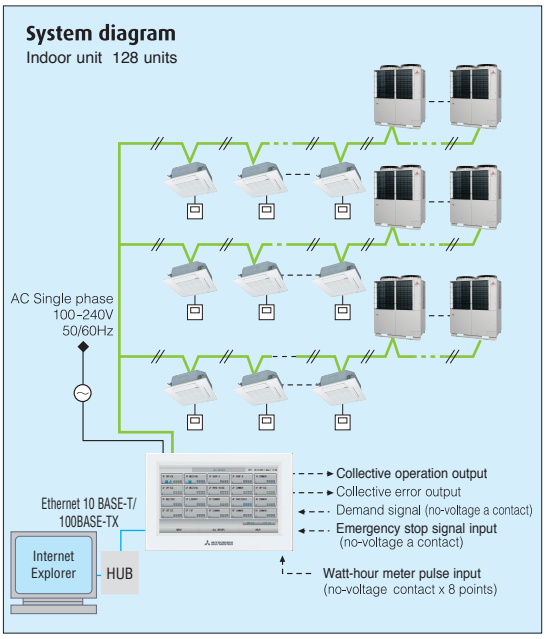
<Central Control>
SC-SL4-AE/BE

Mitsubishi Heavy Industries Thermal Systems introduces the full colour touch screen central control SC-SL4-AE/BE, with 9 inch interactive LCD display. Offers control, monitoring, scheduling and service/maintenance functions for up to 128 indoor units.
Control with PC is available by use of internet explorer.



Indoor units can be controlled, scheduled, monitored and either individually, as groups or as blocks of groups with the following functions:

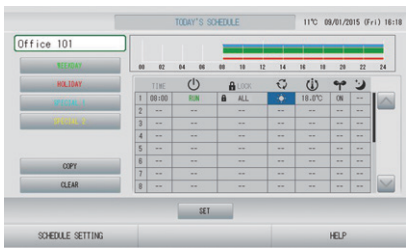
Control	Monitoring	Scheduling	Administration/Service
Run/Stop / Home leave	Operating state	Yearly schedule	Block definition, Floor layout
Mode (cool/heat/fan/dry/Auto)	Mode	Today's schedule	Group definition
Set temperature	Set temperature	Detailed daily schedule	Unit definition
Operation permitted/prohibited	Room temperature	Season setting	Time and date setting
Fan speeds	Operation permitted/ prohibited		Alarm history
Air direction	Fan speed		Energy consumption calculation period
Filter sign reset	Air direction		Energy consumption, cumulative operation time
Demand control (3 steps)	Filter sign		Flap control setting
Emergency stop	Maintenance (1, 2 or back-up) Outdoor air temperature		Operation data monitoring Data logging (Run / Stop set temperature , room temperature , outdoor air temperature)



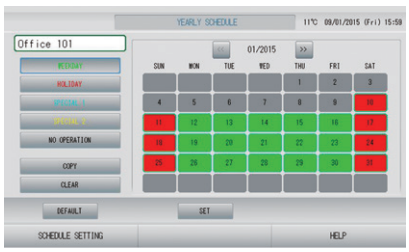
PC requirements: Windows Vista or Windows 7, 8.1, 10
Monitor resolution 1280 x 1024 or more.
Web browser requirements: Internet Explorer 11

Schedule setting

For each group
Schedule settings for each group are possible. The RUN/STOP/HOME LEAVE time, operation mode, remote control Lock/Unlock setting, temperature setting, energy setting, and silent mode can be set up to 16 times per day.

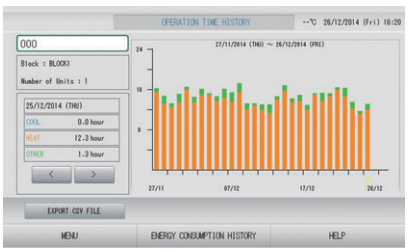


Yearly Schedule
Schedule settings for a year are also possible. The weekday, holiday, special day 1 or special day 2 can be selected and set.



Operation time history

Possible to check operation time history for cooling and heating separately.

