

## Before starting use

### Heating Performance

The heating performance values (kW) described in 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 as the outdoor temperature drops, if the outdoor temperature is too low and the heating performance is insufficient, use other heating appliances as well.

### Indication of sound values

The sound values are the values (A scale) measured in a chamber such as an anechoic chamber following the ISO Standards. In the actual installation state, the value is normally larger than the values given in the 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 as atmosphere where oil scatters or builds up, such as in a kitchen or machine factory. If the oil adheres to the heat exchanger, the heat exchanging performance will drop, mist may be generated, and the synthetic resin parts may deform and break.

### Use in acidic or alkaline atmosphere

If this unit is used in 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 inflammable in its original state. However, in consideration of a state where the refrigerant leaks into the room, measures against refrigerant leaks must be taken in small rooms where the tolerable level could be exceeded. Take measures by installing ventilation devices, etc.

### Use in snowy areas

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

#### •Snow 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, we recommend the maintenance contract (charged for) by a specialist.

## ⚠ 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 foodstuffs, animals or plants, precision devices or valuable art, etc.

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

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

### Before use

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

### Installation

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

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.



(Wholly-owned subsidiary of MITSUBISHI HEAVY INDUSTRIES, LTD.)

16-5, Konan 2-chome, Minato-ku, Tokyo, 108-8215 Japan  
<http://www.mhi-mth.co.jp/en/>

Our factories are ISO:9001 and ISO:14001 certified.

Certified ISO 9001



BIWAJIMA PLANT  
Mitsubishi Heavy Industries, Ltd.  
Air-conditioning & Refrigeration Systems Headquarters



MITSUBISHI HEAVY INDUSTRIES-  
MAHAJAK AIR CONDITIONERS CO., LTD.



Mitsubishi Heavy  
Industries-Haier (Qingdao)  
Air-conditioners Co., Ltd.

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Our Technologies, Your Tomorrow



# High Performance Air-Conditioning



New **KX**

Hybrid VRF inverter multi-system Air-Conditioners



## State of an Art Air-Conditioning



NEW

## KX Series

### INSTALLATION FLEXIBILITY

KX Product Line is extended up to 60HP  
with combination of 3 outdoor units



Design in Japan,  
Made for  
India

## Mitsubishi Heavy Industries Japan 135 years of technological innovations



Yataro Iwasaki, founder of Mitsubishi



1884: the Nagasaki shipyards at the time  
the company was founded

The origin of MHI can be all the way back to 1884. In that year, Yataro Iwasaki, the founder of Mitsubishi took a lease of Government- owned Nagasaki Shipyard. He named it Nagasaki Shipyard & Machinery Works, and started the shipbuilding business on a full scale. This shipbuilding business was later turned into Mitsubishi Shipbuilding Co., Ltd., and was again launched as Mitsubishi Heavy- Industries, Ltd., in 1934, establishing its position as the largest private firm in Japan. Mitsubishi Heavy Industries is Japan's largest shipbuilding and machinery maker and is a mammoth company involved in an array of Industrial concerns. With nearly 150 subsidiaries, Mitsubishi Heavy Industries Ltd. (MHI) operates in 11 key sectors. Shipbuilding, Air-Conditioning and Refrigeration Systems, Nuclear Energy Systems, General Machinery and Components, Paper and Printing Machinery, Steel Structures and Construction, Machinery and Plants, Machine Tools, Power Systems, Aerospace System, Industrial Machinery, Infrastructure projects and produces everything from Airconditioners & System (Room AC, Semi-Commercial, Commercial, VRF, Centrifugal & Absorption Chillers), Jet engines, Passenger aircraft, Wind- Mills, Cruise ships and Oil tankers, Construction Machinery, Newsprint Machines, Turbines, Nuclear Power Plants, Thermal Power Plants, airplanes, gasoline engines, and gear cutting machines.



Mitsubishi Heavy Industries- IAPL Group Pvt. Ltd. is a **Strategic alliance** of Mitsubishi Heavy Industries - Mahajak Airconditioners Co. Ltd. & IAPL Group Pvt. Ltd., for sales, marketing & service of Mitsubishi Heavy Ind. Heavy Duty Room, Commercial Airconditioners & VRF Systems in India.

IAPL Group Pvt. Ltd. with its nationwide network has supported a wide array of projects including residential & large commercial establishment, Offices, Business establishments, Hotels, Hospitals, Schools, Commercial Complexes, Industries, etc. We have participated in projects for large Air Conditioning Systems requiring SYSTEM INTEGRATION of imported air conditioning equipment as per the international standards lay down by our principal- M/s. Mitsubishi Heavy Industries. We ensure much superior quality of workmanship with advanced engineering skills. We have full- fledged team of qualified engineers and technical staff in the air- conditioning divisions to meet all kind of requirements. IAPL has consistently provided Channel Partners with timely and high value service, competitively priced products without sacrificing quality.

IAPL has its branch offices and Authorized Genuine Spares & Service Center Network at all major cities of India.



# 5<sup>th</sup> GEN. HYBRID INVERTER TECHNOLOGY

SINCE THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER ENTERED INTO FORCE, WE ALL AGREE TO LOWER THE PRODUCTION AND CONSUMPTION OF OZONE DEPLETING SUBSTANCES IN ORDER TO REDUCE THEIR ABUNDANCE IN THE ATMOSPHERE. WE ALL REALIZE THE EFFECTS OF THE GLOBAL WARMING ON OUR LIVING ENVIRONMENT.

TO MAKE THE WORLD A BETTER PLACE, WE TAKE PART IN ENABLING IMPLEMENTATION OF THE PROTOCOL ACCORDINGLY. WE HAVE USING R-410A REFRIGERANT IN OUR VRF AIR CONDITIONING UNITS.

## BETTER PERFORMANCE

HIGHER HEAT TRANSFER COEFFICIENT THAN R-22,  
R410A IS MORE EFFICIENT AND ENERGY SAVING.



## ECO SMART



R410A IS HYDRO-FLUORO-CARBON (HFC), WHICH CONTAINS ONLY FLUORINE, DOES NOT CONTRIBUTE TO OZONE DEPLETION. R410A REFRIGERANT IS THEREFORE AN ECO SMART CHOICE FOR ECO-CONSCIOUS USERS IN ORDER TO REDUCE THEIR ENVIRONMENTAL IMPACT AND TO SAVE THE WORLD.



## PROVEN CHOICE

R410A HAS BEEN PROVED AND RECOGNIZED AS A NEW GENERATION OF AIR CONDITIONER REFRIGERANT. YOU CAN BECOME MORE CONFIDENT THAT R410A IS THE RIGHT CHOICE FOR A SUBSTANCE USED IN AIR CONDITIONING APPLICATIONS.





On the land and sea, in the sky and even in space, MHI's stage of operations is expanding limitlessly. We manufacture more than 700 different products which support various industrial and civil activities in both domestic and international markets.

Ships, steel structures, power systems, machinery for both industrial and general use, air-conditioners, pollution reduction and environmental control systems, aerospace systems – the MHI product lines which create rich and comfortable living environments, are as harmonious as an orchestra.

What creates this harmony is MHI's general technological expertise developed over more than a century of hard work. We are highly esteemed in the world for providing high

quality products through untiring technological research and development. From new energy development and environmental concerns to the exploration of space, with the advent of the 21st century MHI is confronting a variety of issues to ensure the realisation of a society in which there is harmony between mankind and technology.



- Crude Oil Storage Barges
- LNG Tanks
- Boilers & Turbines
- Oil Production Plants
- Contra-Rotating Propellers
- Thermal Power Plants
- Combined Cycle Plants
- Fuel Cells
- Water Turbines
- Wind Turbines
- Geothermal Power Plants
- PWR Nuclear Power Plants
- Uranium Enrichment Equipment
- FBRs
- Co-Generation Systems

- Chemical Plants
- Wind Tunnel/Experiment Equipment
- Casting Machines
- Strip Mill
- Cement Plant
- Stepless Variable Speed Gears
- Industrial Robots
- Injection Moulding Machines
- Pulp & Paper Machinery
- Corrugation Machines
- Box Making Machines
- Machine Tools

- Ceiling Recess Packaged Air Conditioners
- Automotive Air Conditioners
- Residential Use Split Air Conditioners
- Refrigeration Units
- Dry Cleaning Machines
- Food Machinery
- Cruise Ships
- Multi-purpose Dome
- Stage Machinery Systems

- Cable Layer
- Printing Machinery

- Oceanographic Research Ships
- Deep Submergence Research Vehicles
- Communications Satellite Rockets
- Space Transportation
- Rockets & Engines

- Submarines
- Naval Vessels
- Jet Fighters
- Helicopters
- Missiles
- Tanks & Infantry Fighting Vehicles

- Spillway Radial Gates
- Steel Bridges
- Penstocks
- Desalination Plants
- Physical Distribution Equipment
- Engines

- Unloader & Container Cranes
- Mechanical Parking Facilities
- Integrated Automated Storage Systems
- Rubber & Tyre Machinery
- Skyrails
- Monorail Cars
- New Transportation Systems
- Passenger Boarding Bridges

- Toll Collection Machine Systems
- Forklift Trucks
- Helicopters
- Aircraft
- Railway Maintenance Equipment
- LNG Carrier
- Container Ships



# KX

The KX product lineup has been extended to offer solutions delivering up to 60 horsepower (60HP) when using a combination of 3 outdoor units.



By combining 3 outdoor units 60HP can be achieved

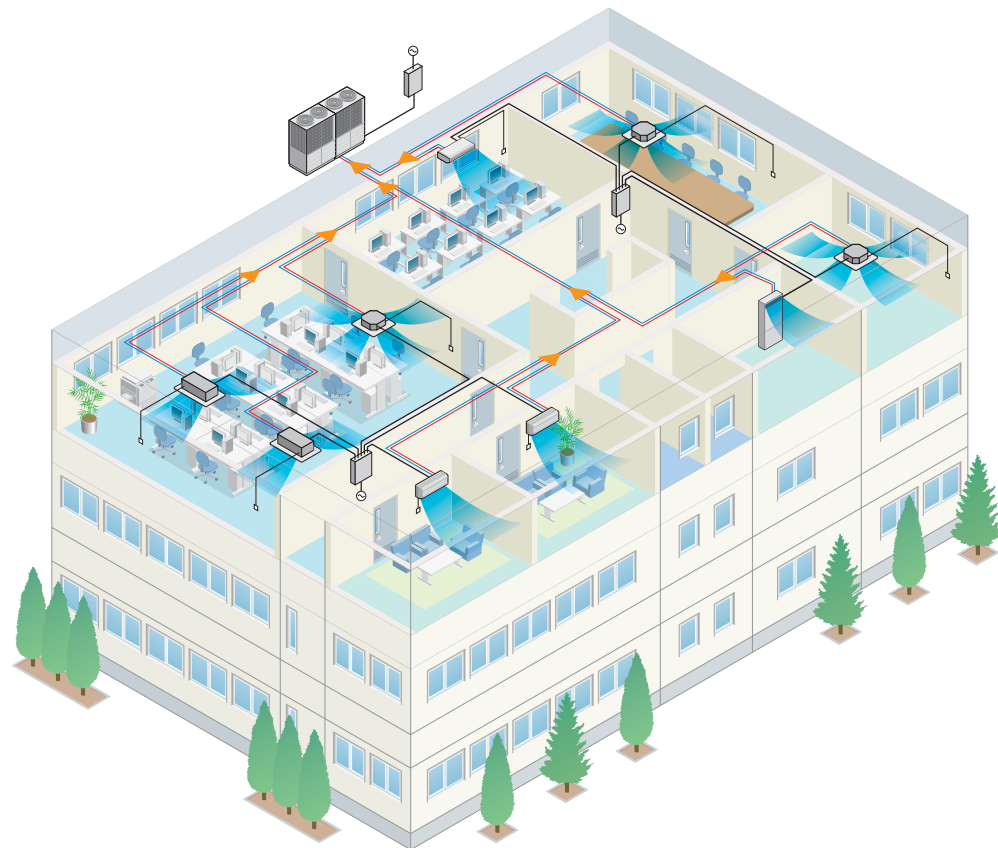
## Heat pump systems

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 11.2kW cooling capacity, up to 24HP with 68.0kW 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 (KX) and the furthest indoor unit can be connected up to 160m (KX) from the outdoor unit.



## Product Line Up

Product lineup has been extended up to 60HP with combination of 3 outdoor units.

## Improved Hybrid Series

### Micro model



### KXZ Life



### Standard Model



4HP	5HP	6HP
FDC112KXEN6	FDC140KXEN6	FDC155KXEN6
FDC112KXES6	FDC140KXES6	FDC155KXES6

□ 1-phase 220-240V  
 ■ 3-phase 380-415V

8HP*	10HP*
FDC224KXZPE1	FDC280KXZPE1

\*Tropical Usage mode, best suited for Indian conditions.

### KXZE1



12HP	14HP	16HP
FDC335KXZE1	FDC400KXZE1	FDC450KXZE1

18HP	20HP	22HP	24HP
FDC500KXZE1	FDC560KXZE1	FDC615KXE6	FDC680KXE6

26HP	28HP	30HP	32HP
FDC735KXZE1	FDC800KXZE1	FDC850KXZE1	FDC900KXZE1
12+14	14+14	14+16	16+16
FDC335KXZE1 FDC400KXZE1	FDC400KXZE1 FDC400KXZE1	FDC400KXZE1 FDC450KXZE1	FDC450KXZE1 FDC450KXZE1

36HP	38HP	40HP	44HP	46HP	48HP
FDC1000KXZE1	FDC1060KXZE1	FDC1120KXZE1	FDC1230KXE6	FDC1295KXE6	FDC1360KXE6
18+18	18+20	20+20	22+22	22+24	24+24
FDC500KXZE1 FDC500KXZE1	FDC500KXZE1 FDC560KXZE1	FDC560KXZE1 FDC560KXZE1	FDC615KXE6 FDC615KXE6	FDC615KXE6 FDC680KXE6	FDC680KXE6 FDC680KXE6

42HP	44HP	46HP	48HP
FDC1200KXZE1	FDC1250KXZE1	FDC1300KXZE1	FDC1350KXZE1
14+14+14	14+14+16	14+16+16	16+16+16
FDC400KXZE1 FDC400KXZE1 FDC400KXZE1	FDC400KXZE1 FDC400KXZE1 FDC450KXZE1	FDC400KXZE1 FDC450KXZE1 FDC450KXZE1	FDC450KXZE1 FDC450KXZE1 FDC450KXZE1

54HP	56HP	58HP	60HP
FDC1500KXZE1	FDC1560KXZE1	FDC1620KXZE1	FDC1680KXZE1
18+18+18	18+18+20	18+20+20	20+20+20
FDC500KXZE1 FDC500KXZE1 FDC500KXZE1	FDC500KXZE1 FDC500KXZE1 FDC560KXZE1	FDC500KXZE1 FDC560KXZE1 FDC560KXZE1	FDC560KXZE1 FDC560KXZE1 FDC560KXZE1


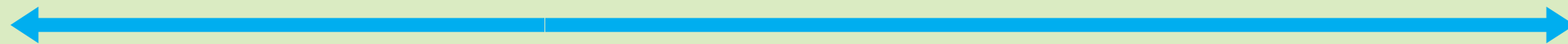





















a Power supply for outdoor and indoor units are 3 phase 380-415V, 50Hz and 1 phase 220-240V, 50Hz respectively.



## <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>			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>
<b>Micro</b> Model (4~6HP)																	
<b>KXZ Lite</b>																	
Standard model <b>KX</b>																	
Ceiling Cassette	4way <b>NEW</b> FDT				FDT28KXE1	FDT36KXE1			FDT45KXE1	FDT56KXE1	FDT71KXE1	FDT90KXE1	FDT112KXE1	FDT140KXE1	FDT160KXE1		
	4way Compact <b>NEW</b> FDTc		FDTc15KXE1	FDTc22KXE1	FDTc28KXE1	FDTc36KXE1			FDTc45KXE1	FDTc56KXE1							
	2way FDTW				FDTW28KXE6F				FDTW45KXE6F	FDTW56KXE6F	FDTW71KXE6F	FDTW90KXE6F	FDTW112KXE6F	FDTW140KXE6F			
	1way FDTs								FDTs45KXE6F		FDTs71KXE6F						
	1way Compact FDTQ			FDTQ22KXE6F	FDTQ28KXE6F	FDTQ36KXE6F											
Duct Connected	High Static Pressure FDU								FDU45KXE6F	FDU56KXE6F	FDU71KXE6F	FDU90KXE6F	FDU112KXE6F	FDU140KXE6F	FDU160KXE6F	FDU224KXE1	FDU280KXE1
	Low/Middle Static Pressure FDUM			FDUM22KXE6F	FDUM28KXE6F	FDUM36KXE6F			FDUM45KXE6F	FDUM56KXE6F	FDUM71KXE6F	FDUM90KXE6F	FDUM112KXE6F	FDUM140KXE6F	FDUM160KXE6F		
	Low Static Pressure(thin) FDUT		FDUT15KXE6F-E	FDUT22KXE6F-E	FDUT28KXE6F-E	FDUT36KXE6F-E			FDUT45KXE6F-E	FDUT56KXE6F-E	FDUT71KXE6F-E						
	Compact & Flexible FDUH			FDUH22KXE6F	FDUH28KXE6F	FDUH36KXE6F											
Wall Mounted <b>NEW</b> FDK			FDK15KXE1	FDK22KXE1	FDK28KXE1	FDK36KXE1			FDK45KXE1	FDK56KXE1	FDK71KXE1	FDK90KXE1					
Ceiling Suspended FDE						FDE36KXE1			FDE45KXE1	FDE56KXE1	FDE71KXE1		FDE112KXE1	FDE140KXE1			
Floor Standing	2way FDFW				FDFW28KXE6F				FDFW45KXE6F	FDFW56KXE6F							
	With Casing FDFL										FDFL71KXE6F						
	Without Casing FDFU				FDFU28KXE6F				FDFU45KXE6F	FDFU56KXE6F	FDFU71KXE6F						
OA Processing unit FDU-F			FDU-F series are not connectable to Micro model (4~6HP), KXZ Lite.									FDU650FKXE1		FDU1100FKXE1		FDU1800FKXE1	FDU2400FKXE1
		Air flow m³/h	150	250	350	500				800	1000						
Fresh Air Ventilation and Heat Exchange unit SAF			SAF150E7	SAF250E7	SAF350E7	SAF500E7				SAF800E7	SAF1000E7						
Fresh Air Assembly SAF-DX				SAF-DX250E6	SAF-DX350E6	SAF-DX500E6				SAF-DX800E6	SAF-DX1000E6						



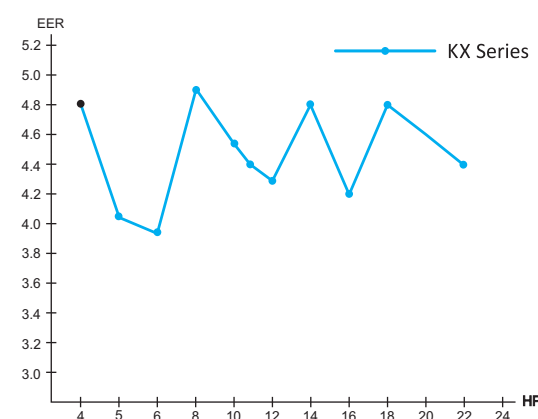
# 1. High Efficiency & Comfort

## Improved Efficiency

NEW

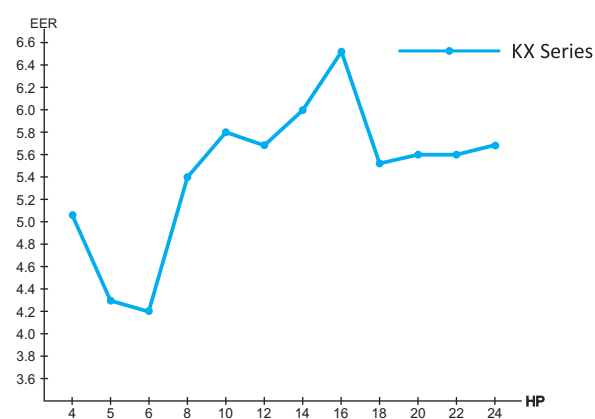
### Top Class Energy Efficiency EER (Energy Efficiency Ratio)

KX Series has achieved superior EER which far surpasses competitors' EER at all range. On average, KX series has 13 % higher EER than competitor



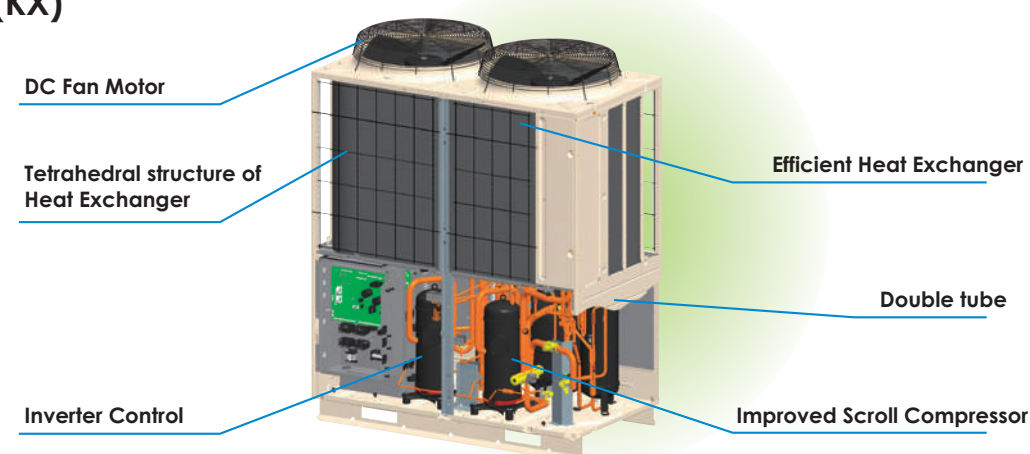
### ESEER (European Seasonal Energy Efficiency Ratio)

KX Series also surpasses competitor's ESEER at all range. On average, KX series has 9% higher EER than competitor



High efficiency and compact design are realized by applying various advanced components

### 10~60HP (KX)



## Variable Temperature and Capacity Control (KX)

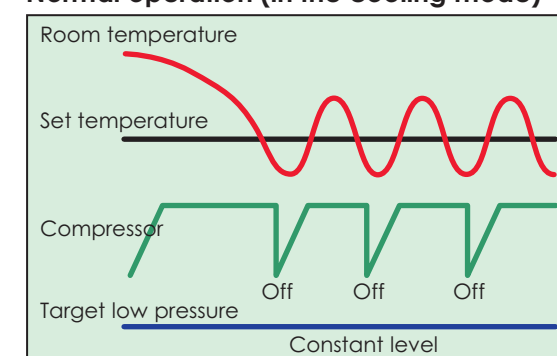
NEW

**VTCC**

- The VTCC is a newly developed energy saving function designed by Mitsubishi Heavy Industries Thermal Systems.
- A new feature to all our KX 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.

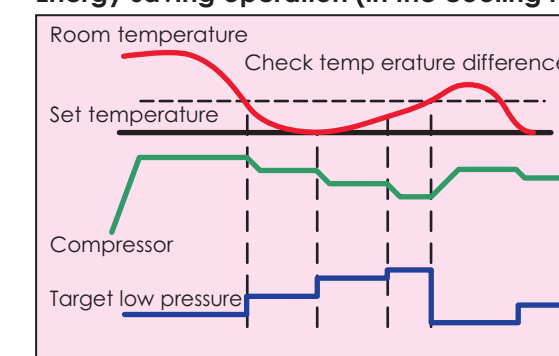
**34%**  
 ENERGY SAVINGS\*

### Normal 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.

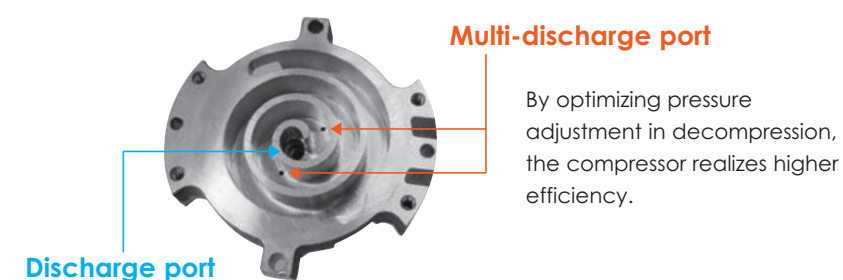
### Energy saving operation (in the cooling mode)



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 (KX, KXZ Lite)

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.



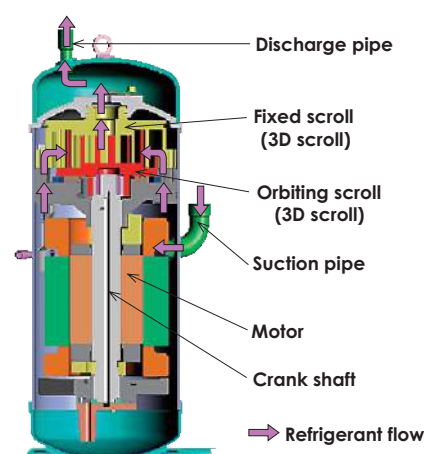


NEW

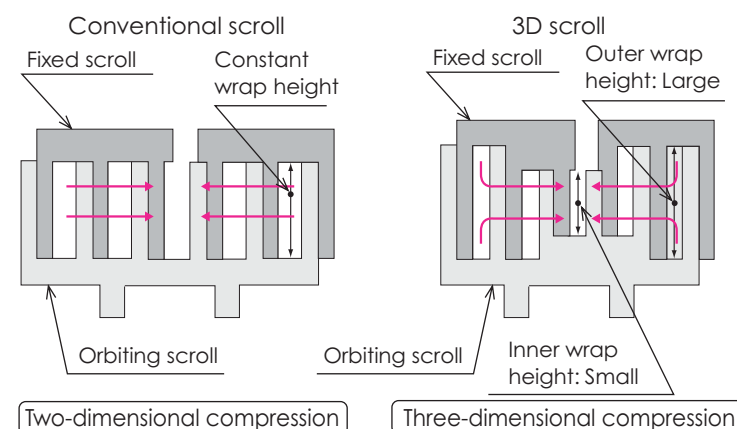
## 3D Scroll Compressor that achieves high efficiency with low noise, smaller size & lighter weight

For the purpose of meeting the demand for further efficiency improvement and large capacity, MHI developed the three-dimensional scroll compressors (3D scroll) for commercial air-conditioner. By realizing three-dimensional compression which is impossible for the conventional scroll, 5.5% improvement of efficiency, 35% smaller size and 26% lighter weight compared with the conventional compressor were archived, so that substantial energy-saving effect and improvement of unit-mounting capacity are obtained.

("3D scroll" is a registered trademark of MHI.)



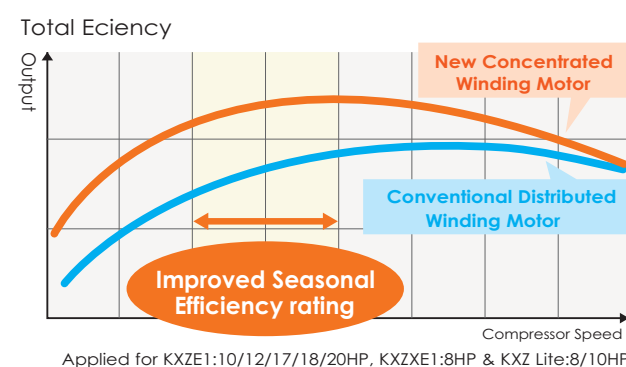
3D scroll compressor



Sectional views of conventional scroll and 3D scroll

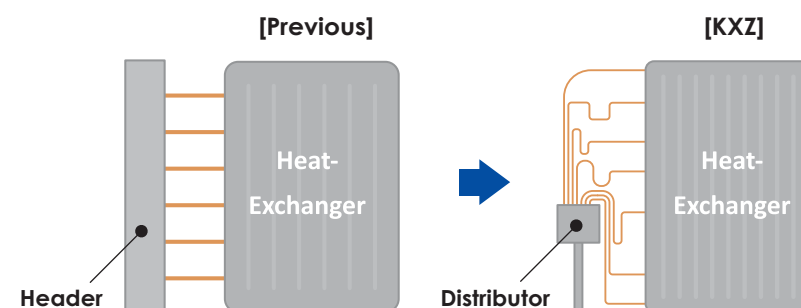
## Concentrated winding motor achieves "High Output" and "Total Efficiency Improvement"

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.



## 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.



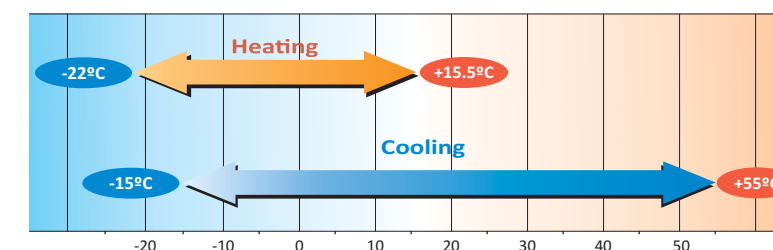
## Strengthened resistance against frost

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

NEW

## Wider Range of Operation (KX, KXZ Lite)

KX, KXZ Lite series permits an extensible system design considering a heating range operation under a low temperature condition down to -22°C and a cooling range operation up to 55°C.

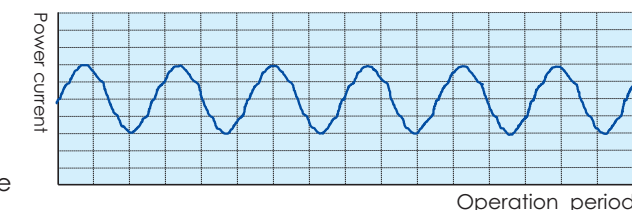


## Vector control

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

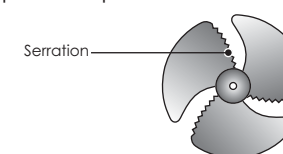
- Smooth operation from low speed to high speed
- Smooth Sine Voltage Wave form are attained
- Energy efficiency is further improved in low speed range

Vector Control



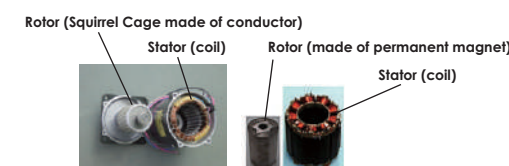
## Long-chorded 3 propeller fan with serration

Fan blade design adapted from MHI's aerospace division - with serrated edges that deliver increased air volume with less power input.



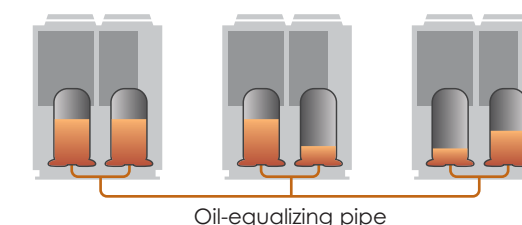
## DC Fan Motor

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



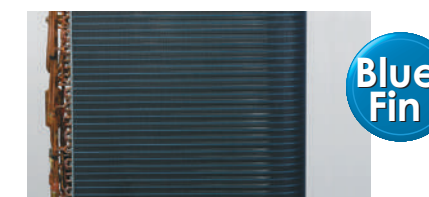
## Oil level control capability

Our proprietary technology of adjusting oil level for combination of two or three outdoor units has realized leveled operation rate, keeping performance of the units and ensuring long life of the System



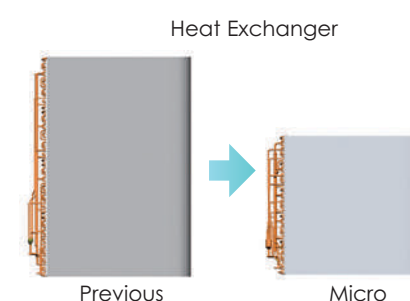
## Blue Fin

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



## Compact high efficiency Heat Exchanger

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

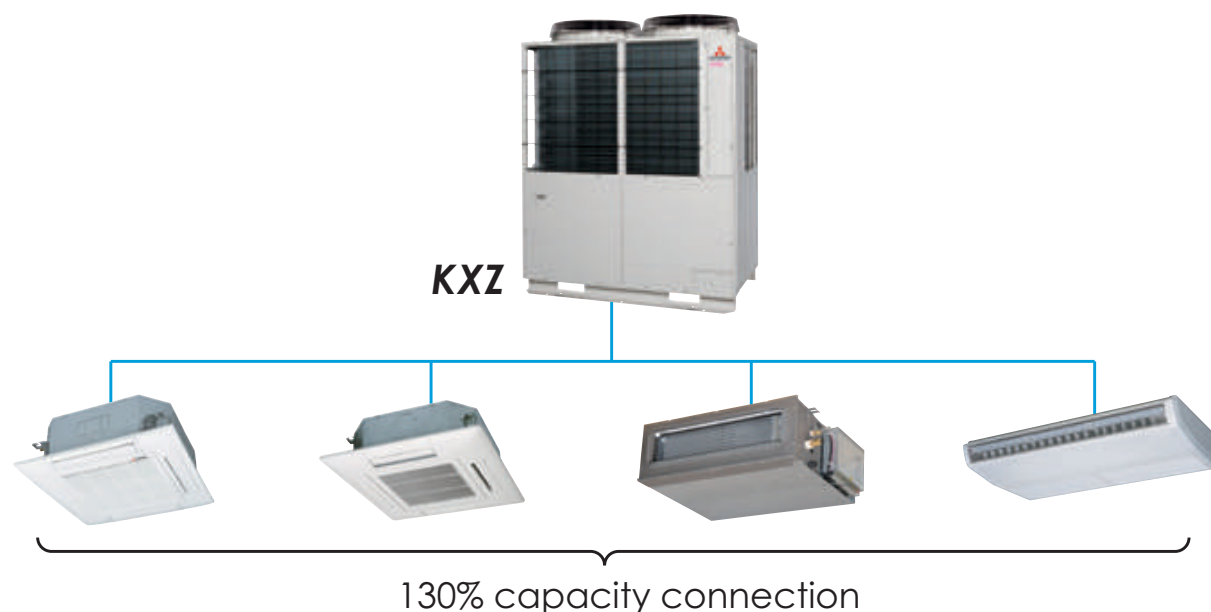




## 2. Design Flexibility

### Indoor unit capacity connection

	HP	Capacity connection
Micro model	4~12	150%
KXZ Lite	8~10	120%
KXZE1	12~60	130%



### Connectable indoor units

Micro model	HP	4	5	6	8	10	12	KXZ Lite						HP	8	10
	Numbers	6	8	8	22	24	24							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		

### Control Systems

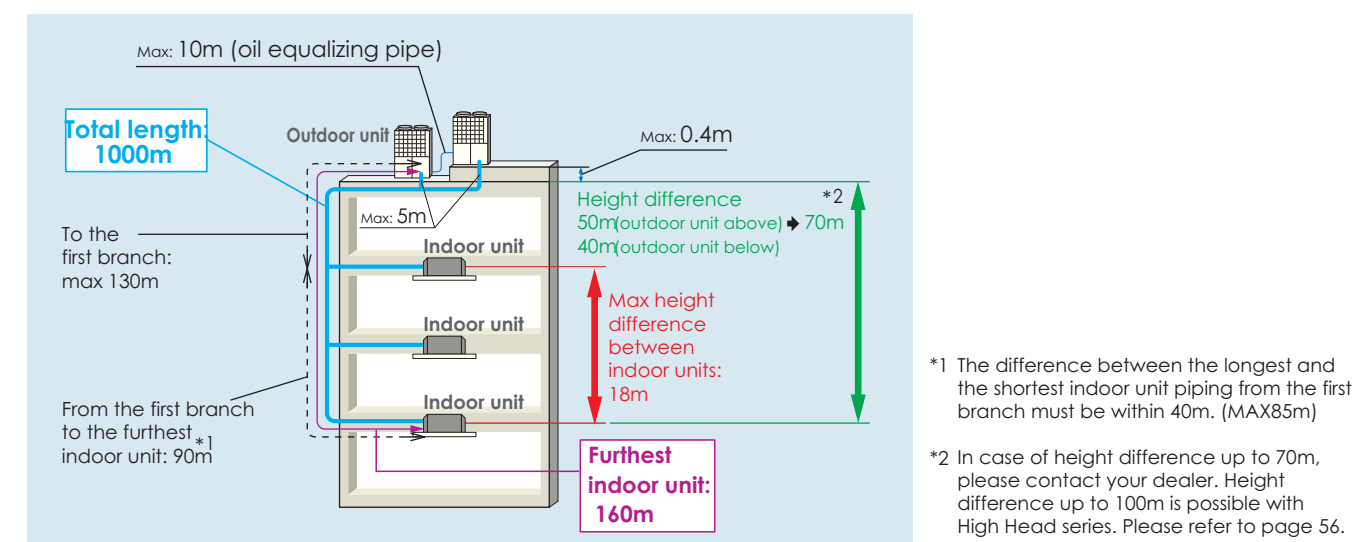
All series offer wide variation of control system and provide the best solution.

[Control system units with SUPERLINK-II]

Classification	Type	Model	Connectable Indoor units (Maximum)	Electric power calculation
Individual controller	Wired	RC-E5	16	—
		RC-EX3A, RC-EX3	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 (48x2)	—

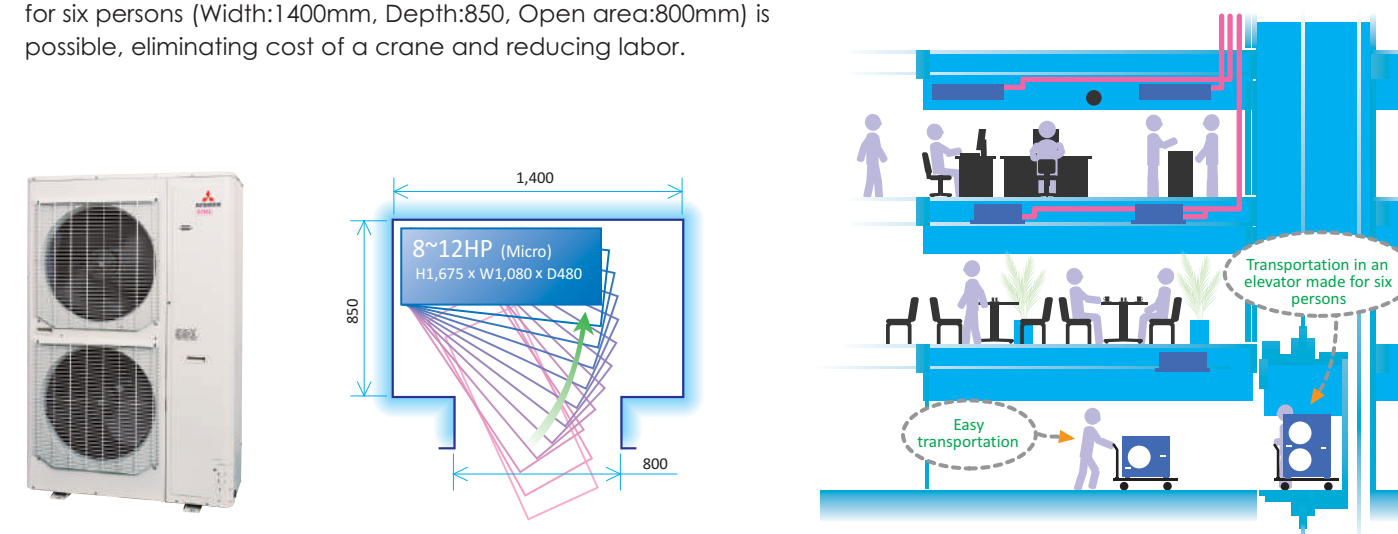
### Long Pipe Length 10~60HP(KX)

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.

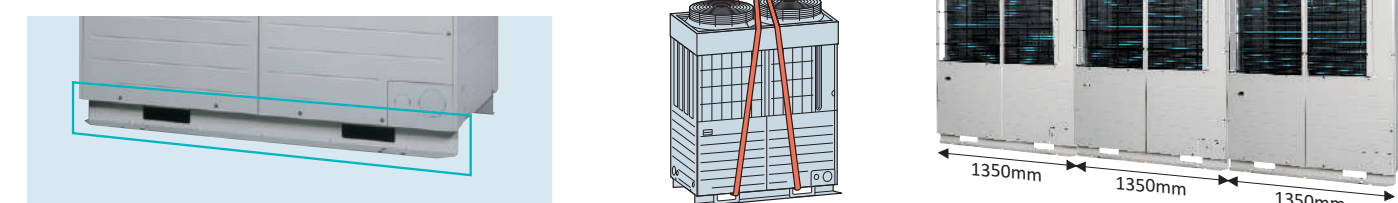


### Easy Transportation & Installation

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.





## Automatic Select functions for capacity control (KXZ Lite)

The following 3 items are available for capacity control function.

You can select one item individually or select 2 or 3 items at the same time.

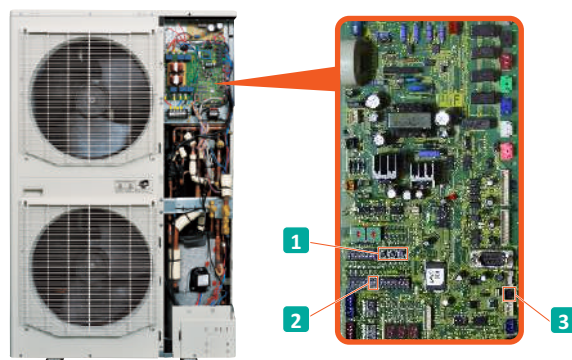
In case of selecting 2 or 3 items, the unit will operate with the most effective function automatically.

## Compressor speed control

You 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).

### How to set "Compressor speed"

- 1 Set the function of external input (CNS1) to "Capacity control input" using P07 of 7SEG setting.
- 2 Set the Demand rate using SW4-7, 4-8 according to the following chart.
- The input signal will be through 3 CNS1. ON/ connected, OFF/ not connected



SW4-7	SW4-8	Compressor speed
OFF	OFF	80%
ON	OFF	60%
OFF	ON	40%
ON	ON	0%

## Capacity control timer

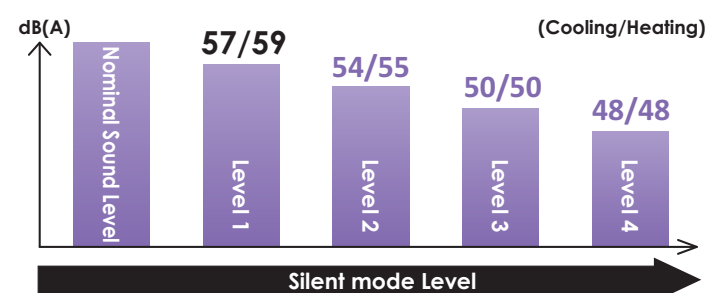
You can set capacity control with RC-EX1A up to 4 times per day maximum.

The timer setting can be changed using 5 minutes intervals.

## Silent mode

Considering noise regulations or surrounding circumstances, you can now select 4 levels of silent mode. [ 1 ] & [ 2 ] Setting the combination of silent mode is available by using timer function of RC-EX1A.

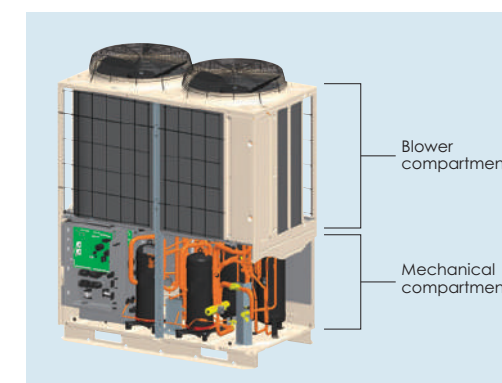
- Silent mode [ 1 ] : Priority for capacity  
This is an effective function during low load operation conditions.  
This setting may be cancelled in overload conditions.
- Silent mode [ 2 ] : Priority for silent mode  
Regardless of operation conditions, the outdoor unit will keep the operation at the selected sound level.



## 3. Serviceability

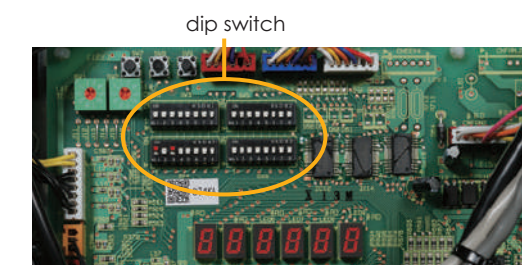
### Easy Service

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 0~43°C outdoor temperature and 10~32°C 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.

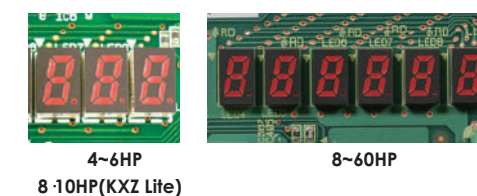


### Monitoring Function

All series includes new feature to assist with servicing and trouble shooting.

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.



### Automatically produced test-run report

KXZ series operation data sheet (Outdoor unit)

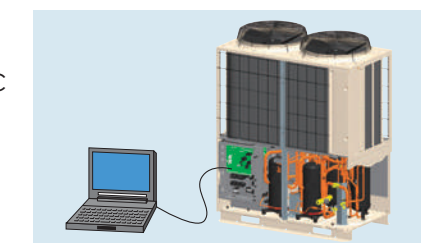
Customer name: \_\_\_\_\_ Trading company: \_\_\_\_\_ Test run date: Aug. 7, 2003 Delivery date: July 25, 2003 Test run operator: Taro Mitsubishi Weather: Cloudy

**SAMPLE**

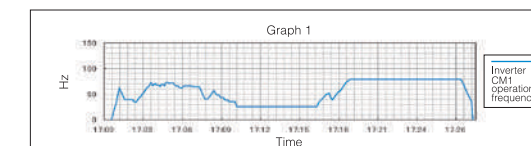
Mitsubishi Heavy Industries Sales Company

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

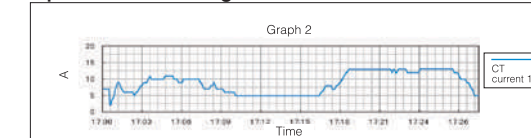
**All series**



### Operation data storage during servicing

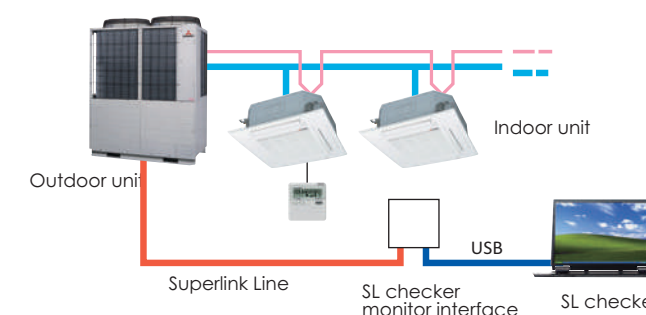


### Operation data storage when a fault occurs



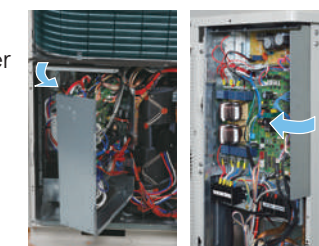
### SL Checker II

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.



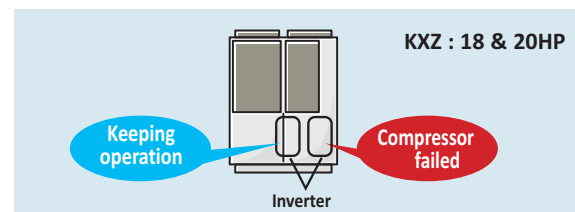
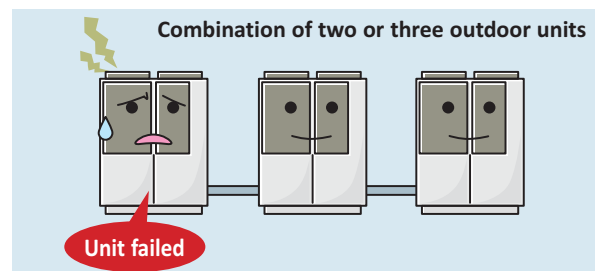
KXZ (3 layer) KXZ Lite (2 layer)



## Back-up Operation

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

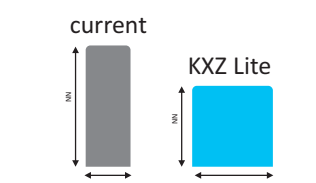
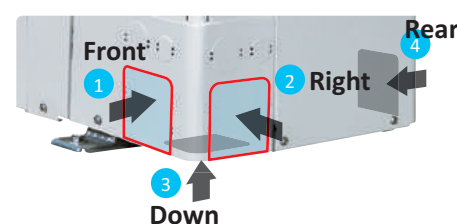
In the event that one compressor has a failure, the unit will keep operating with the another good compressor.