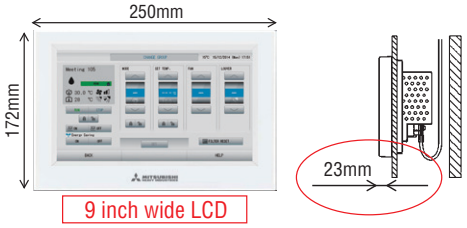


Alarm history

A maximum of 300 records is displayed for the history of error occurrence and restoration in the unit of air-conditioner.
It is possible to output the history data to a CSV data file.

High visibility

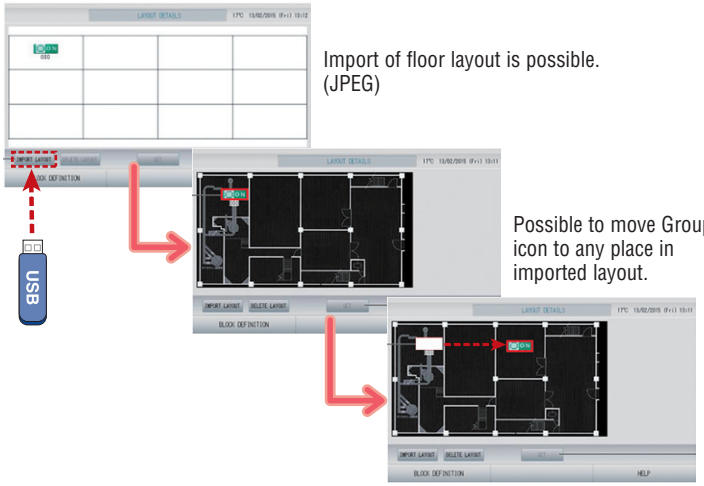
Increasing in size from 7 to 9 inches



Contrast between five colours for icon display and black light base screen has achieved high visibility.

Green : in operation
Blue : stop
Red : error
Yellow : communication error
Gray : no groups

Block layout function

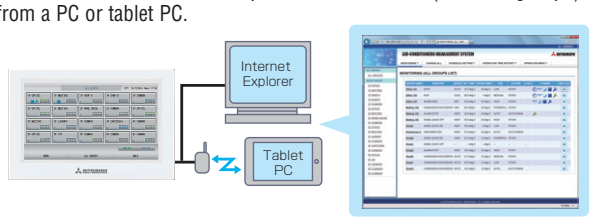


Import of floor layout is possible. (JPEG)

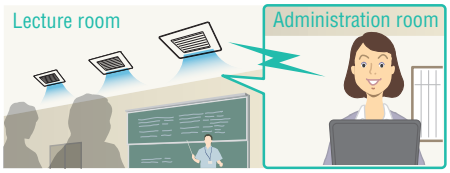
Possible to move Group icon to any place in imported layout.

Web function

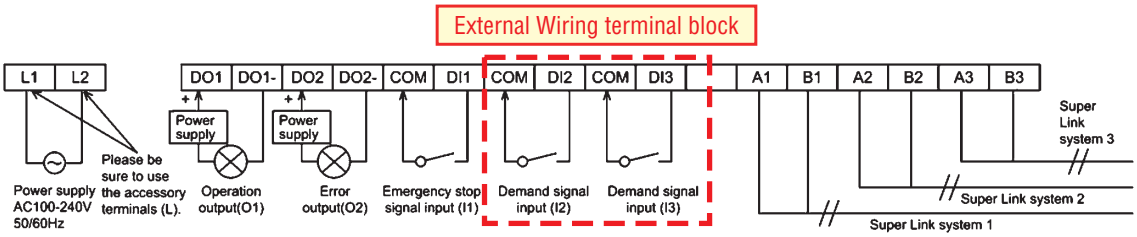
You can monitor and control up to 128 indoor units (Max.128 groups) from a PC or tablet PC.