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

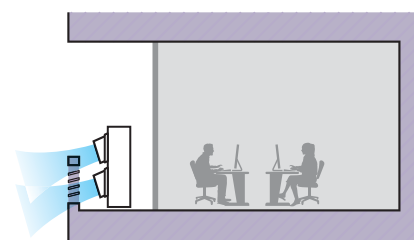


Hole size becomes 120% bigger.

### Wire insertion holes for fall prevention



### External static pressure



External static pressure is available up to 35 Pa.

### Four handles



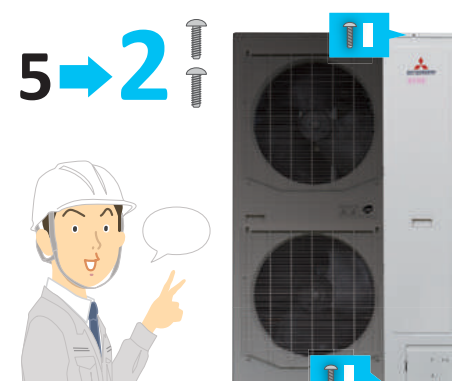
Located at the same level for easy transport and transfer.

### A transparent rain cover



Attached as a standard for easy maintenance.

### Fixing screws to service panel

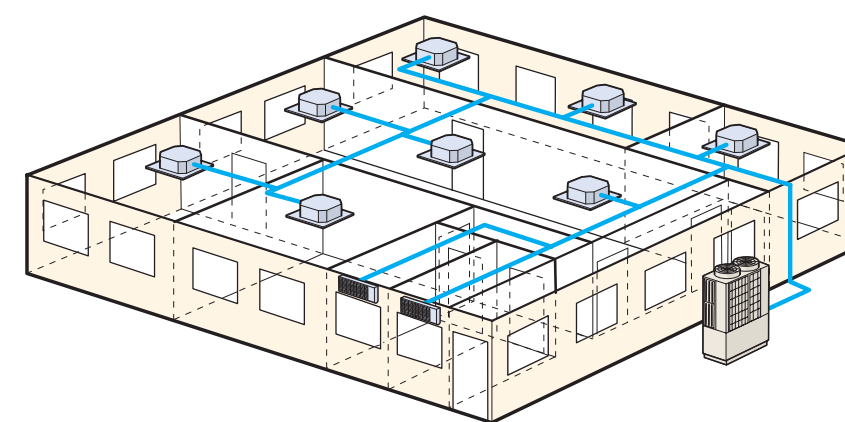


Decreasing number of screws from 5 to 2, installation & service speed is improved.

## 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 11.2kW 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 (8HP+, KXZ, Micro) from the outdoor unit.

### Fixed Cooling model/ 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.

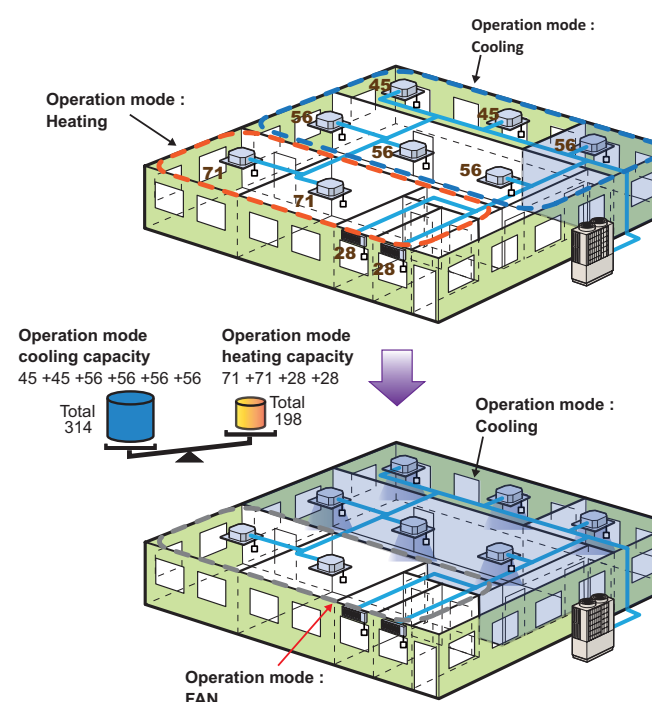
## Priority operation mode rule (KX, KXZ Lite)

You 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)

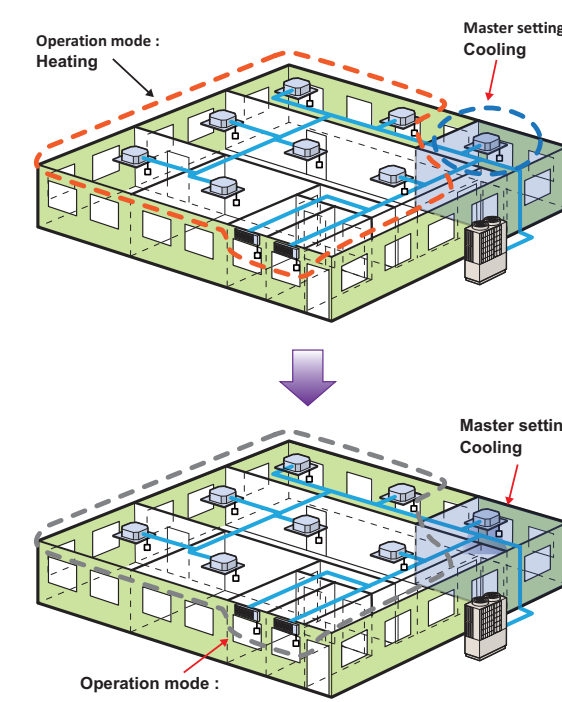
### <Majority operation mode>

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.





# New Generation FDT

Keep maximum comfort with minimal draft

Automatic energy saving control

Quiet operation

**New!**

## Draft Prevention Panel (Option)

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

4 additional flaps are to be controlled individually at each operation mode.

They change air flow direction and prevents 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-EX3, RCN-T-5AW-E2).

When the unit is turned off, the additional flaps close in.



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

**New!**

## Motion Sensor (Option)

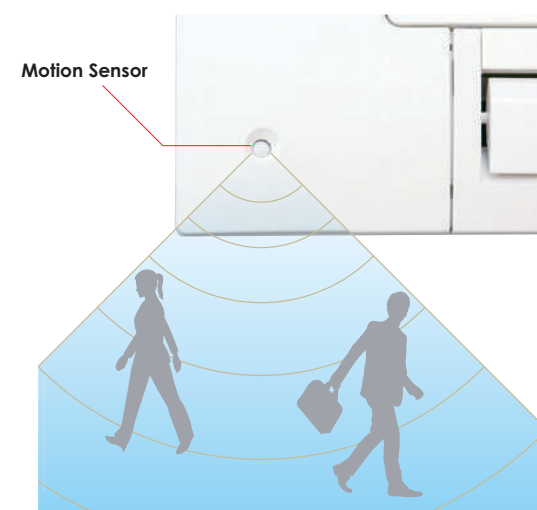
Two energy saving control by detecting human moving

### Power Control

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

### Auto-off

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



# New Generation FDTC

More comfort and More energy saving  
 New European Design  
 Lower noise



## European design & Flat panel

### Thin Panel

FDTC thin panel fit within 10mm from the ceiling.

### Unique Grille Design

Honeycomb grille

Big Louver

Improved directionally

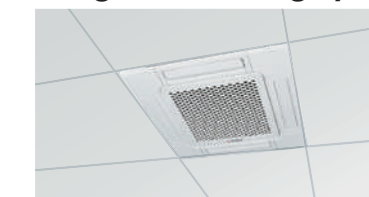


### Compact Design

700 mm → 620 mm

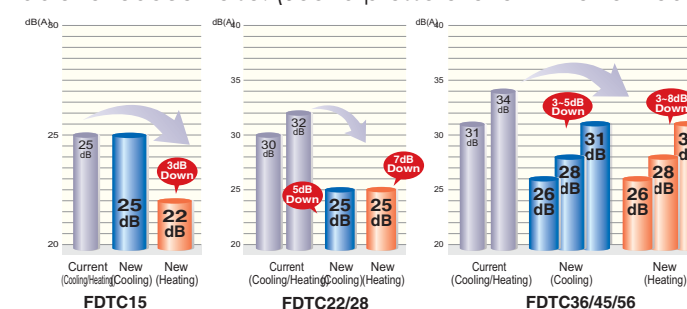
A weight of only 14kg. Height of thin panel and main body is only 248 mm allowing it to be a very easy installation.

### Integrated ceiling system design



## More quiet operation

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



## Draft Prevention Panel and Motion Sensor (option)



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

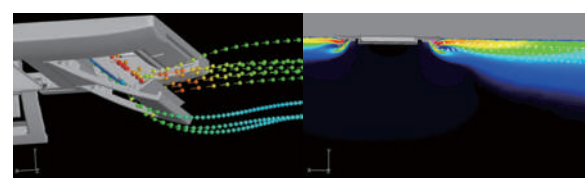
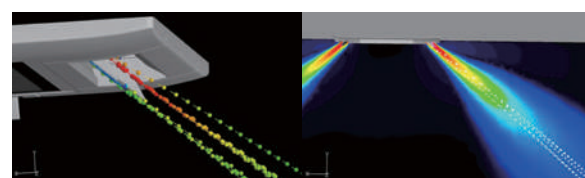
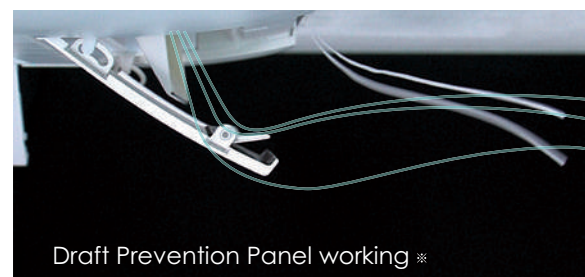
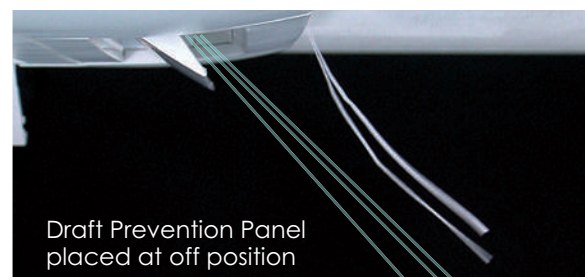
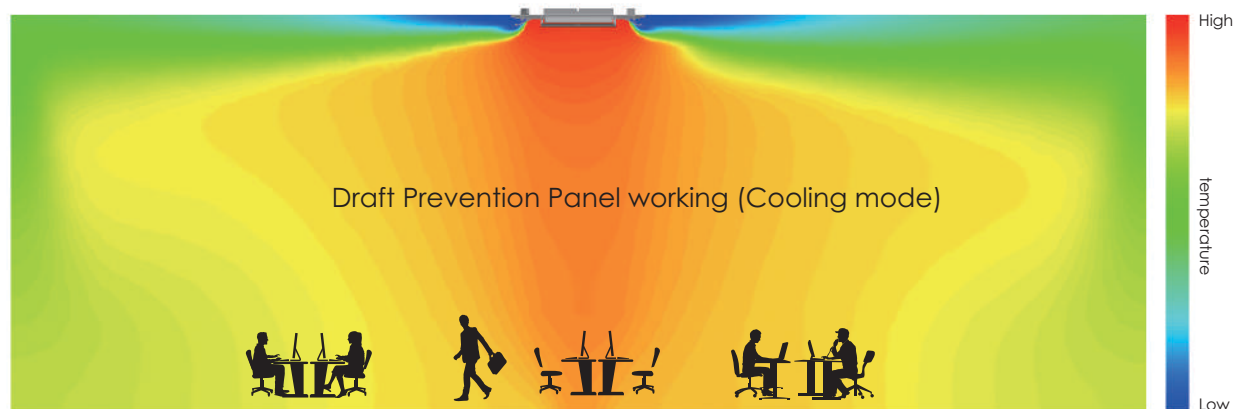
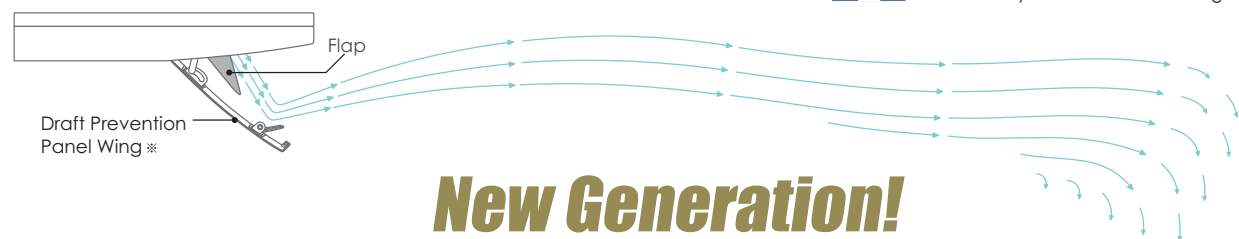




## Draft Prevention Panel

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

Draft Prevention Panel Operating Image



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. ※ These are images of FDT. the Panel Structure of FDTC slightly differ from FDT.



Ceiling cassette Compact  
FDTC series



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)



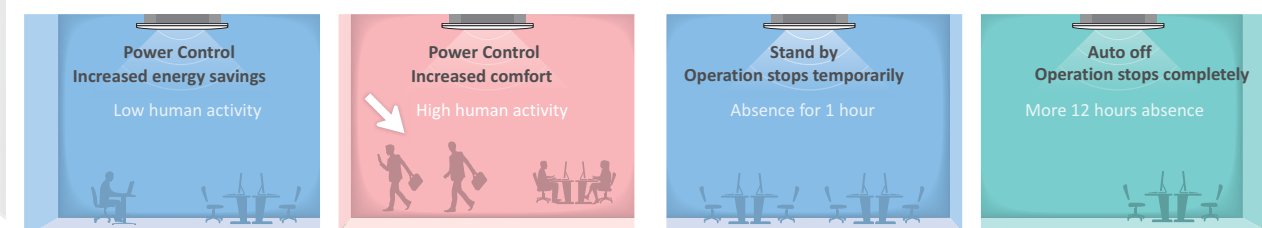
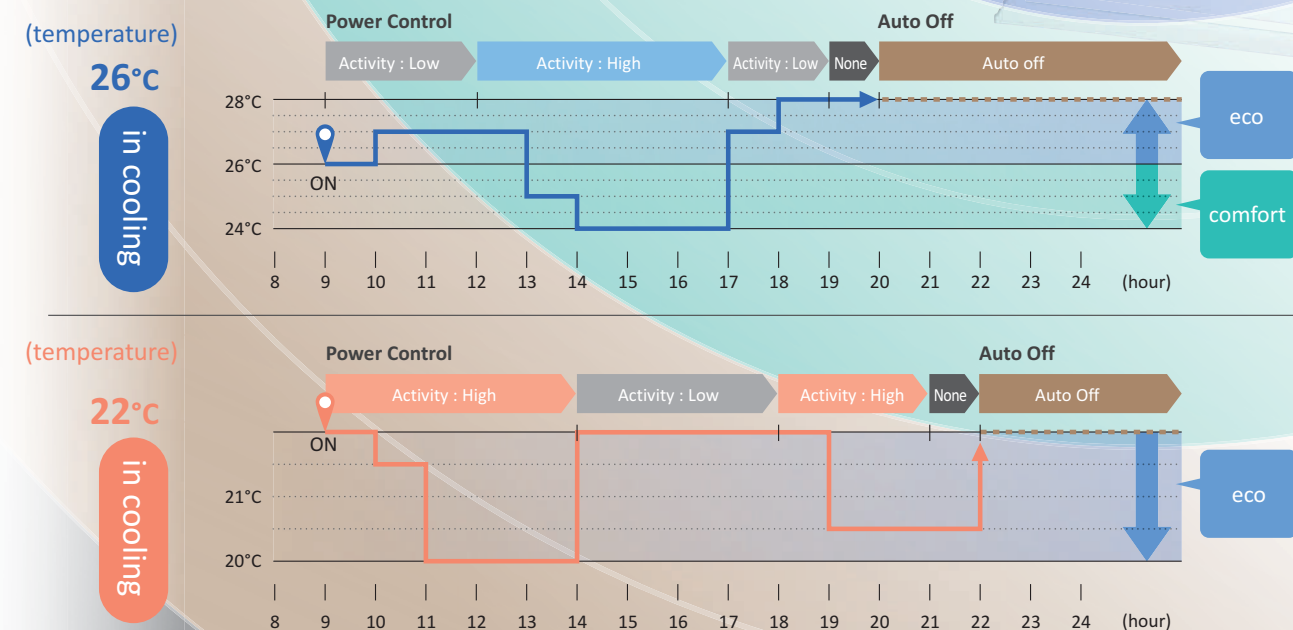
## Motion sensor

Energy saving control by detecting human moving



### 3 Step Control

<b>Power Control</b>	New motion sensor (option) detects human activity. Energy saving control is achieved by shift set temperature according to detected amount of activity.
<b>Stand by</b>	Unit will go stand-by mode when no activity is detected. When unit will detect activity again, unit will re-start operation automatically.
<b>Auto Off</b>	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	Cooling	Heating	Dry	Fan
Power Control	※1	Human activity	Low	Cooling	+2℃	+2℃	+2℃	—	—
				Heating	+2℃	+2℃	+2℃	—	—
			High	Cooling	-2℃	-2℃	-2℃	—	—
				Heating	-2℃	-2℃	-2℃	—	—
Auto Off		※2			●	●	●	●	●

※1 Set temperature is revised maximum 2°C at Cooling/Heating mode by detecting heat volume movement.  
 ※2 Absence for 1 hour » Operation stop ("Stand-by") More 12 hour absence » Operation stops completely





## Simple use with advanced settings REMOTE CONTROL

Easy touch and Easy view with full dot Liquid Crystal display



RC-EX3A

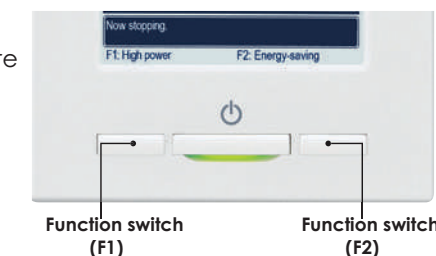
Add new function

## functions

### Function Switch

The function switch allows you to select and set two functions that you desire 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 Favorite Mode

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

#### 6 Filter Sign

Announces the due time for cleaning the air filter.

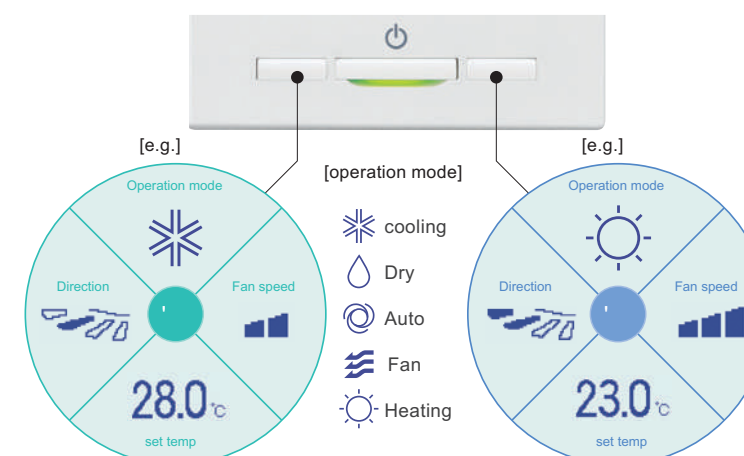
NEW

#### 7 Anti draft ON/OFF

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

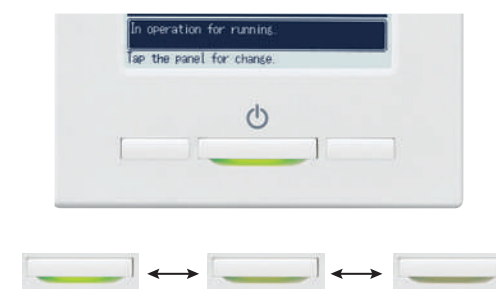
### Favorite Mode

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

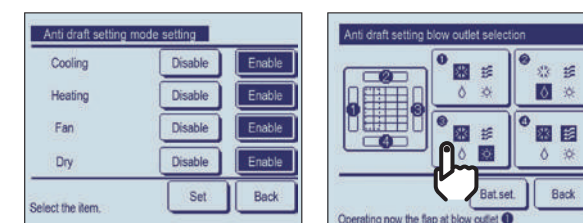
The brightness of the operation lamp behind Run/Stop switch can be adjusted by 10 stages.



### Draft prevention setting (only FDT/FDTC series)

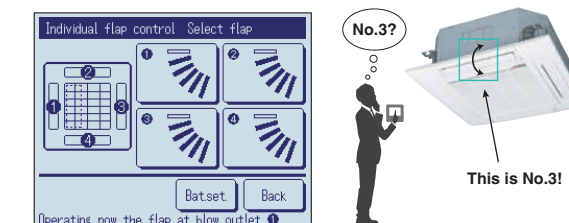
User can enable/disable the motion of panel with anti draft for each blow outlet for each operation mode. This function can be set while operating.

NEW



### Easy modification of Air Flow

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





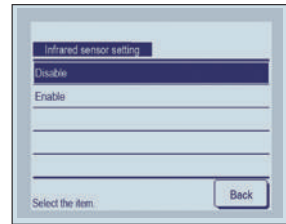
## Motion sensor control

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

- ① Select Enable / Disable  
**Motion sensor control**



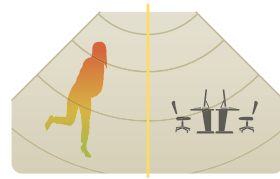
Enable / Disable



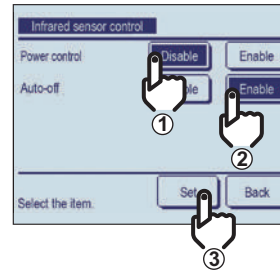
Select [Enable] / [Disable] for the motion sensor of the indoor unit connected to the R/C.

- ② Select Enable / Disable per control

- Power control
- Auto-off



Enable / Disable



## Backup Control

Control restricted to two indoor units (two groups)

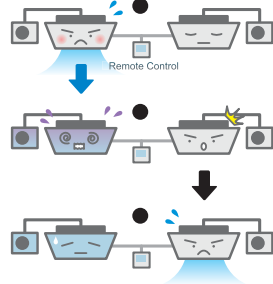


### Fault backup control



#### 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.

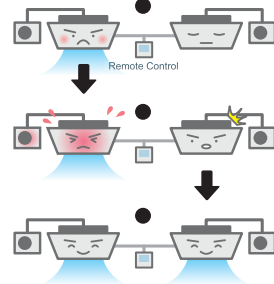


### Capacity backup control



#### Maintains users' comfort!

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

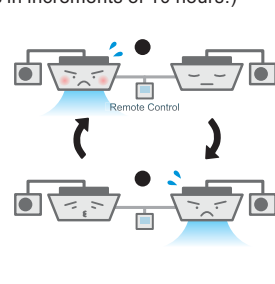


### Rotational operation control



#### 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 10 hours to 990 hours in increments of 10 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

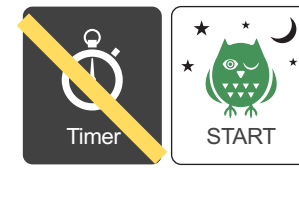
### External Output

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

Newly added

## Silent mode control

The Outdoor unit is controlled with priority on quietness. 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

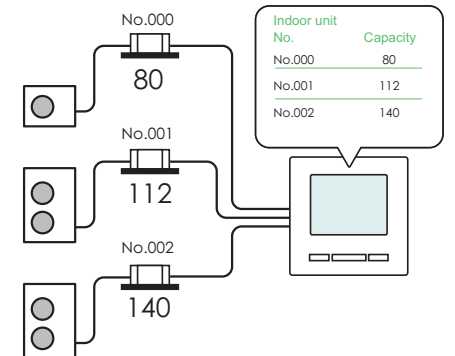
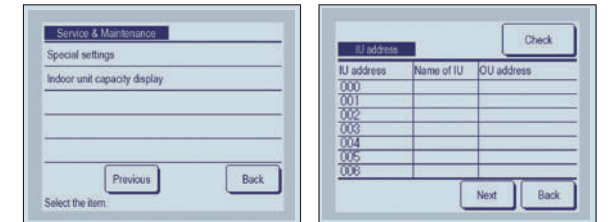
NEW

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



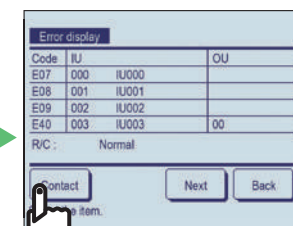
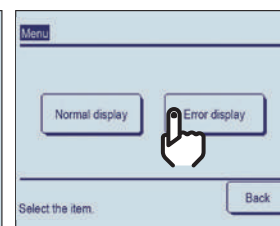
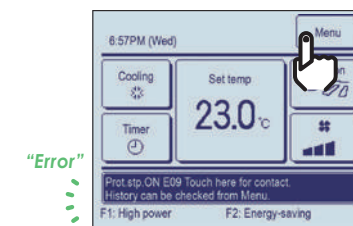
## Indoor unit capacity display

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
FDTTC	RCN-TC-5AW-E2
FDTW	RCN-TW-E2
FDTTS	RCN-TS-E2
FDK	RCN-K-E2, RCN-K71-E2
FDE	RCN-E-E3
FDFW	RCN-FW-E2
FDTQ, FDU, FDUM, FDU, FDUH, FDFL, FDFU, FDU-F	RCN-KIT4-E2

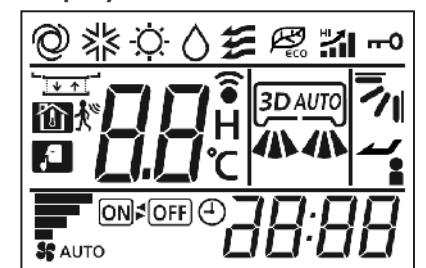
### Function added

- 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







## Easy Selection Tool E-solution

E-Solution is a design software tool which includes specification details of the latest KX VRF systems. By using E-Solution this simplifies the process and enables engineers to select the most cost-effective and energy efficient mix of indoor units, outdoor units, pipework and controls.

Engineers must register and download the E-solution software to ensure they are automatically sent updates as they become available and this can be done by simply visiting [www.mhiae.com/support-downloads/e-solution](http://www.mhiae.com/support-downloads/e-solution)

Furthermore it is 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 comprehensive operation and maintenance manuals for presentations to clients.

Engineers can also incorporate design information into their own formats and documents for personalised proposals.



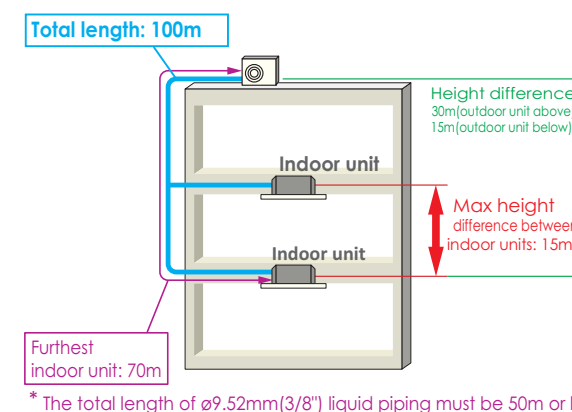
## Micro Outdoor units

### Heat pump systems 4, 5, 6HP (11.2kW ~ 15.5kW)

Model No.	Nominal Cooling Capacity
FDC112KXEN6	11.2kW (1Phase)
FDC140KXEN6	14.0kW (1Phase)
FDC155KXEN6	15.5kW (1Phase)
FDC112KXES6	11.2kW (3Phase)
FDC140KXES6	14.0kW (3Phase)
FDC155KXES6	15.5kW (3Phase)


 Blue  
Fin

- These heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 8 indoor units/up to 150% capacity.
- High efficiency with COP 4.0 & Above.
- These units employ DC inverter compressors ONLY.
- Industry leading total piping length up to 100m and a maximum pipe run of 70m.



Note:FDUT15KXE6F-E and FDTC15KXE6F can not be connected to the above systems.

## Specifications

Item		Model	FDC112KXEN6	FDC140KXEN6	FDC155KXEN6	FDC112KXE6	FDC140KXE6	FDC155KXE6	
			4HP	5HP	6HP	4HP	5HP	6HP	
Power source			1 Phase 220-240V, 50Hz			3 Phase 380-415V, 50Hz			
Nominal capacity	Cooling	kW	11.2	14.0	15.5	11.2	14.0	15.5	
			12.5	16.0	16.3	12.5	16.0	16.3	
Electrical characteristics	Starting current		A						
	Running current	Cooling Heating	A	5					
			A	13.5-12.4	20.6-18.9	23.3-21.3	4.5-4.1	6.9-6.3	7.8-7.1
			14.1-12.9	21.5-19.7	21.9-20.1	4.7-4.3	7.2-6.6	7.3-6.7	
Exterior dimensions	HxWxD	mm	845x970x370						
Net weight		kg	85			87			
Refrigerant charge	R410A	kg	5.0						
Sound pressure level	Cooling/Heating	dB(A)	52/54	53/55	53/56	52/54	53/55	53/56	
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			6	8	8	6	8	8	

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

### Heat pump systems 8, 10HP (22.4kW, 28.0kW)

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

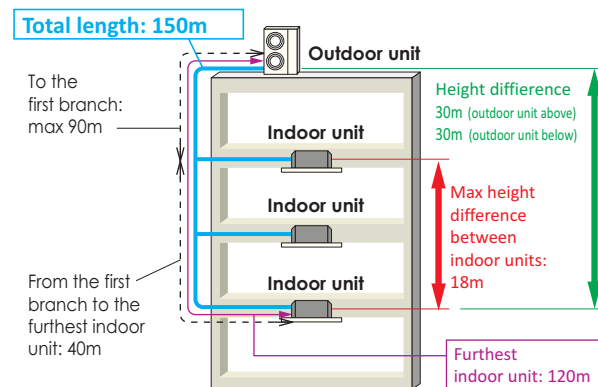
- These heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 8 indoor units / upto 120% capacity.
- High efficiency with COP 4.0 & above.
- These units employ DC inverter multiport compressors with concentrated winding motor.



Tropical Usage mode

Blue Fin

NEW



Side Discharge

## Specifications

Item	Model	FDC224KXZPE1	FDC280KXZPE1
Nominal horse power		8HP	10HP
Power source		3 Phase 380-415V, 50Hz	
Nominal capacity	Cooling	22.4	28.0
	Heating	22.4	28.0
Electrical characteristics	Starting current	A	5
	Running current	Cooling	9.2-8.5
		Heating	7.9-7.3
Exterior dimensions	HxWxD	mm	1505x970x370
Net weight		kg	165
Refrigerant charge	R410A	kg	8.9
Sound pressure level	Cooling/Heating	dB(A)	59/60 60/63
Refrigerant piping size	Liquid line	mm(in)	ø9.52(3/8")
	Gas line	mm(in)	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 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB. 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 Outdoor units

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

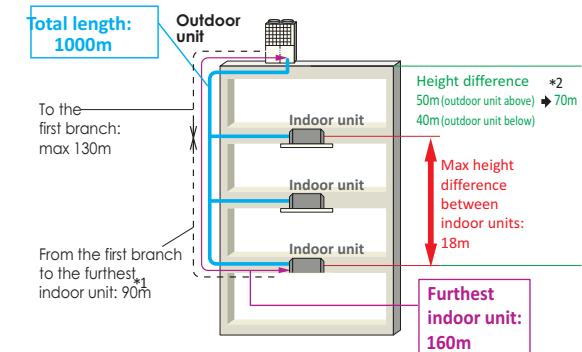
Model No.	Nominal Cooling Capacity
FDC280KXZE1	28.0kW (Optional)
FDC335KXZE1	33.5kW

- The KXZ heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 29 indoor units/up to 130% capacity.
- High efficiency with COP 3.9 & above.
- KXZ employs DC inverter compressors ONLY.
- Industry leading total piping length up to 1000m



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\*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.

Top Discharge

## Specifications

Item	Model	*FDC280KXZE1	FDC335KXZE1
Nominal horse power		10HP	12HP
Power source		3 Phase 380-415V, 50Hz	
Nominal capacity	Cooling	28.0	33.5
	Heating	31.5	37.5
Electrical characteristics	Starting current	A	8
	Running current	Cooling	11.9-10.9
		Heating	12.0-11.0
Exterior dimensions	HxWxD	mm	1690x1350x720
Net weight		kg	272
Refrigerant charge	R410A	kg	11.0
Sound pressure level	Cooling/Heating	dB(A)	55/57 61/58
Refrigerant piping size	Liquid line	mm(in)	ø9.52(3/8") ø12.7(1/2")
	Gas line	mm(in)	ø22.22(7/8") ø25.4(1") [ø22.22(7/8")]
Capacity connection	%	50~130	
Number of connectable indoor units		24	29

\* Available on special request.



## KXZ Outdoor units

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

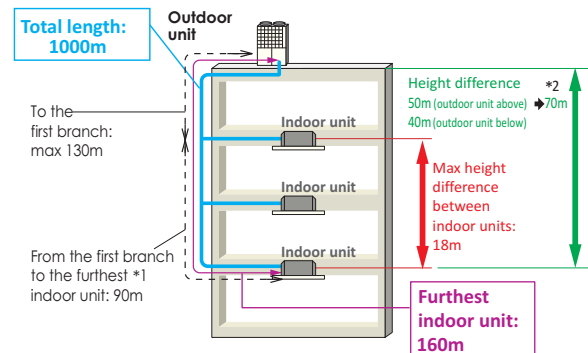
Model No.	Nominal Cooling Capacity
FDC400KXZE1	40.0kW
FDC450KXZE1	45.0kW
FDC500KXZE1	50.0kW
FDC560KXZE1	56.0kW

- The KXZ heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 48 indoor units / upto 130% capacity.
- High efficiency with COP 3.6 & above.
- KXZ employs DC inverter compressors ONLY.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.



Blue Fin

NEW



- \*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.

Top Discharge

## Specifications

Item	Model	FDC400KXZE1	FDC450KXZE1	FDC500KXZE1	FDC560KXZE1
Nominal horse power		14HP	16HP	18HP	20HP
Power source		3 Phase 380-415V, 50Hz			
Nominal capacity	Cooling	40.0	45.0	50.0	56.0
	Heating	45.0	50.0	56.0	63.0
Electrical characteristics	Starting current	8			
	Running current	Cooling	17.5-16.2	22.4-20.5	22.6-20.7
		Heating	17.5-16.2	20.4-18.7	21.8-20.0
Exterior dimensions	HxWxD	mm			
Net weight		kg			
Refrigerant charge	R410A	kg			
Sound pressure level	Cooling/Heating	dB(A)			
Refrigerant piping size	Liquid line	mm(in)			
	Gas line	mm(in)			
Capacity connection		%			
Number of connectable indoor units		34	39	43	48

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

## KX Space Saving Outdoor units

Heat pump systems 22, 24HP (61.5kW, 68.0kW)

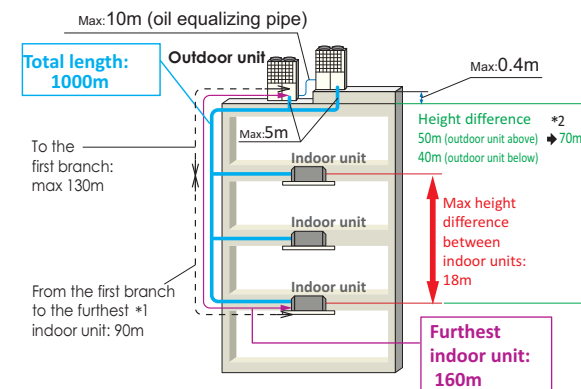
Model No.	Nominal Cooling Capacity
FDC615KXE6	61.5kW
FDC680KXE6	68.0kW

- The KX6 heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 72 indoor units/up to 160% capacity.
- High efficiency with COP 3.8 & above.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m



Blue Fin

NEW



- \*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.

Top Discharge

## Specifications

Item	Model	FDC615KXE6	FDC680KXE6
Nominal horse power		22HP	24HP
Power source		3 Phase 380-415V, 50Hz	
Nominal capacity	Cooling	61.5	68.0
	Heating	69.0	73.0
Electrical characteristics	Starting current	8	
	Running current	Cooling	33.1-30.3
		Heating	30.7-28.1
Exterior dimensions	HxWxD	mm	
Net weight		kg	
Refrigerant charge	R410A	kg	
Refrigerant piping size	Liquid line	mm(in)	
	Gas line	mm(in)	
Capacity connection		%	
Number of connectable indoor units		65	72

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



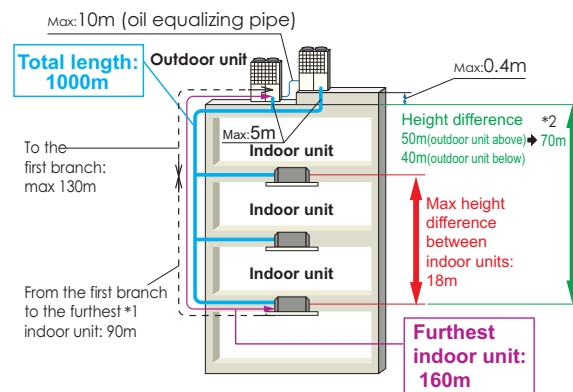
## KXZ Outdoor units

### Heat pump combination systems

26, 28, 30, 32, 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
FDC1000KXZE1	(FDC500+FDC500)	100.0kW
FDC1060KXZE1	(FDC500+FDC560)	106.0kW
FDC1120KXZE1	(FDC560+FDC560)	112.0kW

- The KXZ heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 80 indoor units / up to 130% capacity.
- High efficiency with COP 3.7 & above.
- KXZ employs DC inverter compressors ONLY.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160 m



\*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.

## Specifications

Item	Model	FDC735KXZE1	FDC800KXZE1	FDC850KXZE1	FDC900KXZE1	FDC1000KXZE1	FDC1060KXZE1	FDC1120KXZE1
Combination (FDC)		335KXZE1	400KXZE1	400KXZE1	450KXZE1	500KXZE1	500KXZE1	560KXZE1
		400KXZE1	400KXZE1	450KXZE1	450KXZE1	500KXZE1	560KXZE1	560KXZE1
Nominal horse power		26HP	28HP	30HP	32HP	36HP	38HP	40HP
Power source		3 Phase 380-415V, 50Hz						
Nominal capacity	Cooling	kW						
	Heating	kW						
Electrical characteristics	Starting current	A						
	Running current	A						
Exterior dimensions	HxWxD	mm						
	Net weight	kg						
Refrigerant charge	R410A	kg						
Refrigerant piping size	Liquid line	mm(in)						
	Gas line	mm(in)						
Capacity connection		%						
Number of connectable indoor units								

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

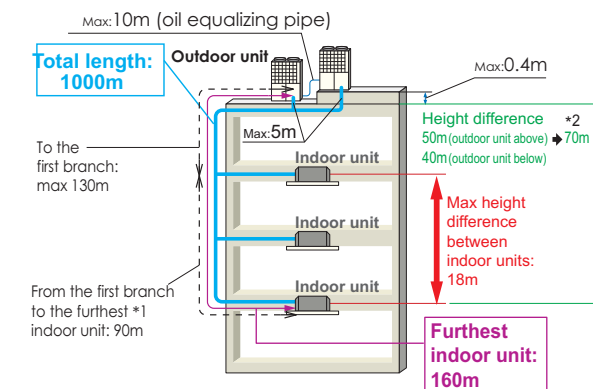
## KXZ Outdoor units

### Heat pump combination systems

42, 44, 46, 48, 54, 56, 58, 60HP (120.0kW~168.0kW)

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
FDC1500KXZE1	(FDC500+FDC500+FDC500)	150.0kW
FDC1560KXZE1	(FDC500+FDC500+FDC560)	156.0kW
FDC1620KXZE1	(FDC500+FDC560+FDC560)	162.0kW
FDC1680KXZE1	(FDC560+FDC560+FDC560)	168.0kW

- The KXZ heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 80 indoor units/ upto 130% capacity.
- High efficiency with COP 3.6 & above.
- KXZ employs DC inverter compressors ONLY.
- 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.

## Specifications

Item	Model	FDC1200KXZE1	FDC1250KXZE1	FDC1300KXZE1	FDC1350KXZE1	FDC1500KXZE1	FDC1560KXZE1	FDC1620KXZE1	FDC1680KXZE1
Combination (FDC)		400KXZE1	400KXZE1	400KXZE1	450KXZE1	500KXZE1	500KXZE1	500KXZE1	560KXZE1
		400KXZE1	400KXZE1	450KXZE1	450KXZE1	500KXZE1	500KXZE1	560KXZE1	560KXZE1
Nominal horse power		42HP	44HP	46HP	48HP	54HP	56HP	58HP	60HP
Power source		3 Phase 380-415V, 50Hz							
Nominal capacity	Cooling	kW							
	Heating	kW							
Electrical characteristics	Starting current	A							
	Running current	A							
Exterior dimensions	HxWxD	mm							
	Net weight	kg							
Refrigerant charge	R410A	kg							
Refrigerant piping size	Liquid line	mm(in)							
	Gas line	mm(in)							
Capacity connection		%							
Number of connectable indoor units									

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



## KX Refrigerant piping

### Installation of Interconnecting Pipework

Mitsubishi KX equipment is manufactured to the highest standards of quality and reliability. It is imperative 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 oxidation 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

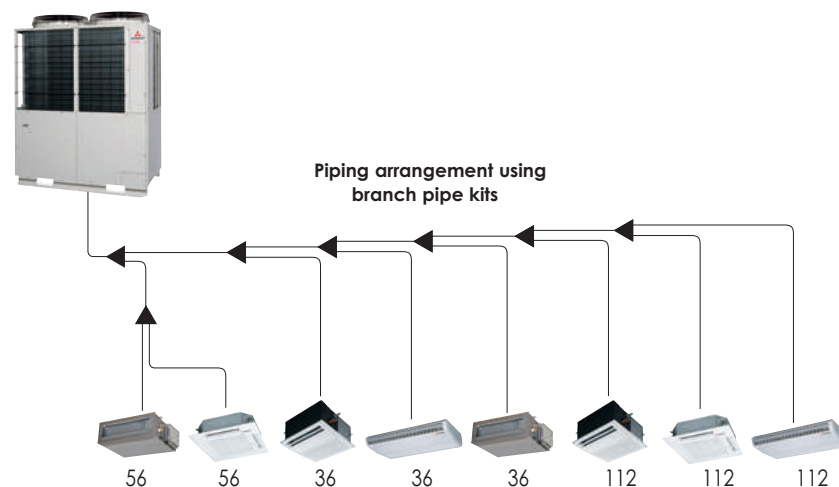
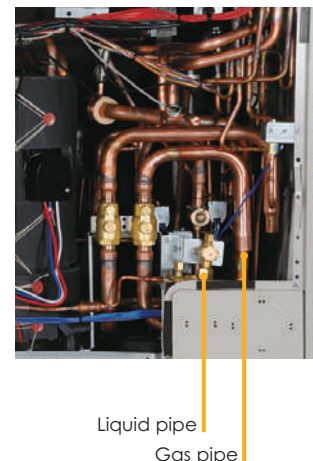
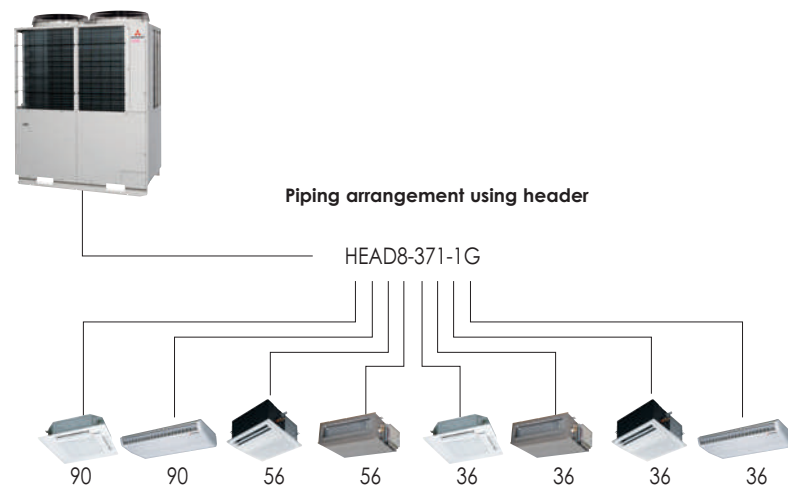
connection of the outdoor units, and sealing of insulation joints, the pipework must be pressure tested for leakage, using dry nitrogen.

### Additional Refrigerant

Additional R410A refrigerant only shall be used, and 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.