<Example>
Monitoring and operating air-conditioners in a lecture room of a university



3 levels of demand control from 2 external inputs



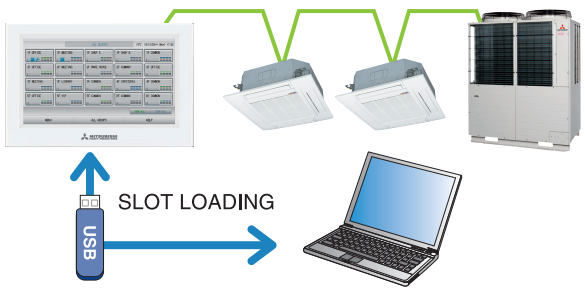
Demand level	Control	Not objective			Set to D1			Set to D2			Set to D3		
		Set temp.	Operation mode	Center/ Remote	Set temp.	Operation mode	Center/ Remote	Set temp.	Operation mode	Center/ Remote	Set temp.	Operation mode	Center/ Remote
0	Normal	–	–	–	–	–	–	–	–	–	–	–	–
1	Temp. shift	–	–	–	Shift	–	Center	–	–	–	–	–	–
2	Fan (1stage)	–	–	–	–	Fan	Center	–	Fan	Center	–	–	–
3	Fan (2stage)	–	–	–	–	Fan	Center	–	Fan	Center	–	Fan	Center

Demand level 1 – Any indoor unit set to D1 (Demand level 1)has its temperature set point shifted by +2°C in cooling mode or -2°C in heating mode and cannot be operated from the local remote controller
Demand level 2 – Any indoor unit set to D1 or D2 switch to fan only mode and cannot be operated from the local remote controller
Demand level 3 – Any indoor unit set to D1 or D2 or D3 switch to fan only mode and cannot be operated from the local remote controller

Electric power calculation function:

(for SC-SL4-BE only)

SC-SL4-BE gives electric power consumption data (kWh) for each indoor unit , each group , each SUPERLINK-II system , and each watt-hour meter input.



	SC-SL4-BE
Export data by	USB / LAN
Calculation software	Included
Watt-hour meter pulse input (Maximum)	8
Max connectable indoor units	128

Item	Model	SC-SL4-AE/SC-SL4-BE
Ambient temperature during use		0 ~ 40°C
Power supply		1 Phase 100-240V 50/60Hz
Power consumption		9W
External dimensions (Height x Width x Depth)		172mm x 250mm x 23 (+70) mm
Net weight		2.0kg
Number of connectable units (indoor units)		up to 128 units
LCD touch panel		Colour LCD, 9 inches wide
Inputs	SL (Superlink) signal inputs	1 system (Super link-II)
	Watt-hour meter pulse input*	8-point, pulse width 80ms or more
	Emergency stop signal input*	1 point, non-voltage a contact input continuous input (closed, forced stop)
	Demand signal input*	2 point, non-voltage a contact input continuous input (closed, demand control)
Outputs	Operation output	1 point, maximum rated current 40mA, DC24 V All units stop; Open, any unit operating;Close
	Error output	1 point maximum rated current 40mA, DC24 V Normal; closed. If even one unit is abnormal; Open (Open/closed can be changed)

* The receiving side power supply is DC 12V (10mA).
The air conditioning charges calculations of this unit are not based on OIML, the international standard.

SC-SL1N-E

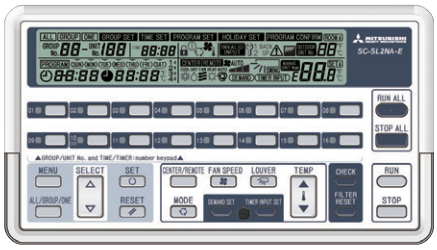
Start/stop control of up to 16 indoor units either individually or collectively.

Simple centralised control.

1. The SC-SL1N-E is connected to the Superlink-Ⅱ network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to 16 units, with the sixteen operation button.
3. The unit or group numbers in operation or in need of service are displayed with an LED.
4. Collective start/stop is also available through the simultaneous on/off button.
5. Up to 12 SC-SL1N-E units can be connected to a Superlink-Ⅱ network (consisting of up to 128 indoor units).
6. If a power failure occurs, the SC-SL1N-E will resume the operation of the system according to a stored operation condition, once power is restored.