### Single outdoor unit piping examples:



## KX Refrigerant piping

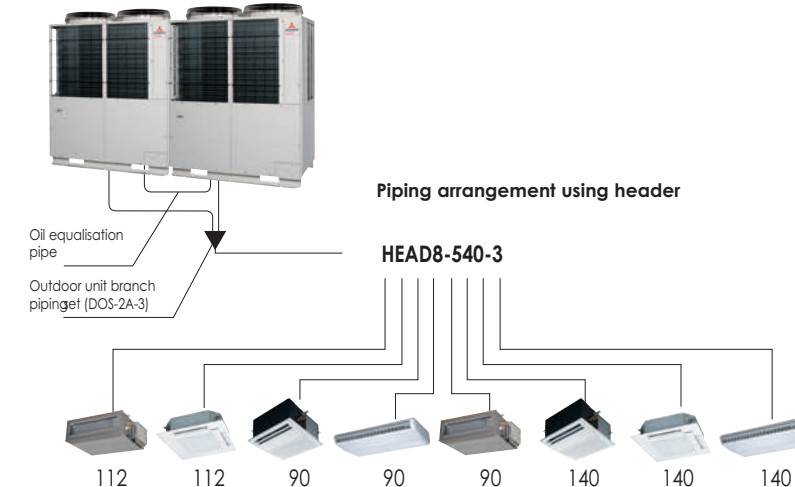
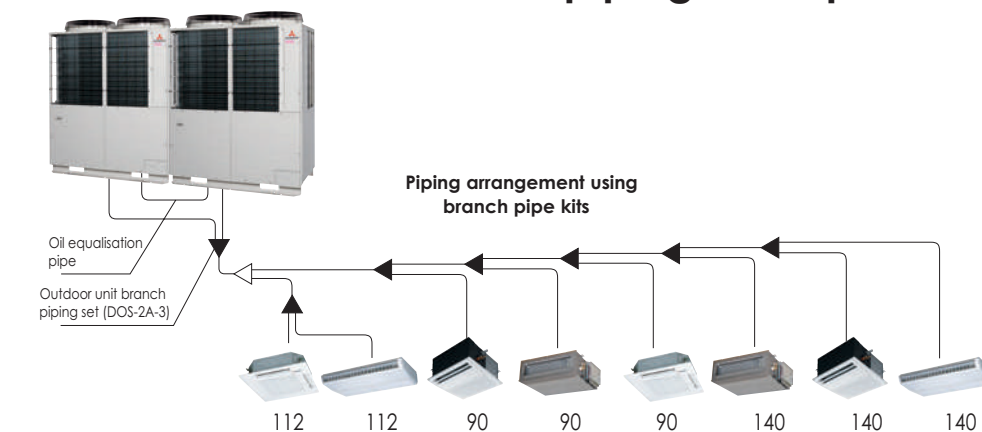
### Main (Outdoor unit side branching pipe - Indoor unit side first branching pipe)

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		mm	inch
	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	ø9.52	3/8"
335	ø25.4 (ø22.22) × t 1.0				ø12.7	1/2"
400	ø25.4 (ø28.58) × t 1.0		ø28.58 × t 1.0		ø15.88	5/8"
450					ø19.05	3/4"
475					ø22.22	7/8"
500	ø28.58 × t 1.0	ø12.7 × t 0.8	ø31.8 × t 1.1 (ø28.58 × t 1.0)	ø15.88 × t 1.0	ø25.4	1"
560						
615						
670						
735						
800	ø31.8 × t 1.1 (ø34.92 × t 1.2)	ø15.88 × t 1.0		ø19.05 × t 1.0	mm	inch
850					ø28.58	1 1/8"
900					ø31.8	1 1/4"
950					ø34.92	1 3/8"
1000					ø38.1	1 1/2"
1060					ø44.5	1 3/4"
1120					ø50.8	2"
1200						
1250	ø38.1 × t 1.35 (ø34.92 × t 1.2)	ø19.05 × t 1.0	ø38.1 × t 1.35 (ø34.92 × t 1.2)	ø22.22 × t 1.0		
1300						
1350						
1425						
1450						
1500						
1560						
1620						
1680						

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

### Combination outdoor unit piping examples:



Branch pipes



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

Header pipe



HEAD6-180-1G

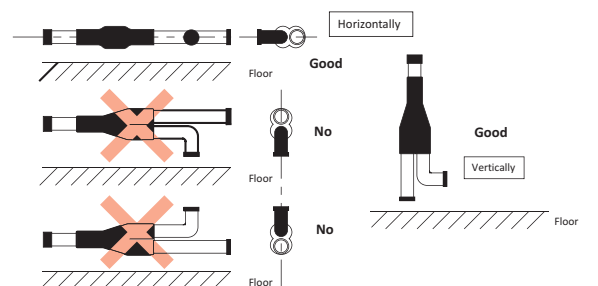
Combination outdoor unit manifold



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



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



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



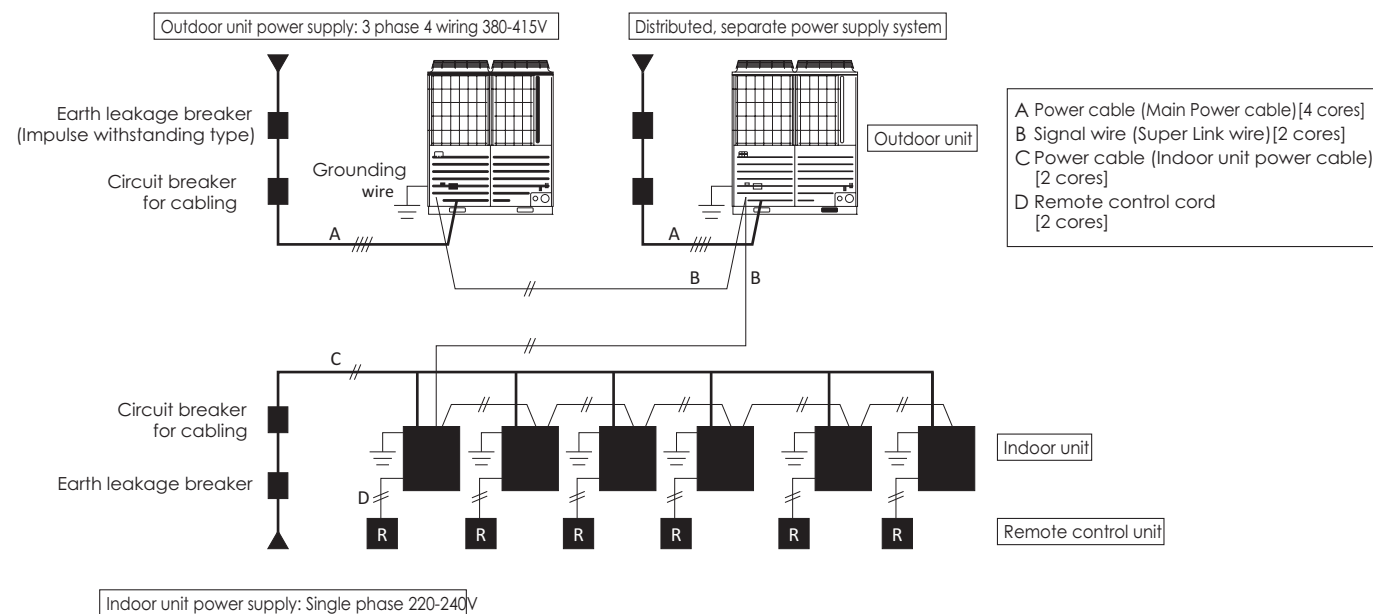
## KX electrical wiring - power supply

KX new design includes greatly simplified wiring requirements utilizing 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.

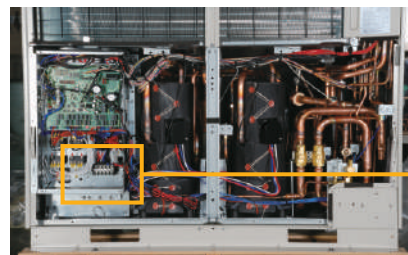
Separate power supplies should be used for the outdoor unit (3phase) and the indoor units (1phase).  
only control wiring is connected from outdoor to indoor unit



### CAUTION

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

KXZ outdoor unit mechanical compartment



Electrical component box



Outdoor unit power supply terminal block

## KX 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 0.75mm<sup>2</sup> or 1.25mm<sup>2</sup>.

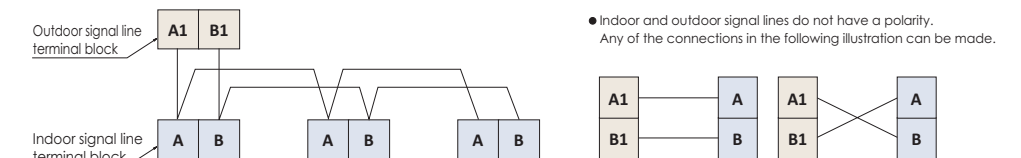
	0.75mm <sup>2</sup>	1.25mm <sup>2</sup>
~1000m	YES	YES
1000~1500m	YES	NO

3. We recommend the both ends of the shield of the cable are connected to ground (earth) at all the indoor units and outdoor units.

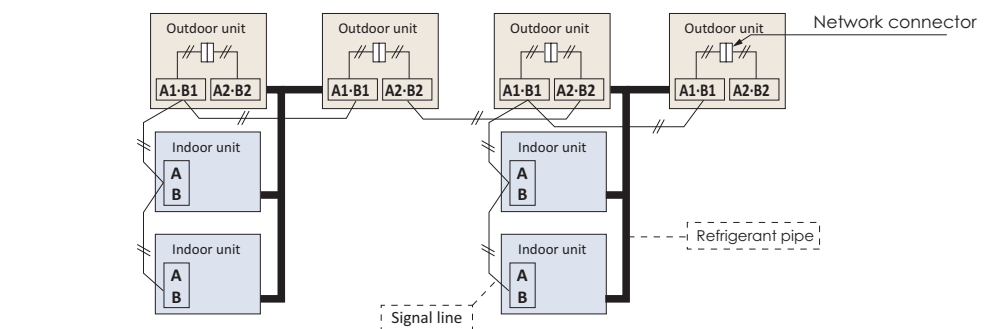
4. When plural outdoor units are used,
  - Connect the signal cable between indoor and outdoor units and the signal cable between outdoor units belonging to the same refrigerant line to A1 and B1.
  - Connect the signal line between outdoor units on different refrigerant lines to A2 and B2.

5. For current specification of 2-core (AB) wiring, please consult your MHI dealer.

(1) When one outdoor unit is used

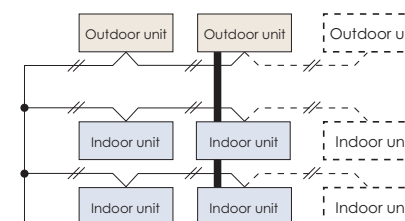


(2) When plural outdoor units are used



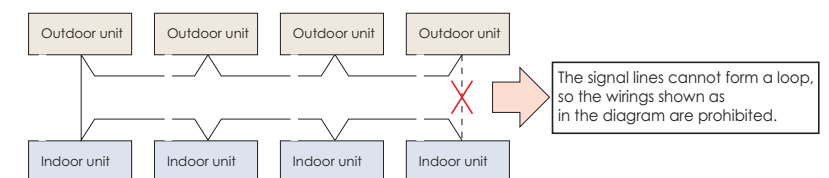
- (a) The maximum number of indoor units that can be connected in a system is 128 and it is possible to configure outdoor units and/or indoor units as an outdoor or indoor unit group connected with each other with two wires.
- (b) The signal wires can also be connected using the method shown below.

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



### Important

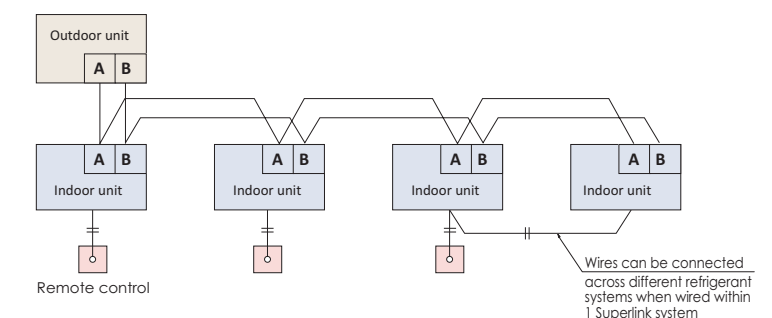
o Loop wiring prohibited



## Remote control wiring specifications

For interconnecting wiring between the remote control and indoor units (XY wiring) use 2-core cable size 0.3mm<sup>2</sup>. 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	0.5mm <sup>2</sup> x 2 core
To 300	0.75mm <sup>2</sup> x 2 core
To 400	1.25mm <sup>2</sup> x 2 core
To 600	2.0mm <sup>2</sup> x 2 core



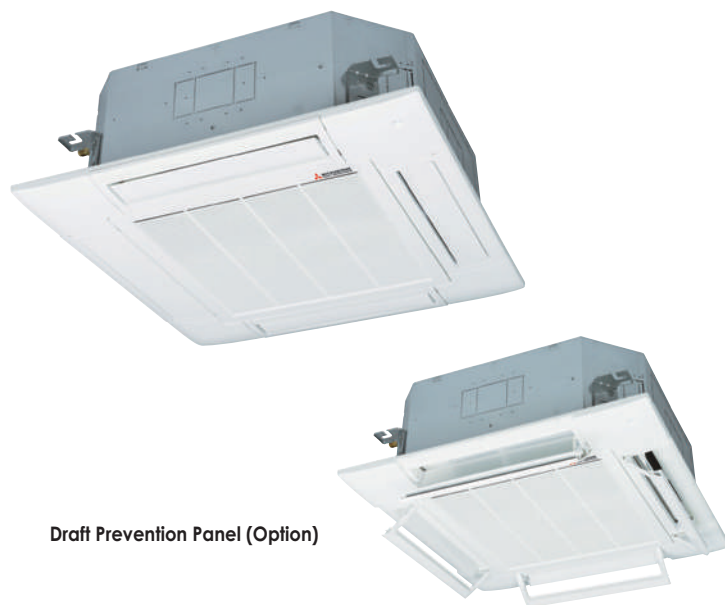
we recommend for using 1.5mm<sup>2</sup> x 2 core for Indian conditions



# 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

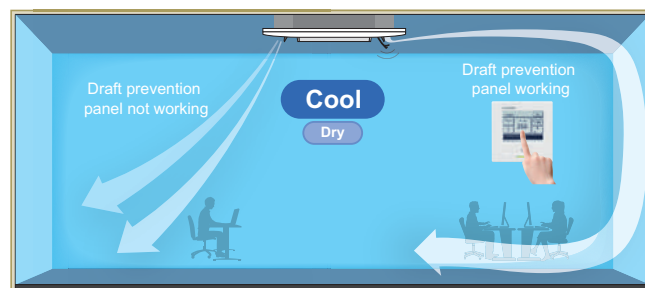


RCN-T-5AW-E2

## Draft Prevention Panel

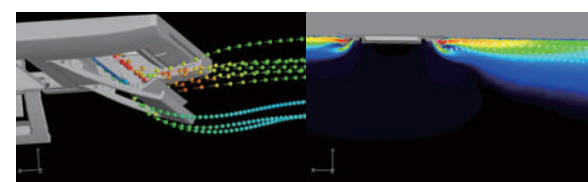
(Option)

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.

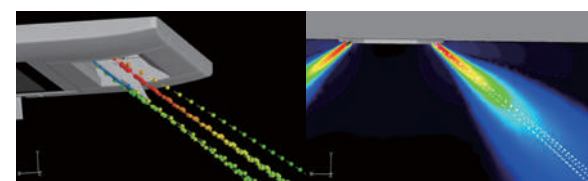


User can position Draft Prevention Panel panels by using the remote controller only (RC-EX3A, RCN-T-5AW-E2).

Advanced airflow control technology cultivated through aircraft development.



Draft Prevention Panel working



Draft Prevention Panel placed at off position

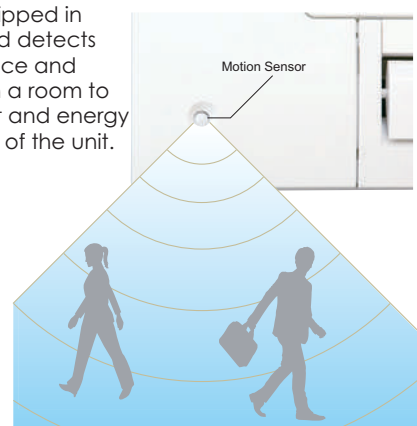
## Motion Sensor

(Option)

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



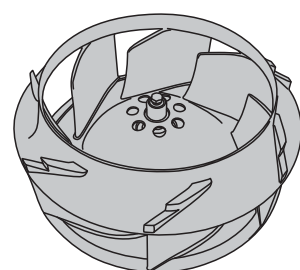
LB-T-5W-E



## Improve the aerodynamic performance of the unit

New designed component can have better aerodynamic performance and achieve lower noise.

## New design turbo fan



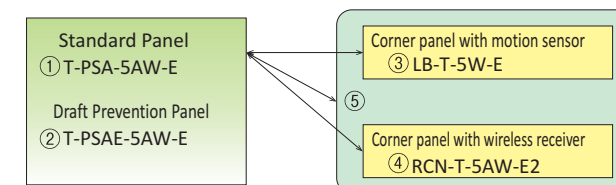
## Fan guard (standard equipment)



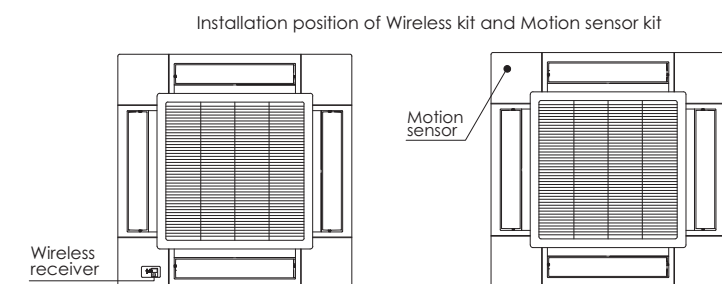
## Panel select pattern

(Option)

8 patterns of panel are available.



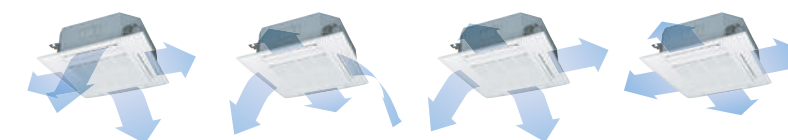
- ① Standard Panel only
- ①+② Standard Panel with corner panel with motion sensor
- ①+② Standard Panel with corner panel with wireless receiver
- ①+② Standard Panel with corner panel with motion sensor & corner panel with wireless receiver
- ② Draft Prevention Panel only
- ②+③ Draft Prevention Panel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



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

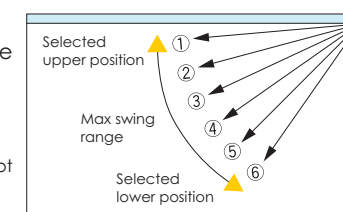
## Individual flap control system

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.



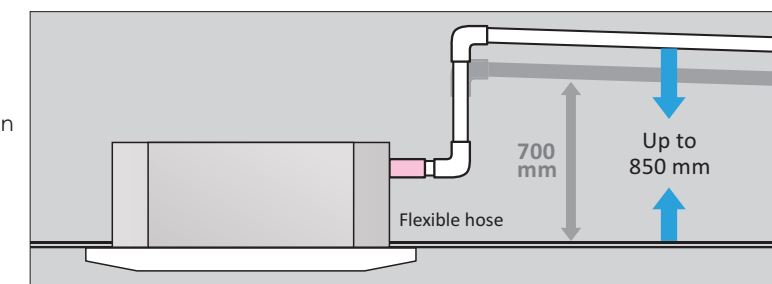
Flap can swing within an upper and lower flap range position within can be selected with a wired remote control.

※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.

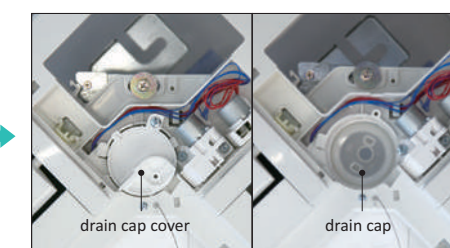


## Easy check of drain pan

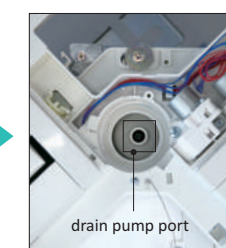
Easy check of drain pan condition is available by removing corner lid only.



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	FDT90KXZE1	FDT112KXZE1	FDT140KXZE1	FDT160KXZE1
Nominal cooling capacity		kW	2.8	3.6	4.5	5.6	7.1	9.0	11.2	14.0	16.0
Nominal heating capacity		kW	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	0.02-0.02	0.03-0.03		0.04-0.04	0.08-0.08	0.13-0.13	0.14-0.14		
	Heating		0.02-0.02	0.03-0.03		0.04-0.04	0.08-0.08	0.13-0.13	0.14-0.14		
Sound power level		dB(A)	49		50	55	62	65	66		
Sound pressure level*		dB(A)	Hi:33 Me:30 Lo:28		Hi:33 Me:31 Lo:29		Hi:35 Me:32 Lo:28	Hi:38 Me:36 Lo:31	Hi:39 Me:37 Lo:31	Hi:42 Me:39 Lo:32	Hi:42 Me:39 Lo:33
Exterior dimensions H x W x D		mm	Unit:236x840x840 Panel:35x950x950						Unit:298x840x840 Panel:35x950x950		
Net weight		kg	Unit:20 Standard Panel:5			Unit:21.5 Standard Panel:5			Unit:25 Standard Panel:5		
Air flow*		m <sup>3</sup> /min	Hi:14 Me:12 Lo:10		Hi:15 Me:13 Lo:10	Hi:16 Me:13 Lo:11	Hi:17 Me:14 Lo:12	Hi:25 Me:22 Lo:15	Hi:26 Me:23 Lo:17	Hi:28 Me:25 Lo:18	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-EX3, RC-E5, RCH-E3    wireless:RCN-T-5AW-E2								
Installation data		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")			
Refrigerant piping size											

2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

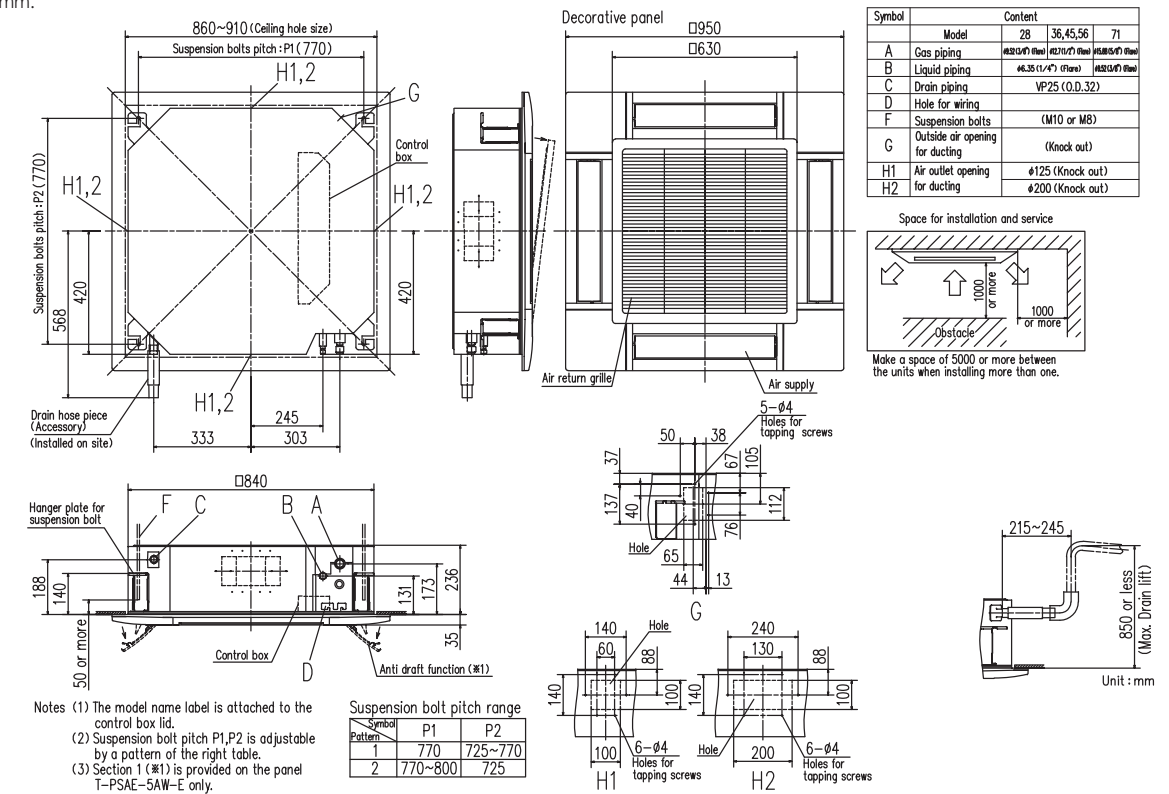
\* Powerful-Hi can be selected. Sound pressure level: FDT28/36 37dB(A), FDT45/56 38dB(A), FDT71 47dB(A), FDT90/112/140/160 49dB(A). Air flow: FDT28 15m<sup>3</sup>/min, FDT36 16m<sup>3</sup>/min, FDT45 17m<sup>3</sup>/min, FDT56 20m<sup>3</sup>/min, FDT71 28m<sup>3</sup>/min, FDT90 37 m<sup>3</sup>/min., FDT112/140/160 38m<sup>3</sup>/min.



## Dimensions

All measurements in mm.

FDT28KXZE1  
36KXZE1  
45KXZE1  
56KXZE1  
71KXZE1





# Ceiling Cassette -4way Compact FDTC

## Model No.

FDTC15KXZE1  
FDTC22KXZE1  
FDTC28KXZE1  
FDTC36KXZE1  
FDTC45KXZE1  
FDTC56KXZE1

**NEW**



**Draft Prevention Panel (option)**

Fits into standard grid ceiling 600 x 600

## Remote control (option)

Wired



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

Wireless

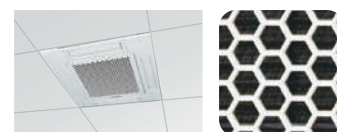


**RCN-TC-5AW-E2**

European design & Flat panel



## Integrated ceiling system design

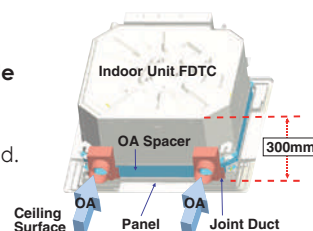


A grille designed with a unique structure and a clean white panel harmonize with interior. This design was invented by zweigrad GmbH & Co. KG in Germany.

## Taking OA (Outside Air) into inside

Fresh air can be taken in without option parts. When it is insufficient, existing option parts also can be used.

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



## Compact Design

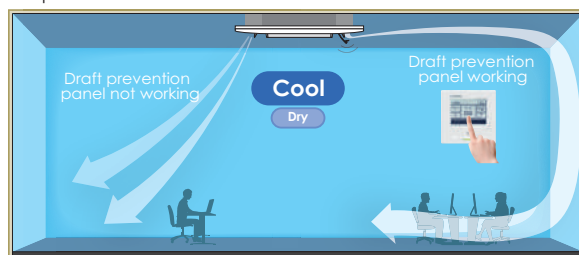
700 mm → 620 mm

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

## 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 Draft Prevention Panel panels by using the remote controller only (RC-EX3A, RCN-TC-5AW-E2).

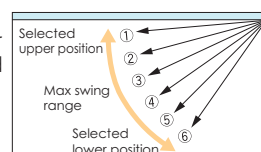
## Individual flap control system

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.