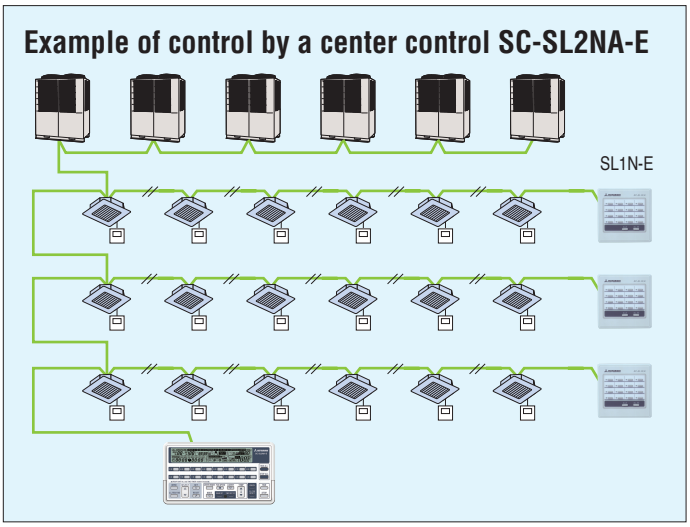
SC-SL2NA-E

Central control of up to 64 indoor units including weekly timer function as standard.



1. The SC-SL2NA-E is connected to the Superlink-Ⅱ network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to16 units, or 16 groups of units, with the sixteen operation buttons.
3. It also monitors and controls the following functions for individual units, groups of units or the complete network: operation mode, set point temperature, return air temperature, louvre position, error code. Air flow and center lock function.
4. The unit or group numbers in operation or in need of service are displayed with an LCD.
5. Collective start/stop is also available through the simultaneous on/off button.
6. If a power failure occurs, the SC-SL2NA-E will resume the operation of the system according to a stored operation condition, once power is restored.
7. The SC-SL2NA-E can be connected to an external timer to facilitate timed on/off cycles.

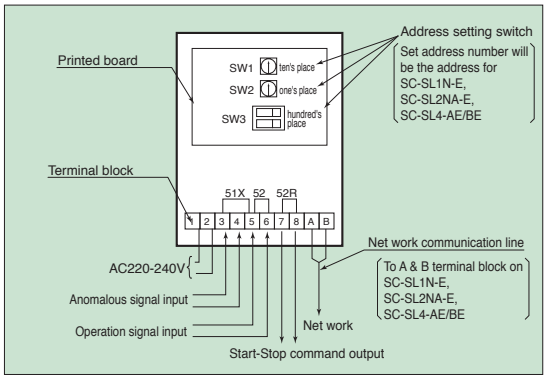
Example of control by a center control SC-SL2NA-E



An SC-SL2NA-E performs the start/stop control, monitoring and mode setting of up to 64 units. It is a high quality air conditioner control system that allows up to 64 indoor units to be freely grouped into 1 to 16 groups.
It allows not only the start/stop control but also the monitoring, display of operation statuses such as in operation or in need of service and mode setting such as switching of operation modes of connected units collectively, by group or individually.
• Outer dimensions: H120 x W215 x D25+35*mm.
35* is the measurement including the part contained in a recess.

SC-GIFN-E Interface kit

• Applicable products
Ventilation fan, Air purifier
• By using SC-GIFN-E together with central control such as SC-SL1N-E, SC-SL2NA-E and SC-SL4-AE/BE, you can start-stop, operate & monitor the operation of applicable products.



Note:Please consult dealer for combination of center controls and Building Management Systems interface units.

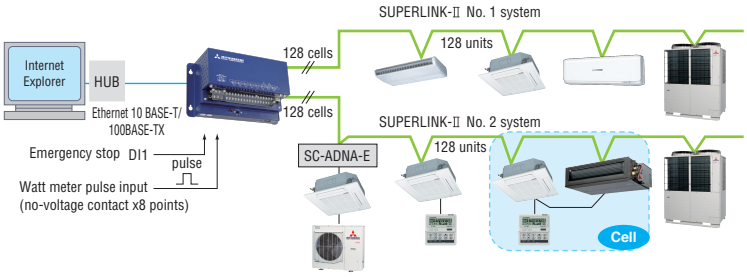
<Building Management Systems>
SC-WBGW256 (Web gateway+BACnet gateway)