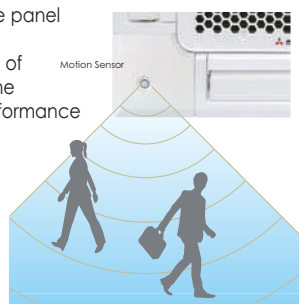
## Motion Sensor

(Option)

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



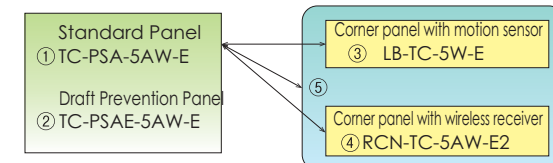
**LB-TC-5W-E**



## Panel select pattern

(Option)

8 patterns of panel are available.



## 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

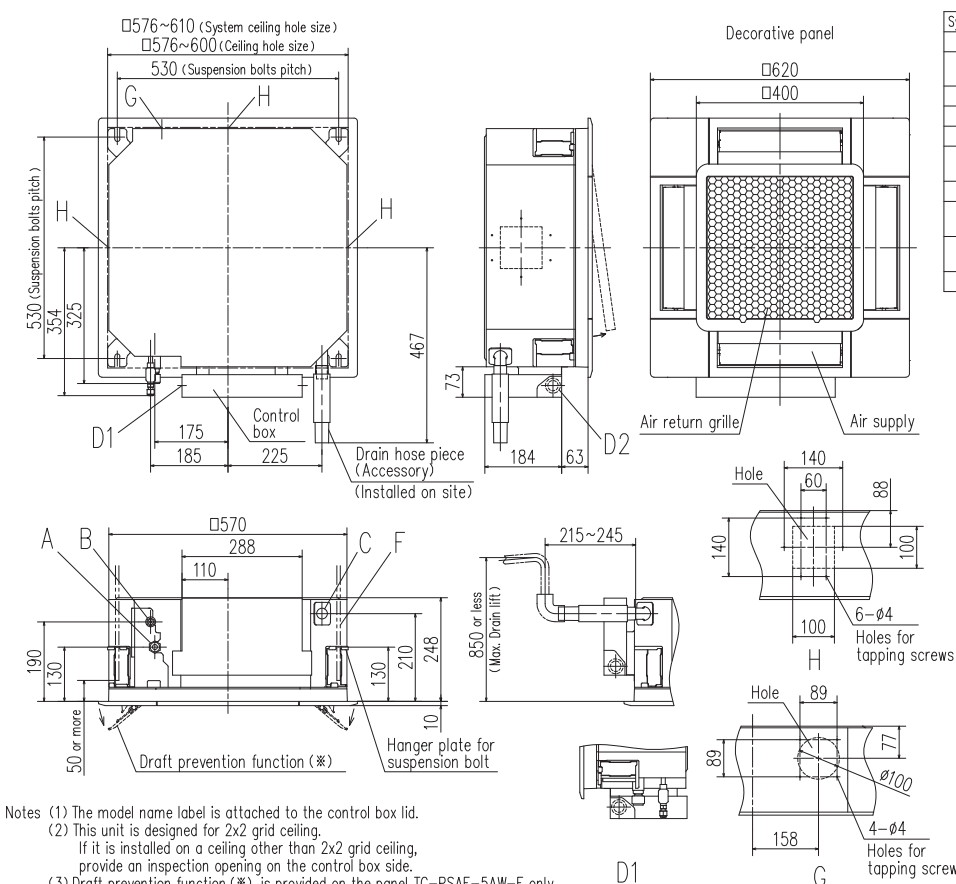
Item	Model	FDTC15KXZE1	FDTC22KXZE1	FDTC28KXZE1	FDTC36KXZE1	FDTC45KXZE1	FDTC56KXZE1
Nominal cooling capacity	kW	1.5	2.2	2.8	3.6	4.5	5.6
Nominal heating capacity	kW	1.7	2.5	3.2	4.0	5.0	6.3
Power source		1 Phase 220-240V, 50Hz					
Power consumption	Cooling Heating	kW	0.03-0.03		0.04-0.04	0.05-0.05	0.06-0.06
			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	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	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	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	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	mm(in)	Liquid line:ø6.35(1/4")			Liquid line:ø6.35(1/4")		
Refrigerant piping size		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 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.

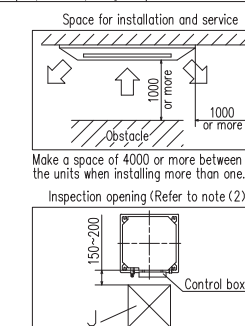
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

# Dimensions

All measurements in mm.



Symbol	Model	Content
A	Gas piping	15,22,28 #9.52 (3/8") #12.7 (1/2") (Flare)
B	Liquid piping	#6.35 (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

## Model No.

FDTW28KXE6F	FDTW90KXE6F
FDTW45KXE6F	FDTW112KXE6F
FDTW56KXE6F	FDTW140KXE6F
FDTW71KXE6F	



## Remote control (option)

Wired

NEW



RC-EX3 RC-E5 RCH-E3

Wireless

NEW



RCN-TW-E2

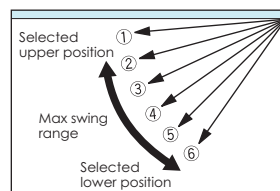
FDTW90~140

## 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.

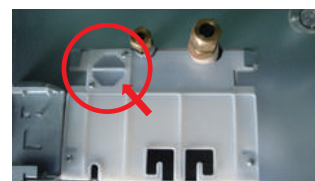


\*The wireless remote control is not applicable to the individual flap control system.

## Installation workability

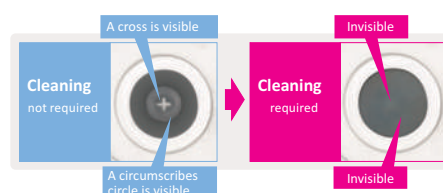
### Drainage spout

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



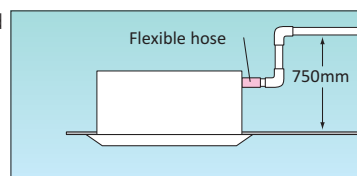
### Transparent access hole to drain pan

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



## 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.



## 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	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)	Hi:38 Me:34 Lo:31					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	Hi:12 Me:10 Lo:9				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-EX3, 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")			

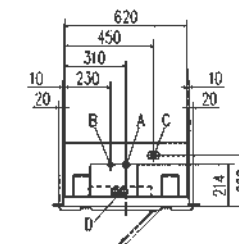
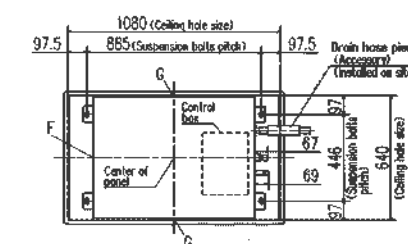
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB. 2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

\* Powerful-Hi can be selected. Sound pressure level: FDTW28/45/56/71 42dB(A), FDTW90/112/140 48dB(A). Air flow: FDTW28/45/56/71 14.5m³/min, FDTW90/112/140 31m³/min.

## Dimensions

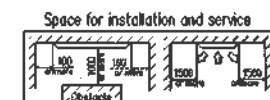
All measurements in mm.

FDTW28KXE6F, 45KXE6F, 56KXE6F, 71KXE6F

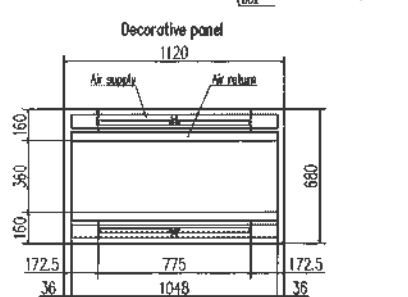
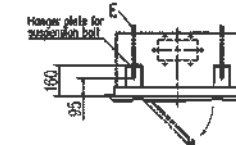
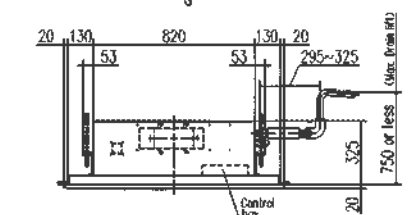


Symbol	Model	28	45,56	71
A	Gas piping	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)
B	Liquid piping	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)
C	Drain piping	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)
D	Drain hose piece	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)	ø6.35(1/4") (Flare)
E	Suspension bolts	(M10)	(M10)	(M10)
F	Outside air opening for ducting	(Knock out)	(Knock out)	(Knock out)
G	Air outlet opening for ducting	(Knock out)	(Knock out)	(Knock out)

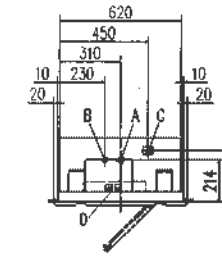
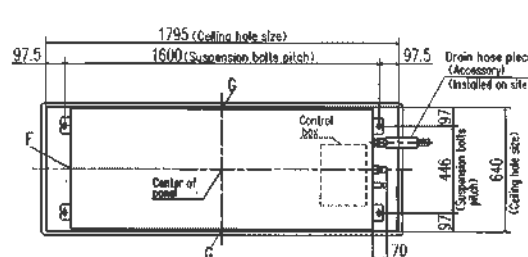
Notes (1) The model name label is attached on the lid of the control box.



Make a space of 400 or more between the units when installing more than one.

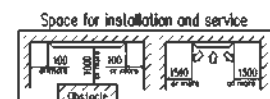


FDTW90KXE6F, 112KXE6F, 140KXE6F

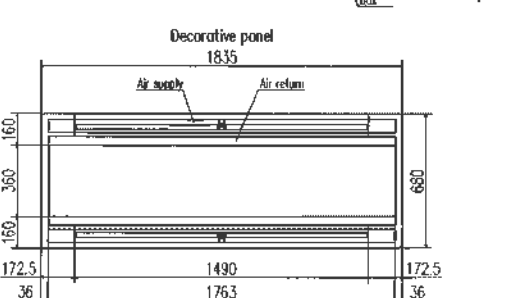
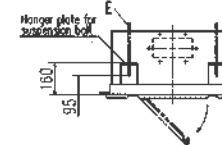
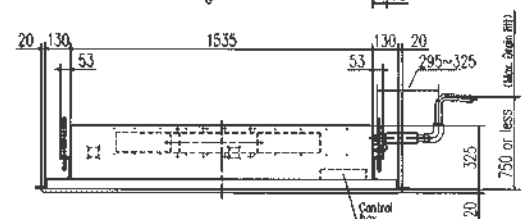


Symbol	Model	90,112,140
A	Gas piping	ø15.88(5/8") (Flare)
B	Liquid piping	ø9.52(3/8") (Flare)
C	Drain piping	ø9.52(3/8") (Flare)
D	Drain hose piece	ø9.52(3/8") (Flare)
E	Suspension bolts	(M10)
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)

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



Make a space of 500 or more between the units when installing more than one.





# Ceiling Cassette -1way- FDTS

**Model No.**

 FDTS45KXE6F  
 FDTS71KXE6F

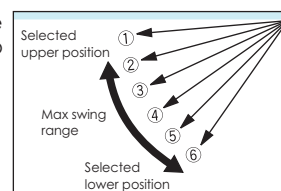
**Remote control (option)**

**Individual flap control system**

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



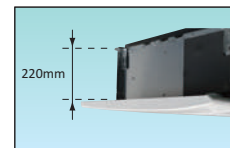
The flap can swing within the range of upper and lower flap position selected with wired remote control.



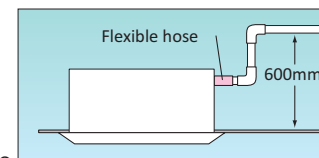
\*The wireless remote control is not applicable to the individual flap control system.

**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.


**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.


**Wireless remote control**

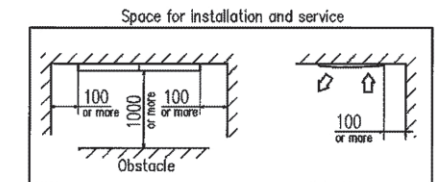
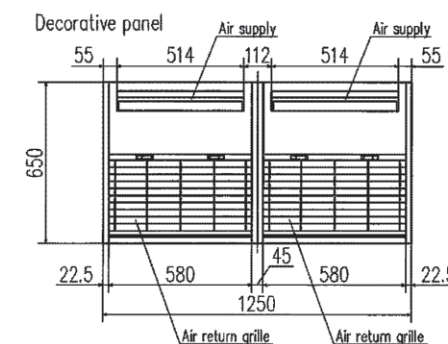
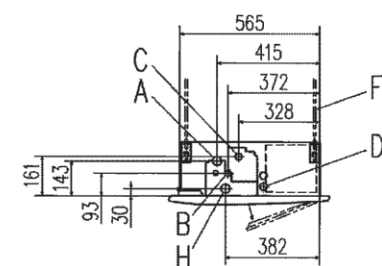
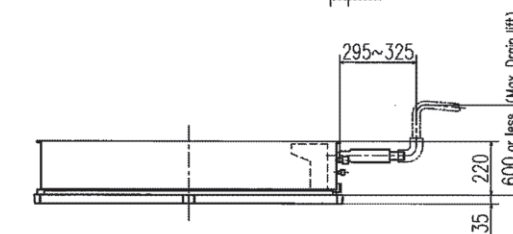
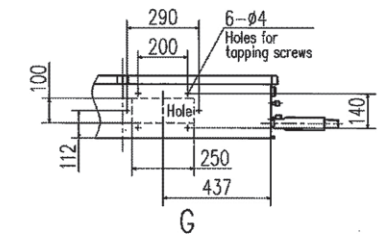
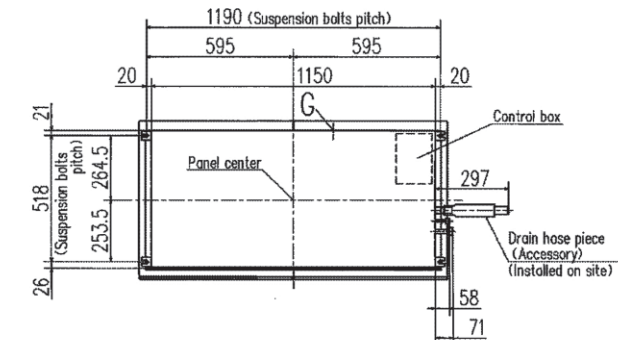
For wireless remote control simply attach an additional panel with infrared receiver on the right side of the main decorative panel.



RCN-TS-E2

## Dimensions

All measurements in mm.



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

## 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	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)	Hi:40 Me:38 Lo:35	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 *	m <sup>3</sup> /min	Hi:12 Me:11 Lo:9.5	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-EX3, RC-E5, RCH-E3 wireless:RCN-TS-E2	
Installation data		Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2")	Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8")
Refrigerant piping size	mm(in)		

1. The data are measured under the following conditions[ISO-T1]. Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.  
 2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.  
 \* Powerful-Hi can be selected. Sound pressure level: FDTS45 42dB(A), FDTS71 49dB(A). Air flow: FDTS45 13m<sup>3</sup>/min, FDTS71 17m<sup>3</sup>/min.

Symbol	Model	45	71
A	Gas piping	ø12.7 (1/2") (Flare)	ø15.88 (5/8") (Flare)
B	Liquid piping	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)	
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

For grid type ceiling:  
TQ-PSA-15W-E

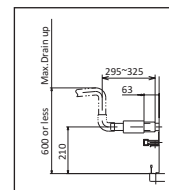
For gypsum ceiling:  
TQ-PSB-15W-E

## Compact design

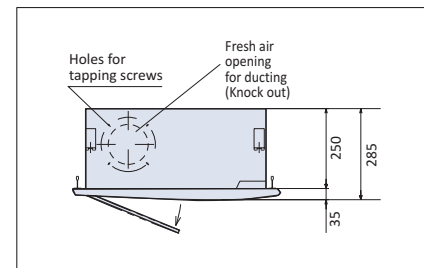
- Comfortable effective cooling for small rooms, with low fan speed air flow at just 5.4m<sup>3</sup>/min.



Optional wide panel shown for solid ceiling



Condensate drain pump included as standard



Ultra slim design at just 250mm above the ceiling

## Remote control (option)

Wired

NEW



RC-EX3 RC-E5 RCH-E3

Wireless

NEW



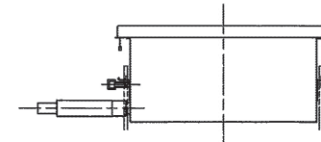
RCN-KIT4-E2

1 way compact Cassette is designed for 600x600 grid ceiling  
If it is installed on a ceiling other than grid ceiling, than use panel TQ-PSB-15W-E.

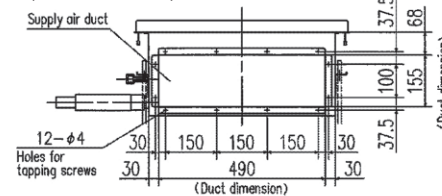
## Dimensions

All measurements in mm.

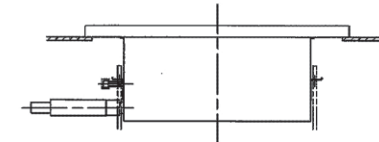
Direct blow panel (TQ-PSA-15W-E)



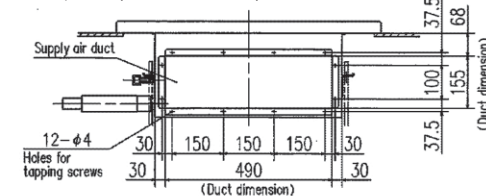
Duct panel (QR-PNA-14W-ER)



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



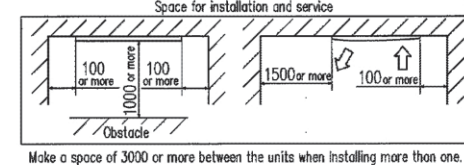
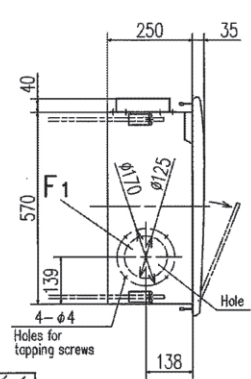
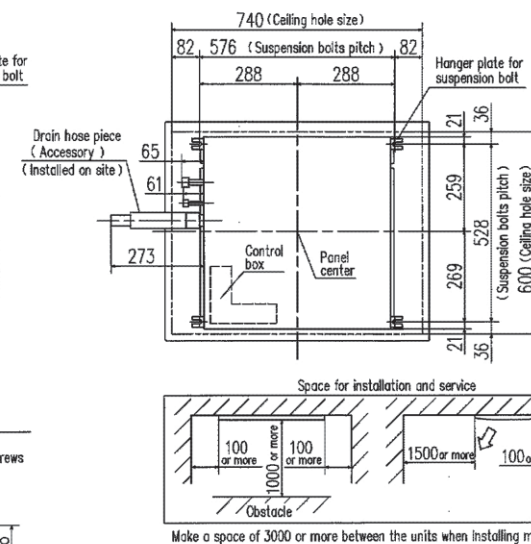
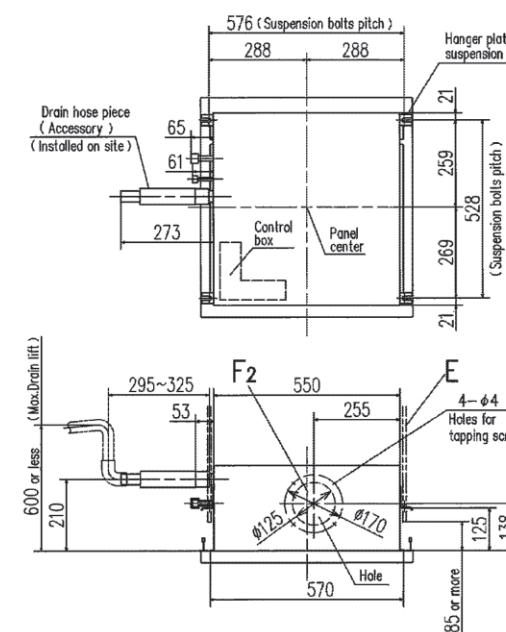
Duct panel (QR-PNB-14W-ER)



Symbol	Model	Content
A	FDTQ22KXE6F, 28KXE6F	FDTQ36KXE6F
B	Gas piping	Φ9.52 (3/8") (Flare) Φ12.7 (1/2") (Flare)
C	Liquid piping	Φ6.35 (1/4") (Flare)
D	Drain piping	VP 25 (O.D. 32)
E	Hole for wiring	Φ30
F	Suspension bolts	M10
F1,2	Outside air opening for ducting	(Knock out)

## Notes

- The model name label is attached on the fan case inside the air return grille.
- This unit is designed for 2X2 grid ceiling.  
\* In case of Direct blow panel



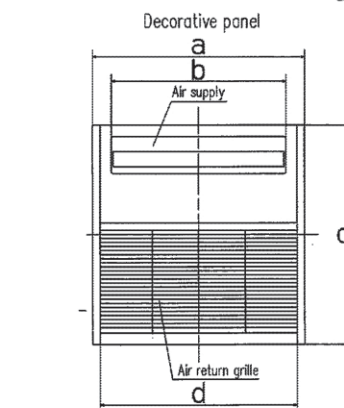
Make a space of 3000 or more between the units when installing more than one.

## 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) Hi:41 Me:38 Lo:33		Hi:41 Me:38 Lo:33		Hi:41 Me:38 Lo:33		Hi:41 Me:38 Lo:33		Hi:41 Me:38 Lo:33		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 Hi:7 Me:6 Lo:5		Hi:7 Me:6 Lo:5		Hi:7 Me:6 Lo:5		Hi:7 Me:6 Lo:5		Hi:7 Me:6 Lo:5		Hi:7 Me:6 Lo:5	
Outside air intake		Possible											
Air filter, Q'ty		Pocket Plastic net x1 (Washable)											
Remote control(option)		wired:RC-EX3, RC-E5, RCH-E3    wireless:RCN-KIT4-E2											
Installation data		Liquid line:ø6.35(1/4")											
Refrigerant piping size		Gas line:ø9.52(3/8")											
		Liquid line:ø6.35(1/4")											
		Gas line:ø12.7(1/2")											

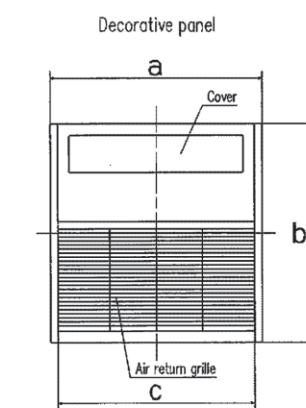
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.  
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

\* Powerful-Hi can be selected. Sound pressure level: FDTQ22/38/36 45dB(A). Air flow: FDTQ22/38/36 8m<sup>3</sup>/min.