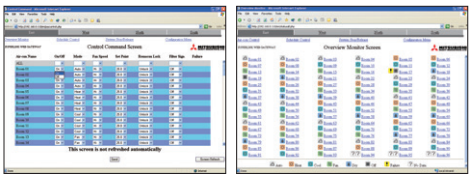
Production by order

SC-WBGW256 controls and monitors of up to 256 cells (some cells can have two or more indoor units and total number of indoor units can be up to 256 units) centralised to a network PC using the Superlink-Ⅱ web gateway. Simple installation is assured with no special software requirements, operation is via Internet Explorer. A low power embedded CPU and compact flash ROM ensure a large storage capacity with high reliability (no moving parts such as a PC fan, etc). An IP address filter function combined with three-level user authentication check also ensures security.
Also, SC-WBGW256 can be used as interface devices that convert Mitsubishi Heavy Industries Superlink-Ⅱ communication data to BACnet code and are controlled centrally from a building management system.

Additional engineering service cost etc. is required.
Please consult your dealer when using this central control.

[In case of web gateway]

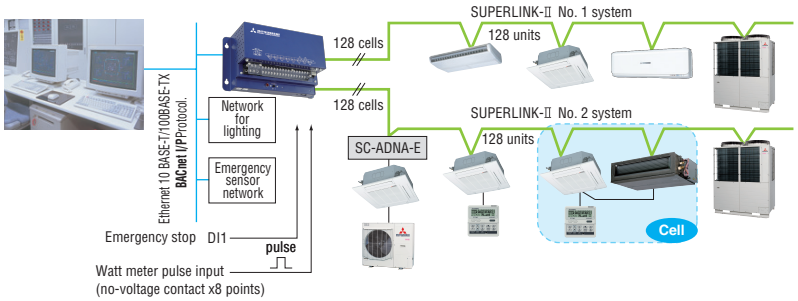


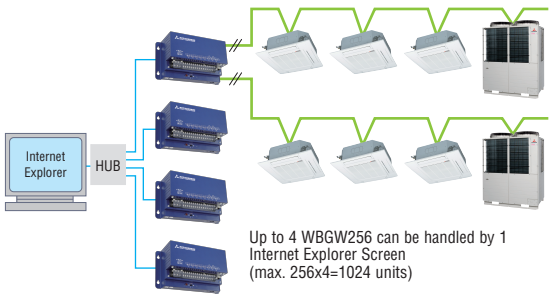


PC requirements: Windows 7 or Windows 8.1.
Monitor resolution 1364 x 768.

Users can manage up to 1024 units by connecting the four devices!!

[In case of BACnet gateway]



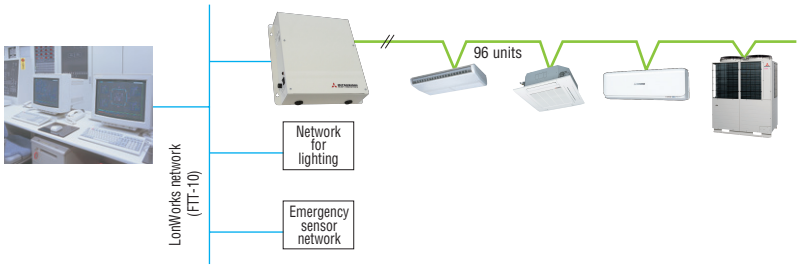


Up to 4 WBGW256 can be handled by 1
Internet Explorer Screen
(max. 256x4=1024 units)

SC-LGWNB (LonWorks gateway)

Production by order

SC-LGWNB is an interface device that converts Mitsubishi Heavy Industries Superlink-Ⅱcommunication data to LonWorks code. Control and monitoring functions of the a/c system for up to 96 indoor units can be integrated to a central control point via the building management system network.



Additional engineering service cost etc. is required.
Please consult your dealer when using this gateway.

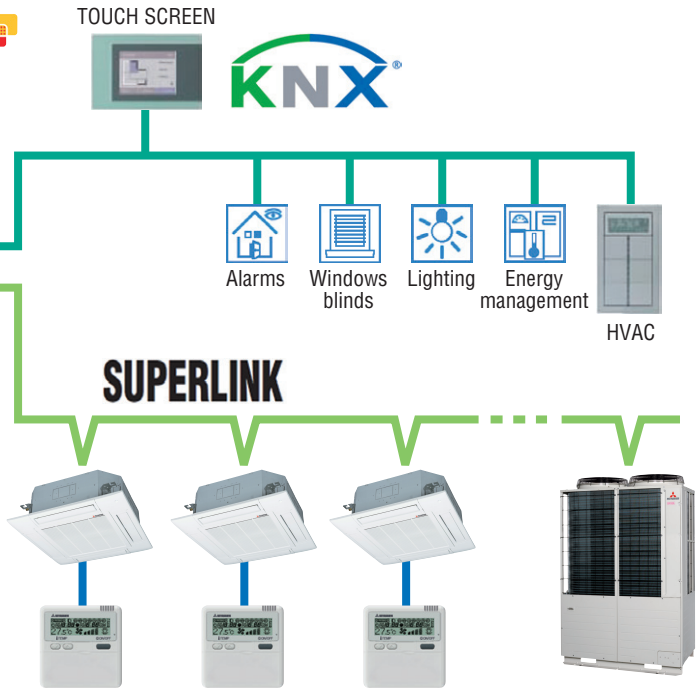
INTESIS BMS Interface for Mitsubishi Heavy Industries Thermal Systems air conditioners

All technical support, including specifying work, compatibility issues, product quality (repair and replacement issues), product liability issues and the required after sales service (including spare parts supply) will be provided by Intesis as it is an Intesis product.
Product sales and delivery will be conducted by Intesis as well.
For details concerning such matters please directly contact Intesis.

Integration of Mitsubishi Heavy Industries Thermal Systems VRF in your KNX installation by Superlink

MH-AC-KNX-48
(Max 48 indoor units / Superlink I & II)
MH-AC-KNX-128
(Max 128 indoor units / Superlink II)

INTEGRATED GATEWAY

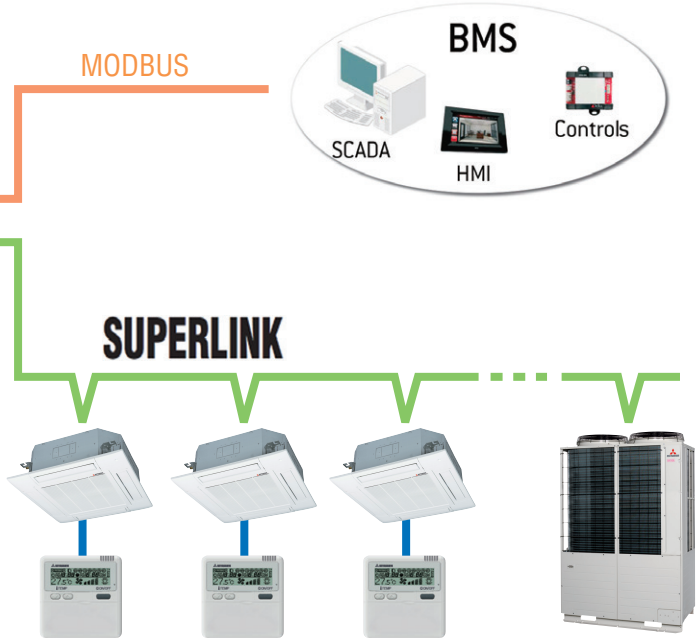


- Bidirectional: Supervision and Control
- Robust and reliable hardware
- Direct connection to KNX TP-1 BUS
- Independent management of communications
- Power supply: 230 VAC 50/60Hz
- Wall mounting case

Integration of Mitsubishi Heavy Industries Thermal Systems VRF in your Modbus installation by Superlink

MH-AC-MBS-48
(Max 48 indoor units / Superlink I & II)
MH-AC-MBS-128
(Max 128 indoor units / Superlink II)

INTEGRATED GATEWAY



- Bidirectional: Supervision and Control
- Robust and reliable hardware
- Modbus TCP or Modbus RTU RS-485/RS-232
- Independent management of communications
- Power supply: 230 VAC 50/60Hz
- Wall mounting case