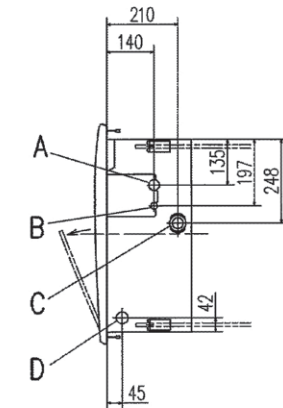
Decorative panel

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



Decorative panel

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

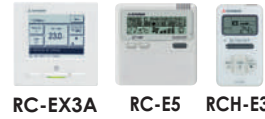


## Model No.

FDU224KXZE1  
 FDU280KXZE1

## Remote control (option)

Wired



Wireless



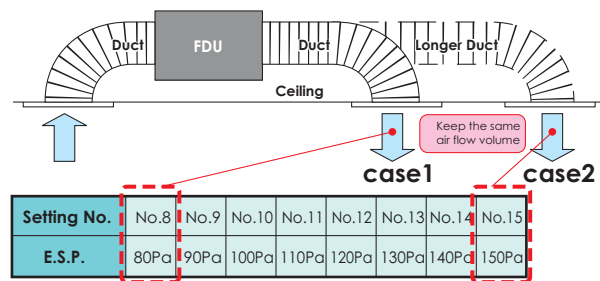
RCN-KIT4-E2

## External Static Pressure(E.S.P) control

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



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



\*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>

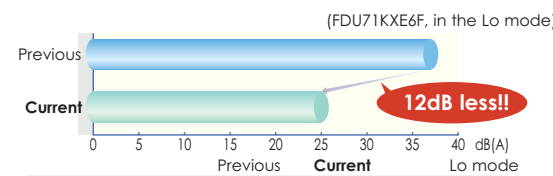
Previous  
 10~130Pa → Current  
 10~200Pa

## Thin design



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

## Reduction of sound pressure level

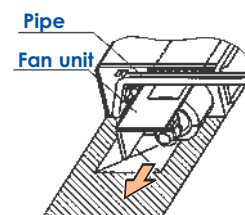


## Transparent inspection window

Dirt condition of the bottom of a drain pan can be checked through this transparent inspection window without removing drain pan. (Please refer to P84)

## 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 FDU22~160KXE6F & 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	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		Liquid line:ø6.35(1/4")			Liquid line:ø9.52(3/8")			
Refrigerant piping size	mm(in)	Gas line:ø12.7(1/2")			Gas line:ø15.88(5/8")			

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

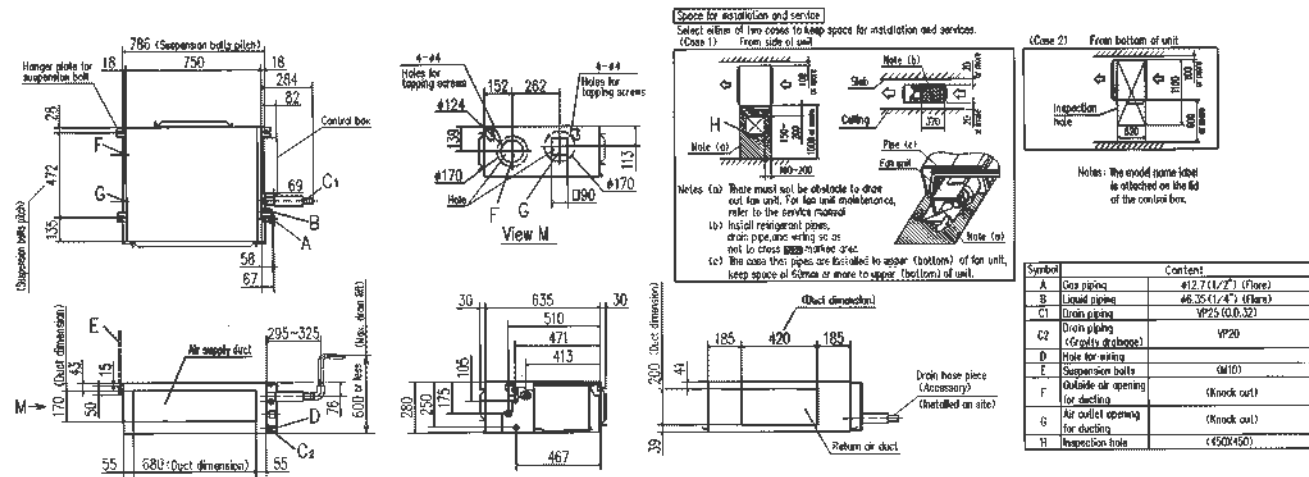
Item	Model	FDU224KXZE1	FDU280KXZE1
Nominal cooling capacity	kW	22.4	28.0
Nominal heating capacity	kW	25.0	31.5
Power source		1 Phase 220-240V, 50Hz	
Power consumption	Cooling	1.16-1.20	1.16-1.20
	Heating	1.16-1.20	1.16-1.20
Sound pressure level	dB(A)	P-Hi:52 Hi:50 Me:47 Lo:45	
Exterior dimensions H x 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		Liquid line:ø9.52(3/8")	Liquid line:ø9.52(3/8")
Refrigerant piping size	mm(in)	Gas line:ø19.05(3/4")	Gas line:ø22.22(7/8")

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

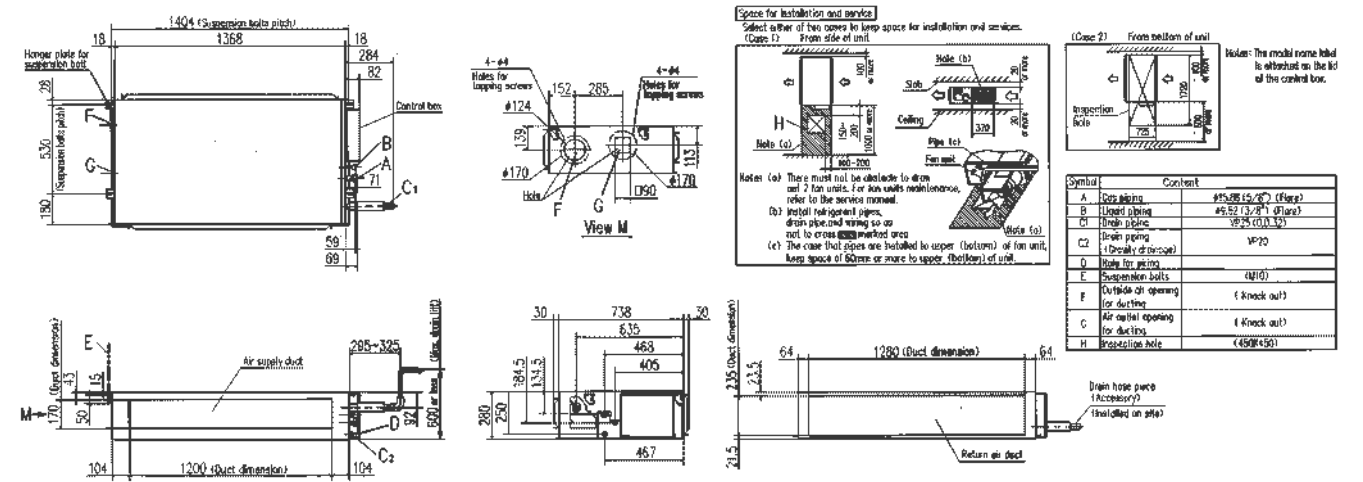
## Dimensions

All measurements in mm.

### FDU45KXE6F, 56KXE6F

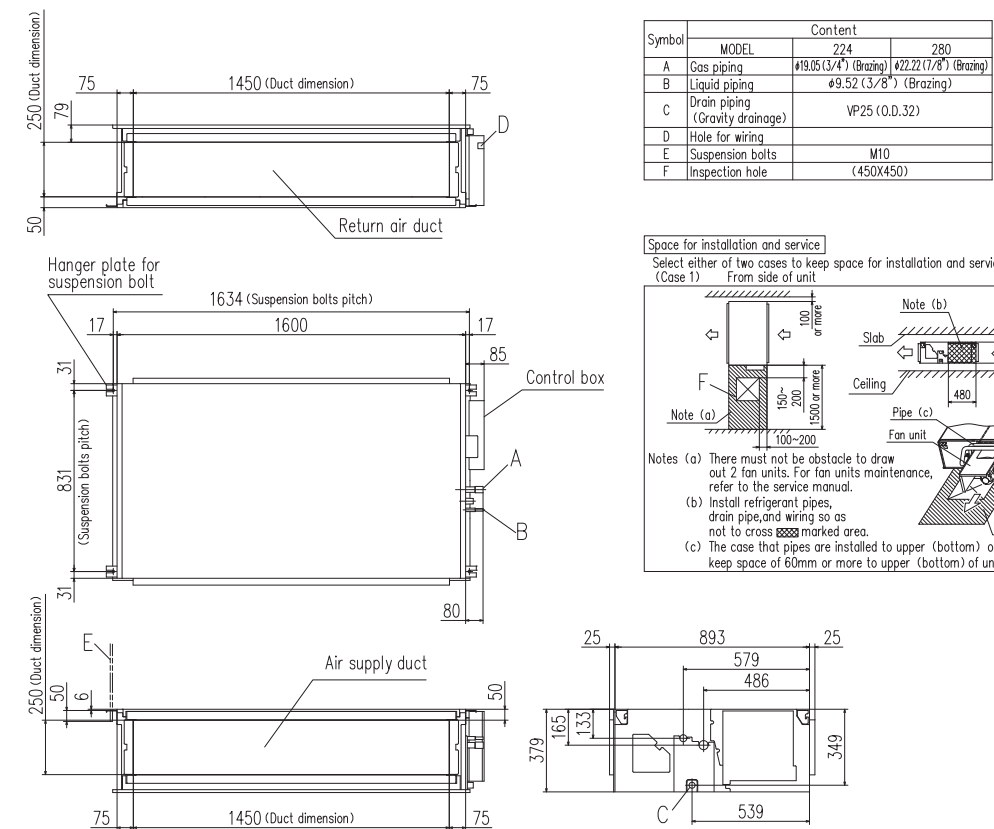
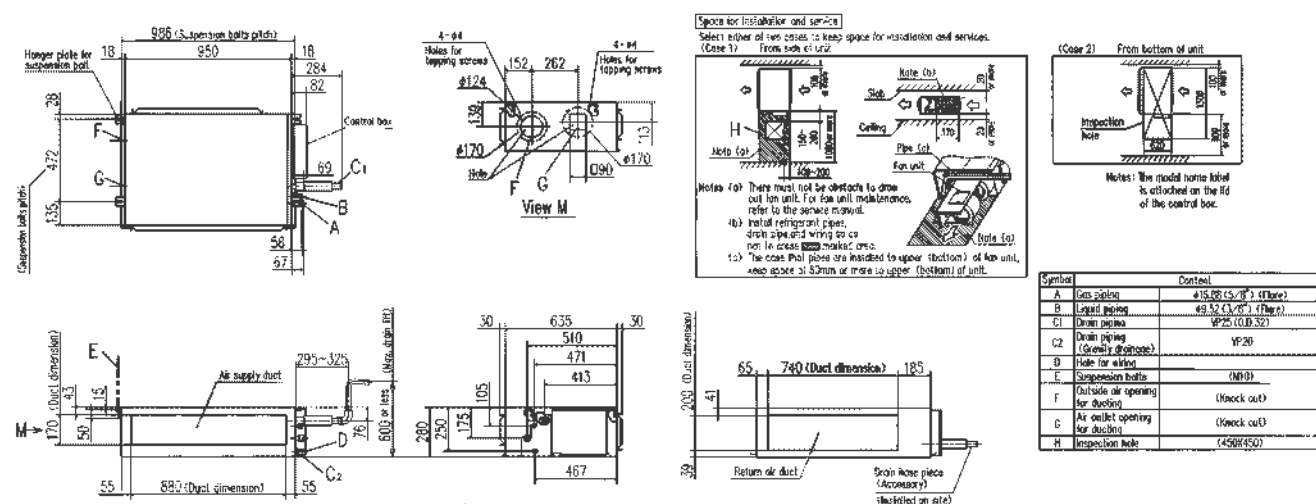


### FDU112KXE6F, 140KXE6F, 160KXE6F



### FDU224KXZE1, 280KXZE1

### FDU71KXE6F, 90KXE6F



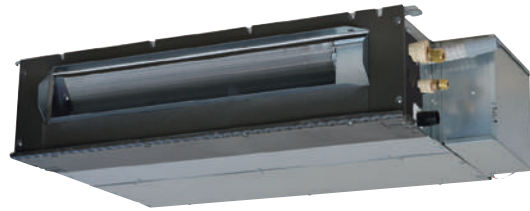




# Duct Connected (thin) -Low Static Pressure- FDUT

## 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

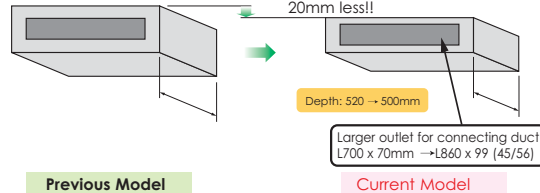
Wireless



RCN-KIT4-E2

## Compact design

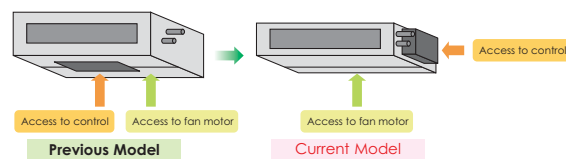
<FDUT15~56KXE6F-E>  
 Height: 220 → 200mm



Previous Model

Current Model

## Serviceability

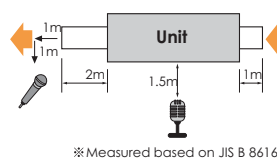


Previous Model

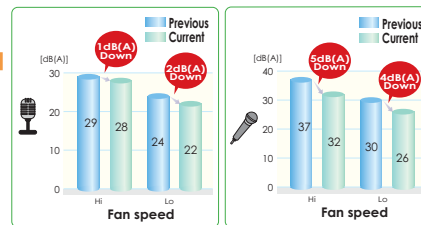
Current Model

## Lower noise

<FDUT28KXE6F-E>



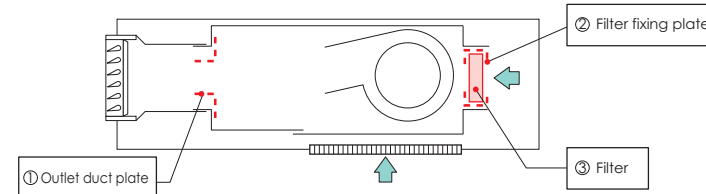
※ Measured based on JIS B 8616



## 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

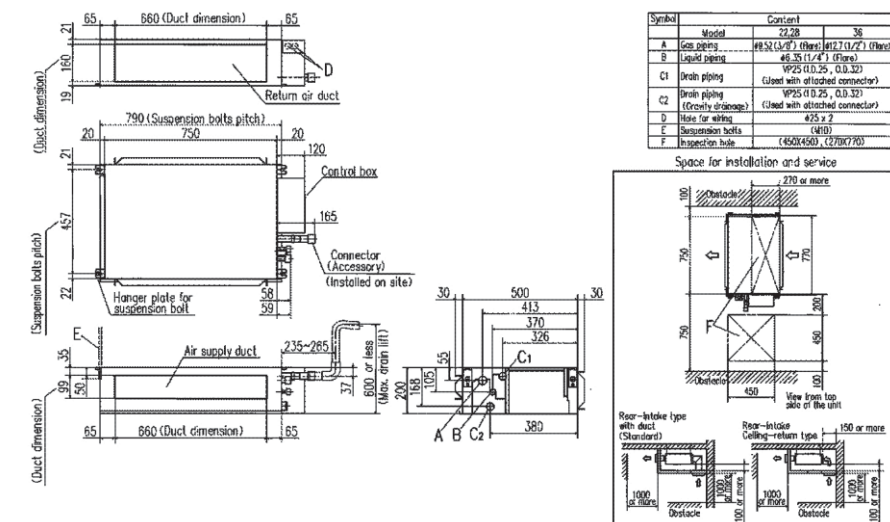
Item	Model	FDUT15KXE6F-E	FDUT22KXE6F-E	FDUT28KXE6F-E	FDUT36KXE6F-E	FDUT45KXE6F-E	FDUT56KXE6F-E	FDUT71KXE6F-E
Nominal cooling capacity	kW	1.5	2.2	2.8	3.6	4.5	5.6	7.1
Nominal heating capacity	kW	1.7	2.5	3.2	4.0	5.0	6.0	8.0
Power source		1 Phase 220-240V, 50Hz						
Sound power level	dB(A)	52			57	58	59	
Sound pressure level①	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 level②	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		Procure locally						
Remote control(option)		wired:RC-EX3, 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")

- The data are measured under the following conditions[ISO-T1]. Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB. External static pressure of indoor unit is 10Pa.
- The data of nominal cooling and heating capacity and sound pressure level are measured with 10Pa of external static pressure.
- 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.
- 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.

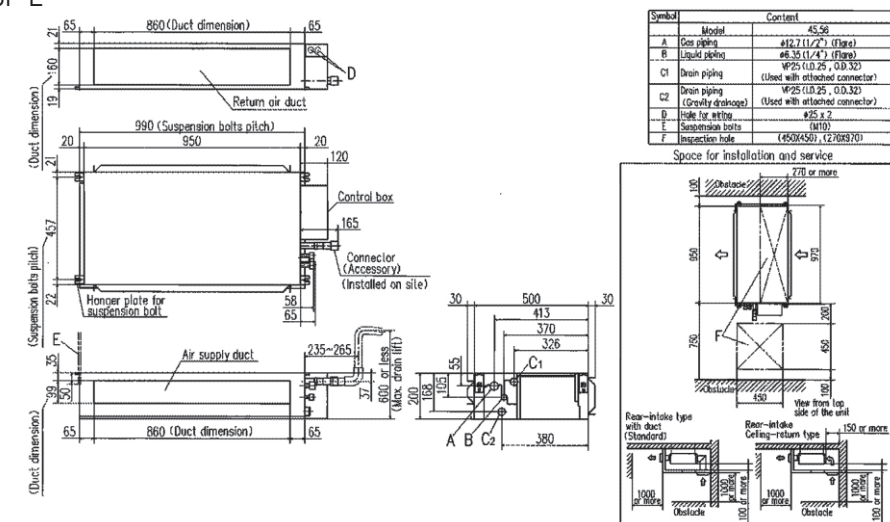
## Dimensions

All measurements in mm.

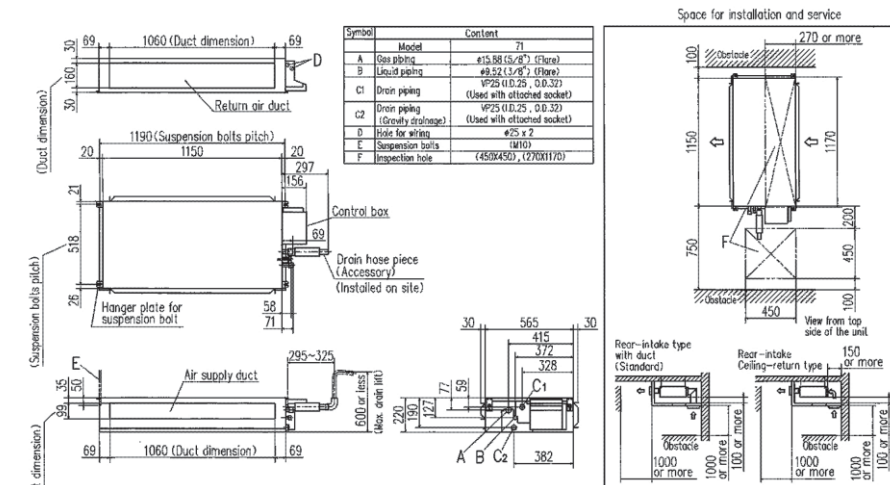
FDUT15KXE6F-E, 22KXE6F-E, 28KXE6F-E, 36KXE6F-E



FDUT45KXE6F-E, 56KXE6F-E



FDUT71KXE6F-E





# Duct Connected (Compact & Flexible) FDUH

**Model No.**  
 FDUH22KXE6F  
 FDUH28KXE6F  
 FDUH36KXE6F



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

## Remote control (option)

Wired



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

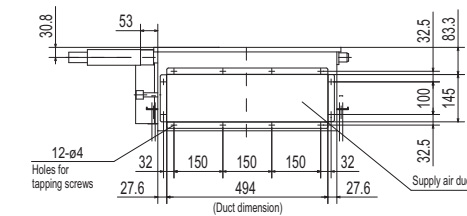
Wireless



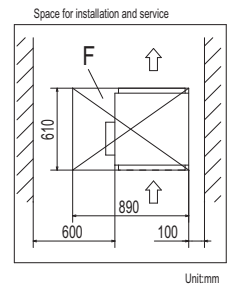
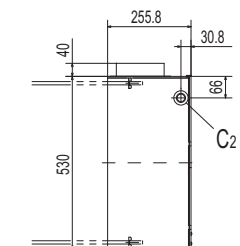
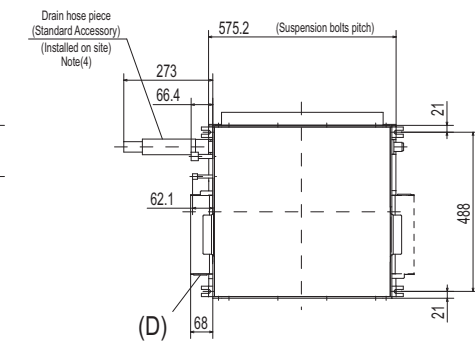
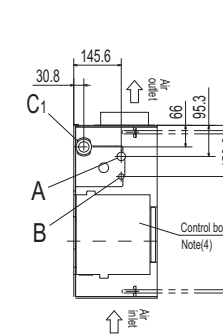
**RCN-KIT4-E2**

## Dimensions

All measurements in mm.

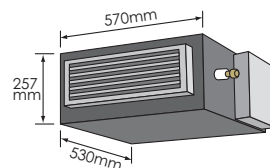


Symbol	Content
Model	FDUH22KXE6F, FDUH28KXE6F, FDUH36KXE6F
A	Gas piping $\phi 9.52$ (3/8") (Flare)
B	Liquid piping $\phi 6.35$ (1/4") (Flare)
C1, C2	Drain piping VP20 (I.D. 20, O.D. 26) Note (2)
D	Hole for wiring $\phi 30$
E	Suspension bolts (M10)
F	Inspection hole (635X890) Note (3)



## 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.

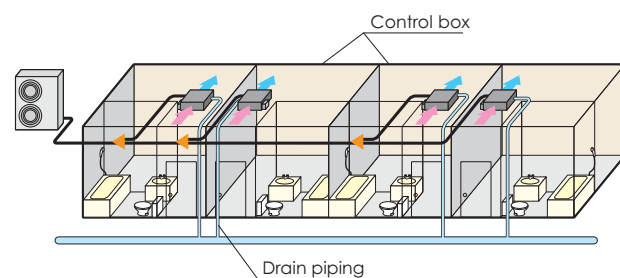


## Quiet operation

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

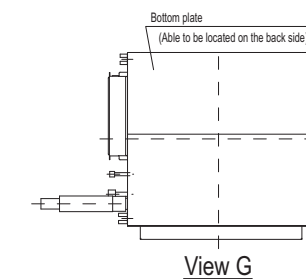
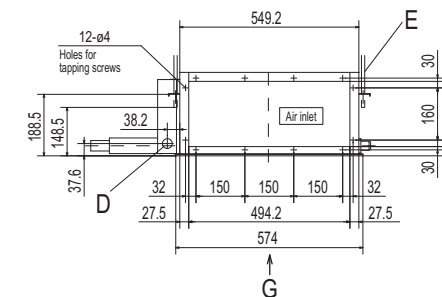
Considering specialized usage in hotel rooms, control buttons are limited only to minimum required functions such as ON/OFF, mode, temperature setting and fan speed. It is really simple and easy to use.

## Specifications

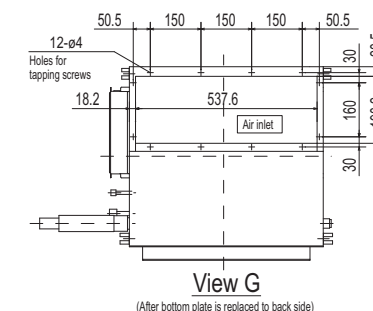
Item	Model	FDUH22KXE6F	FDUH28KXE6F	FDUH36KXE6F
Nominal cooling capacity	kW	2.2	2.8	3.6
Nominal heating capacity	kW	2.5	3.2	4.0
Power source		1 Phase 220-240V, 50Hz		
Power consumption	Cooling	0.05-0.07		
	Heating	0.05-0.07		
Sound power level	dB(A)	60		
Sound pressure level*	dB(A)	Hi: 33 Me: 30 Lo: 27		
Exterior dimensions HxWxD	mm	257x570x530		
Net weight	kg	22		
Air flow *	m <sup>3</sup> /min	Hi: 7 Me: 6.5 Lo: 6		
External static pressure	Pa	30		
Outside air intake		Possible from return duct		
Air filter		Procure locally		
Remote control(option)		wired:RC-EX3, RC-E5, RCH-E3 wireless:RCN-KIT4-E2		
Installation data	mm(in)	Liquid line: $\phi 6.35$ (1/4")		
Refrigerant piping size		Gas line: $\phi 9.52$ (3/8")		

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

\* Powerful-Hi can be selected. Sound pressure level: FDUH22/28/36 39dB(A). Air flow: FDUH22/28/36 8.5m<sup>3</sup>/min.



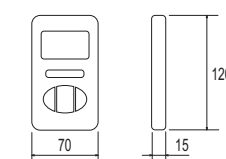
### In case of Bottom air intake



### 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 C1 or C2)
- (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.