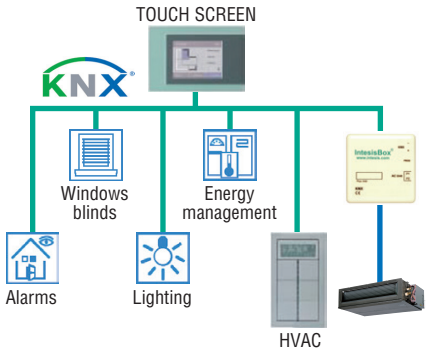
Integration of Mitsubishi Heavy Industries Thermal Systems PAC in your KNX installation by Remote control line

MH-RC-KNX-1i

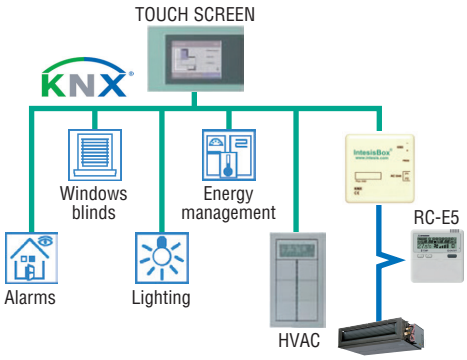
IntesisBox®

- Protocol : KNX TP-1 bus
- Dimension : 71 x 71 x 27 mm
- External Power supply : no need

Example :
Device as Master



Example :
Device as Slave



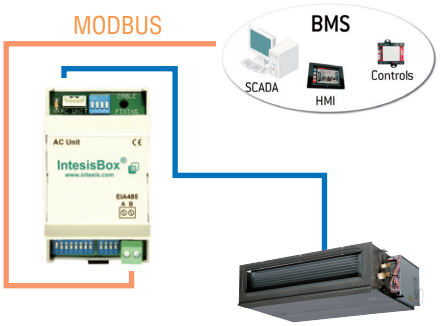
Integration of Mitsubishi Heavy Industries Thermal Systems PAC in your Modbus installation by Remote control line

MH-RC-MBS-1

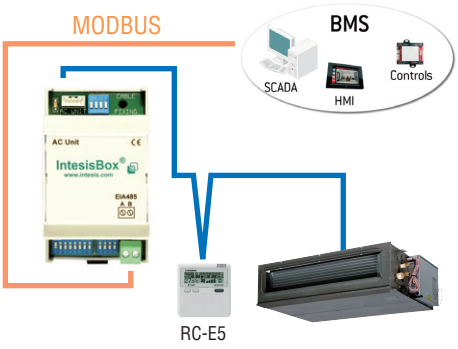
IntesisBox®

- Protocol : Modbus RTU (RS-485)
- Dimension : 93 x 53 x 58 mm
- External Power supply : no need

Example :
Device as Master



Example :
Device as Slave



IntesisHome®
Your home in the cloud

Intesis Wifi Adaptors

PAC Model: MH-RC-WIFI-1A

Please access the followings for details.

Intesis software

URL http://www.intesis.com
email info@intesis.com

Energy efficient and environmentally conscious

Several radical design changes and engineering developments have brought about a vast improvement in energy efficiency and environmental protection.

SEER and SCOP is defined in European regulations listed below.

No.2016/2281: requirement for air-heating products, cooling products, high temperature process chillers and fan coil units.Seasonal efficiency is the new way of rating the true efficiency of heating and cooling products over an entire year. Set by the EU's new regulation implementing Eco-Design Directive for Energy Related Product (ErP) which specifies the minimum efficiency of air-conditioners manufacturers must integrate into their products.

The new Seasonal Efficiency rating system that must be used for heating and cooling by all manufacturers are;

SEER - Seasonal Efficiency Ratio (value in cooling)
This ratio represents the annual cooling performance divided by the annual consumption of electricity for cooling.

SCOP - Seasonal Coefficient of Performance (value in heating)
This ratio is calculated as the divided reference annual heating performance by the annual consumption of electricity for heating.

All models meet the performance required by LOT6/21.

RoHS:Restriction of Hazardous substances

In order to avoid the release of hazardous substances into the environments, all models have utilized lead-free solder application. It has been considered to be difficult to use lead-free solder for practical applications because it requires higher solder temperatures at assembly, which can jeopardize reliability. However our PbF soldering method can produce a higher quality lead-free printed circuit board.

Employment of R410A

All models use refrigerant R410A characterized by the ozone depletion coefficient being 0.

Excellent Energy Saving

High performance and excellent energy savings are achieved at the same time by heat exchanger's increased capacity and employment of high efficiency DC motor.

Outdoor unit	FDC121KXZEN1	FDC121KXZES1	FDC140KXZEN1	FDC140KXZES1	FDC155KXZEN1	FDC155KXZES1	FDC224KXZME1
SEER / SCOP (Outdoor unit)	8.15 / 4.63	8.15 / 4.63	7.73 / 4.59	7.73 / 4.59	7.21 / 4.55	7.21 / 4.55	6.55 / 4.55

Outdoor unit	FDC280KXZME1	FDC280KXZE1	FDC335KXZE1	FDC400KXZE1	FDC450KXZE1	FDC475KXZE1
SEER / SCOP (Outdoor unit)	6.03 / 4.54	7.25 / 4.89	7.38 / 4.85	6.66 / 4.23	6.36 / 4.36	6.84 / 4.31

Outdoor unit	FDC500KXZE1	FDC560KXZE1	FDC224KXZXE1	FDC280KXZXE1	FDC335KXZXE1	FDC224KXZRE1	FDC280KXZRE1
SEER / SCOP (Outdoor unit)	7.29 / 4.58	6.45 / 4.30	7.58 / 4.86	7.27 / 4.91	7.41 / 4.86	6.27 / 4.06	6.11 / 4.02

Outdoor unit	FDC335KXZRE1	FDC400KXZRE1	FDC450KXZRE1	FDC475KXZRE1	FDC500KXZRE1	FDC560KXZRE1	FDC615KXZRE1
SEER / SCOP (Outdoor unit)	7.00 / 4.84	6.34 / 4.22	6.04 / 4.33	6.60 / 4.27	7.01 / 4.54	6.25 / 4.29	5.79 / 4.34

Outdoor unit	FDC670KXZRE1	FDC224KXZPE1	FDC280KXZPE1
SEER / SCOP (Outdoor unit)	5.78 / 4.66	6.65 / 4.34	6.68 / 4.50

R410A refrigerant contained in the products is a fluorinated greenhouse gas listed in Regulation (EU) No 517/2014.
SEER/SCOP are based on EN14825:2016 and Commission regulation (EU) No.2016/2281. Temperature conditions for calculating SCOP are based on "Average climate".

NOTES

Before starting use

Heating performance
The heating performance values (kW) described in the catalogue 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 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 catalogue due to the effect of surrounding noise and echo. Take this into consideration when installing.

Use in oil atmosphere
Avoid installing this unit in an 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 acidic atmosphere such as hot spring areas having high level of sulfuric gases or in alkaline atmosphere including ammonia or calcium chloride, 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. Please ask a dealer or specialist when you use an air conditioner in places differing from a general atmosphere.

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 (R410A) used for Air conditioner is non-toxic and 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 prevention
Install a snow-prevention hood so that the snow does not obstruct the air intake port or 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, a maintenance contract by a specialist is recommended.

Safety Precautions

Air-conditioner usage target
The air-conditioner described in this catalogue is a dedicated cooling/ heating device for human use.
Do not use it for special applications such as the storage of food items, 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.
Make sure that the outdoor unit is stable in installation. Fix the unit to stable base.

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.

Mitsubishi Heavy Industries Thermal Systems, Ltd.
(Wholly-owned subsidiary of MITSUBISHI HEAVY INDUSTRIES, LTD.)
2-3 Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-8332, Japan
https://www.mhi-mth.co.jp/en/

Our factories are ISO9001 and ISO14001 certified.

Certified ISO 9001

Certificate Number : JQA-0709

Certificate Number : 4333-2007-AQ-RGC-RvA

Certified ISO 14001

Certificate Number : YKA4005636

Certificate number : 02117E10160R0M

20KX01E October 2019 F