### Simple remote control



## Wall Mounted FDK

## Model No.

FDK15KXE1  
FDK22KXE1  
FDK28KXE1  
FDK36KXE1  
FDK45KXE1  
FDK56KXE1  
FDK71KXE1  
FDK90KXE1



FDK15~56



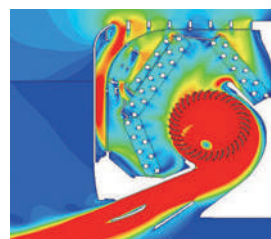
FDK71,90

**Elegant Timeless Design**

The new 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. (15-56KXE1)



## Jet Technology

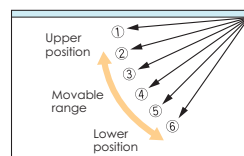


Fast  Slow  
Colors in the figure show the air speed

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.

## Flap control system

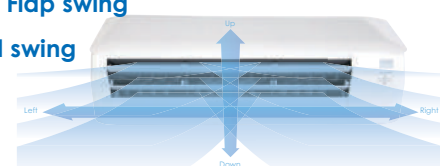
Selection of flap position is possible. A flap can be set at different angles.



\*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



## Specifications

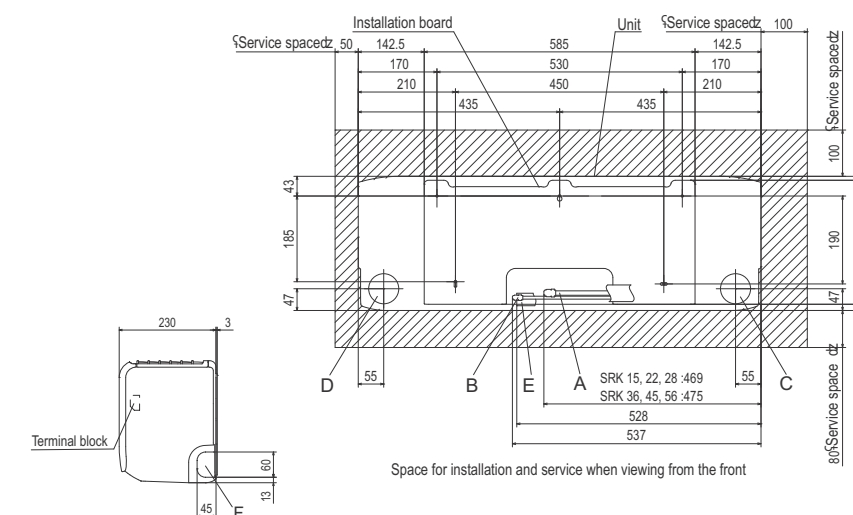
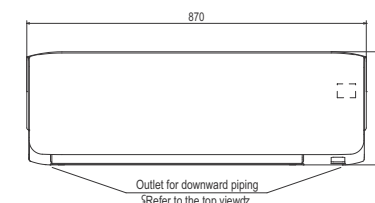
Item	Model	FDK15KXZE1	FDK22KXZE1	FDK28KXZE1	FDK36KXZE1	FDK45KXZE1	FDK56KXZE1	FDK71KXZE1	FDK90KXZE1
Nominal cooling capacity	kW	1.5	2.2	2.8	3.6	4.5	5.6	7.1	9.0
Nominal heating capacity	kW	1.7	2.5	3.2	4.0	5.0	6.3	8.0	10.0
Power source		1 Phase 220-240V, 50Hz							
Power consumption	Cooling	0.02-0.02			0.03-0.03			0.04-0.04	0.05-0.05
	Heating	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	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	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 Heating	m <sup>3</sup> /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:22 Hi:19 Me:16 Lo:14	P-Hi:23 Hi:21 Me:19 Lo:16
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 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.  
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

## Dimensions

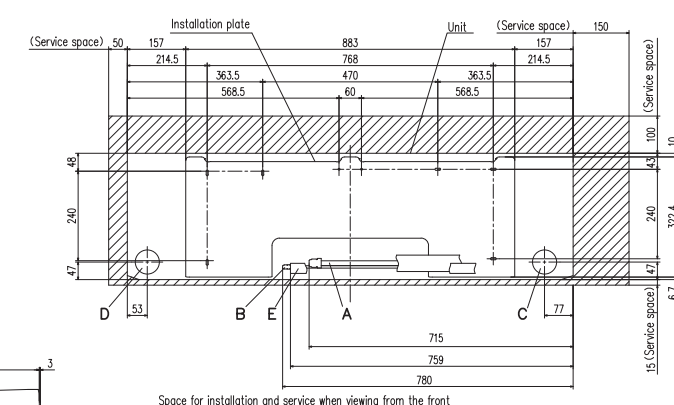
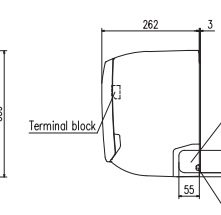
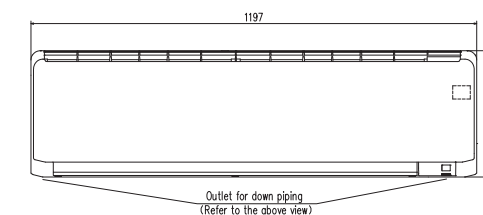
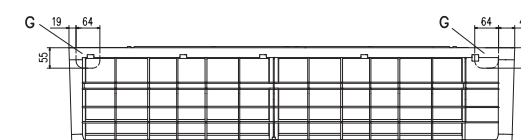
All measurements in mm.

FDK15KXE1, 22KXE1, 28KXE1, 36KXE1, 45KXE1, 56KXE1



Symbol	Content
A	Gas piping SRK15, 22, 28 $\phi$ 9.52 $\frac{3}{8}$ " $\phi$ SRFlare2z
B	Liquid piping SRK36, 45, 56 $\phi$ 12.12 $\frac{1}{2}$ " $\phi$ SRFlare2z
C	Hole on wall for right rear piping $\phi$ 6.652 $\frac{1}{4}$ " $\phi$ SRFlare2z
D	Hole on wall for left rear piping $\phi$ 6.652 $\frac{1}{4}$ "
E	Drain hose VP16
F	Outlet for pinionion both sidez

FDK71KXZE1, 90KXZE1



Symbol	Content
A	Gas piping #15.88 (5/8") (Flare)
B	Liquid piping #6.35 (1/4") (Flare)
C	Hole on wall for right rear piping (485)
D	Hole on wall for left rear piping (485)
E	Drain hose
F	Outlet for wiring (on both side)
F	Outlet for wiring (on both side)



## Ceiling Suspended FDE

## Model No.

FDE36KXZE1  
FDE45KXZE1  
FDE56KXZE1  
FDE71KXZE1  
FDE112KXZE1  
FDE140KXZE1



**Remote control (option)**

Wired



RC-EX3 RC-E5 RCH-E3

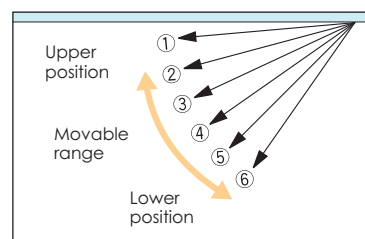
## Wireless



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

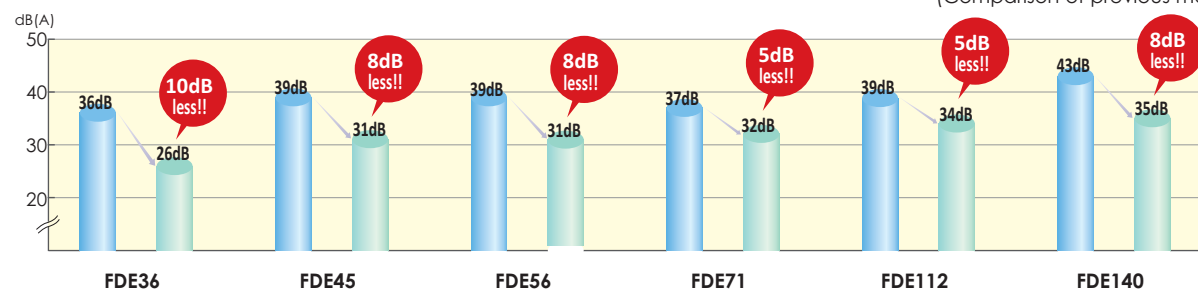
Thanks to decreasing the numbers of fan motor from two to one, reduction of weight was achieved.

	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)



## Specifications

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	0.05-0.05			0.07-0.07	0.10-0.10	0.13-0.13
	Heating	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) Hi:38 Me:31 Lo:26	Hi:38 Me:36 Lo:31	Hi:38 Me:36 Lo:31	Hi:39 Me:37 Lo:32	Hi:42 Me:38 Lo:34	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 Hi:10 Me:7 Lo:5.5	Hi:10 Me:9 Lo:7		Hi:15 Me:13 Lo:10	Hi:25 Me:21 Lo:16.5	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-EX3, RC-E5, RCH-E3    wireless:RCN-E-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")		

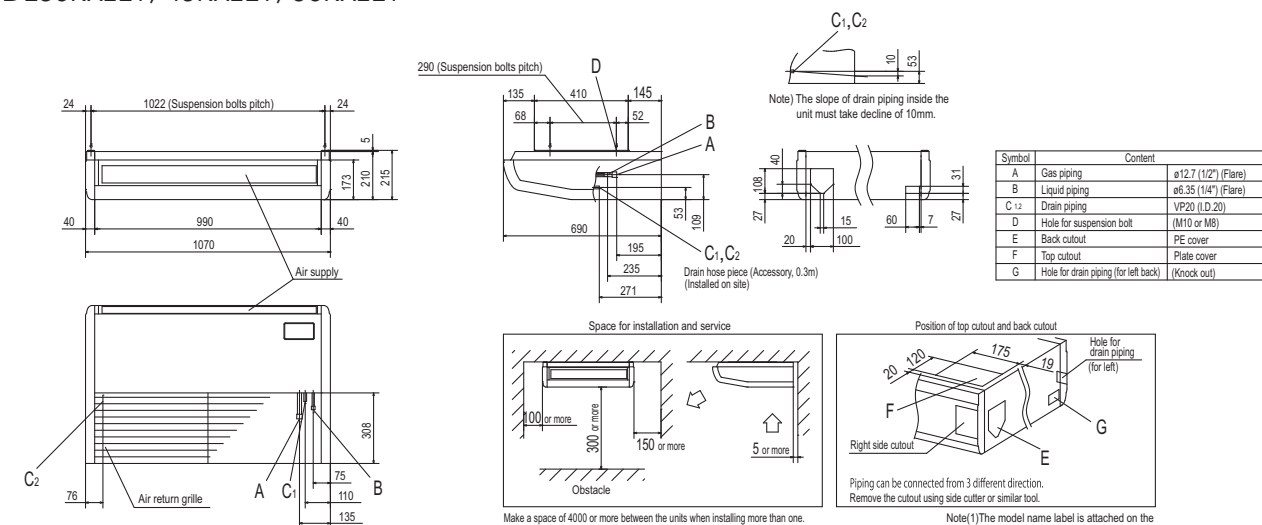
1. The data are measured under the following conditions (ISO-T1). Cooling: indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.  
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

※ Powerful-Hi can be selected. Sound pressure level: FDE36/45/56 46dB(A), FDE71 47dB(A), FDE112 45dB(A), FDE140 48dB(A). Air flow :FDE36/45/56 13m<sup>3</sup>/min, FDE71 20m<sup>3</sup>/min, FDE112 28m<sup>3</sup>/min, FDE140 32m<sup>3</sup>/min.

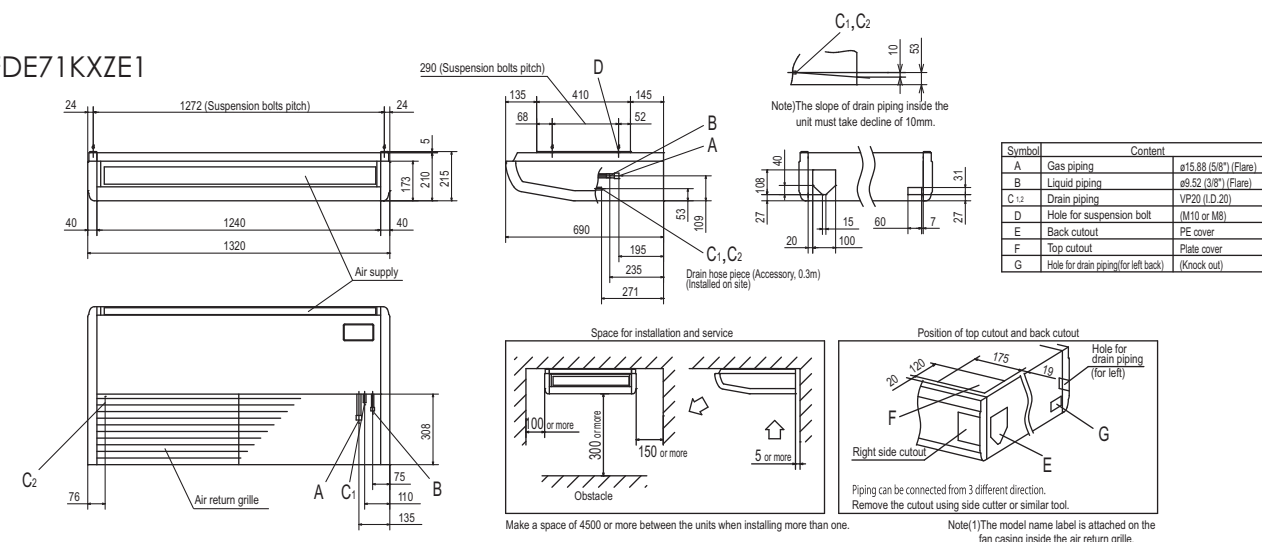
## Dimensions

All measurements in mm.

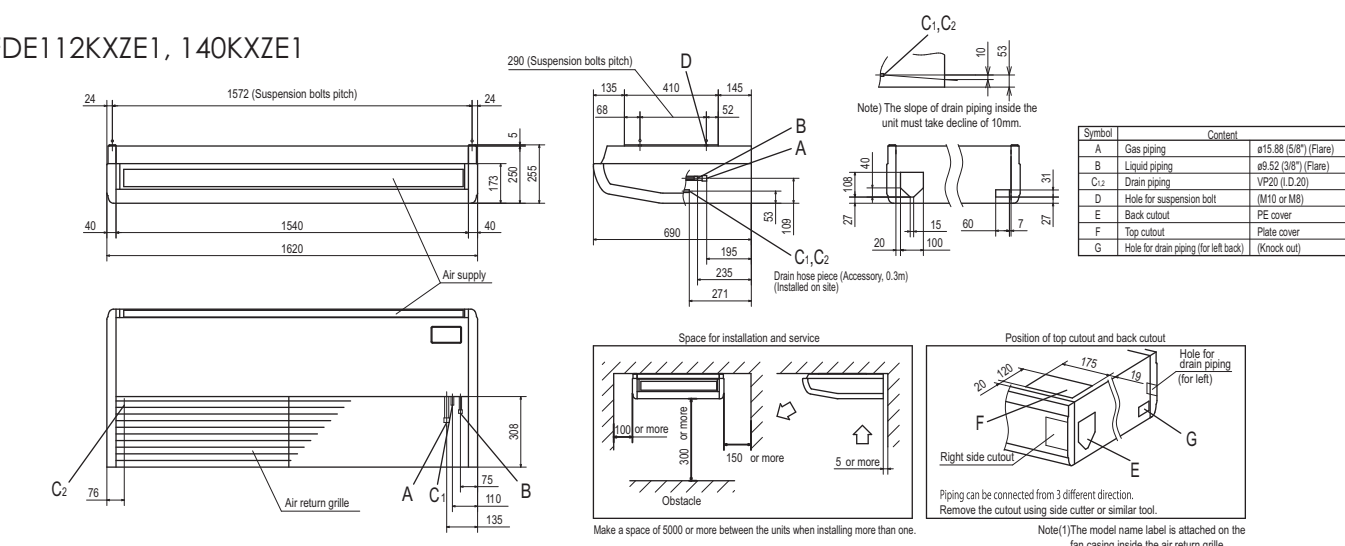
FDE36KXZE1, 45KXZE1, 56KXZE1



FDE71KXZE1



FDE112KXZE1, 140KXZE1



# Floor Standing -2way- FDFW

## Model No.

FDFW28KXE6F  
 FDFW45KXE6F  
 FDFW56KXE6F



## Auto air outlet selection



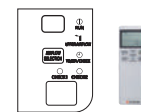
## Remote control (option)

Wired



RC-EX3A RC-E5 RCH-E3

Wireless



RCN-FW-E2

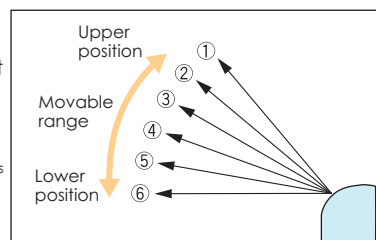
## Sophisticated Design

With classy semi flat front panel in chic 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.

## 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.

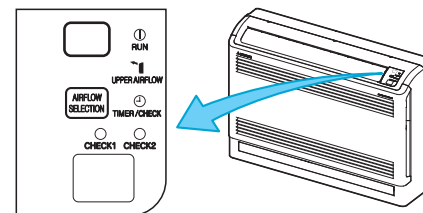


## Quiet Operation

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 mode is 30dB(A) only.

## Convenient to use operation

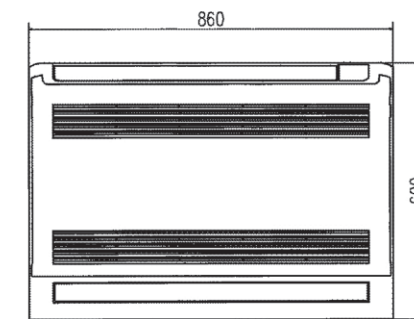
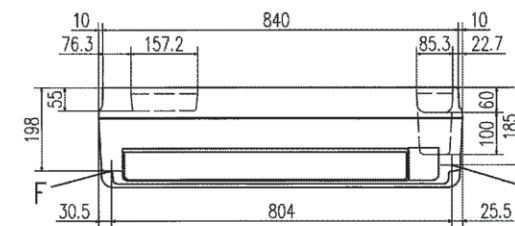
Simultaneous lower and upper air outlets or upper outlet can be selected by air flow direction button. Further control can be arranged by a remote control.



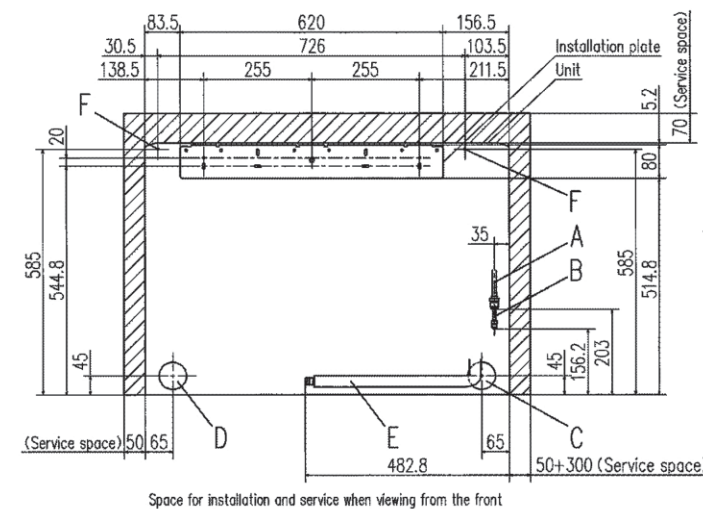
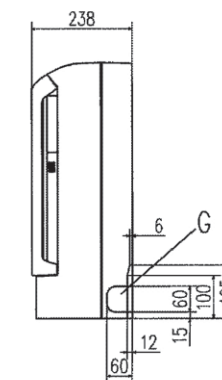
(In case of use of wireless remote control)

## Dimensions

All measurements in mm.



Outlet for down piping  
(Refer to the above view)



Symbol	Model	Content
	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 (LD16)
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.

## 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	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)	m <sup>3</sup> /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-EX3, RC-E5, RCH-E3 wireless:RCN-FW-E2		
Installation data Refrigerant piping size	mm(in)	Liquid line:φ6.35(1/4") Gas line:φ9.52(3/8")		Liquid line:φ6.35(1/4") Gas line:φ12.7(1/2")

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

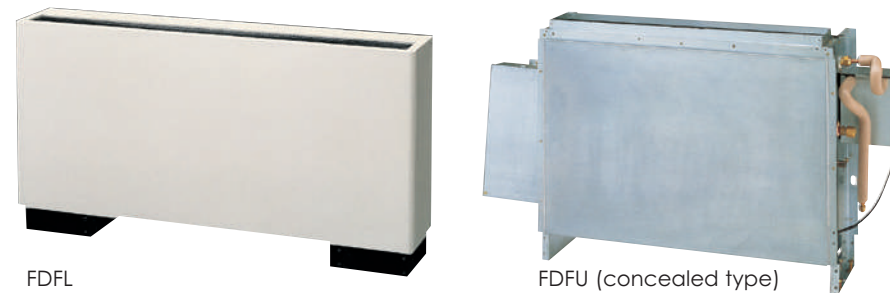


# Floor Standing (with casing) FDFL

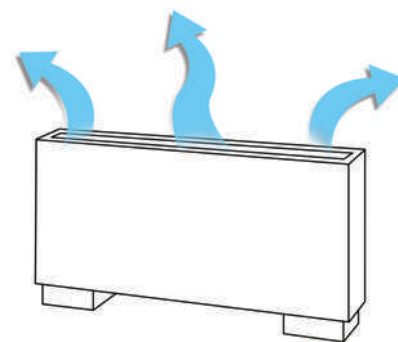
# Floor Standing (without casing) FDFU

**Model No.**  
FDFL71KXE6F

FDFU28KXE6F  
FDFU45KXE6F  
FDFU56KXE6F  
FDFU71KXE6F



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	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)	m <sup>3</sup> /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-EX3, RC-E5, RCH-E3 wireless:RCN-KIT4-E2				
Installation data	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 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.  
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.

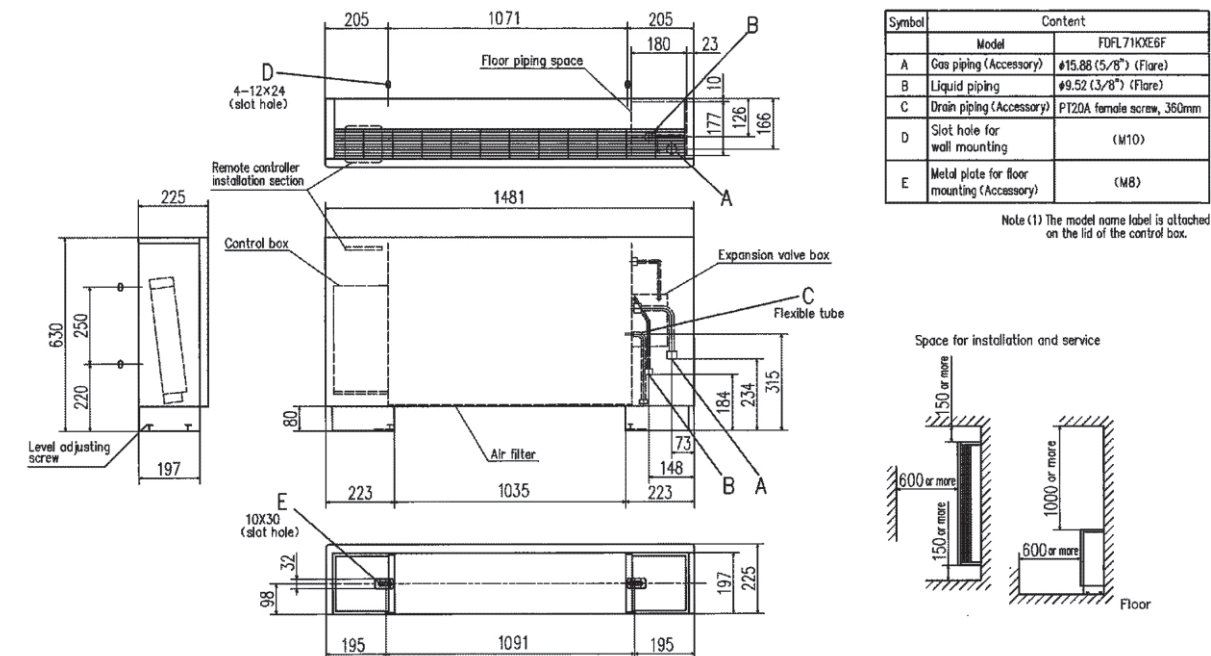
### Remote control (option)



## Dimensions

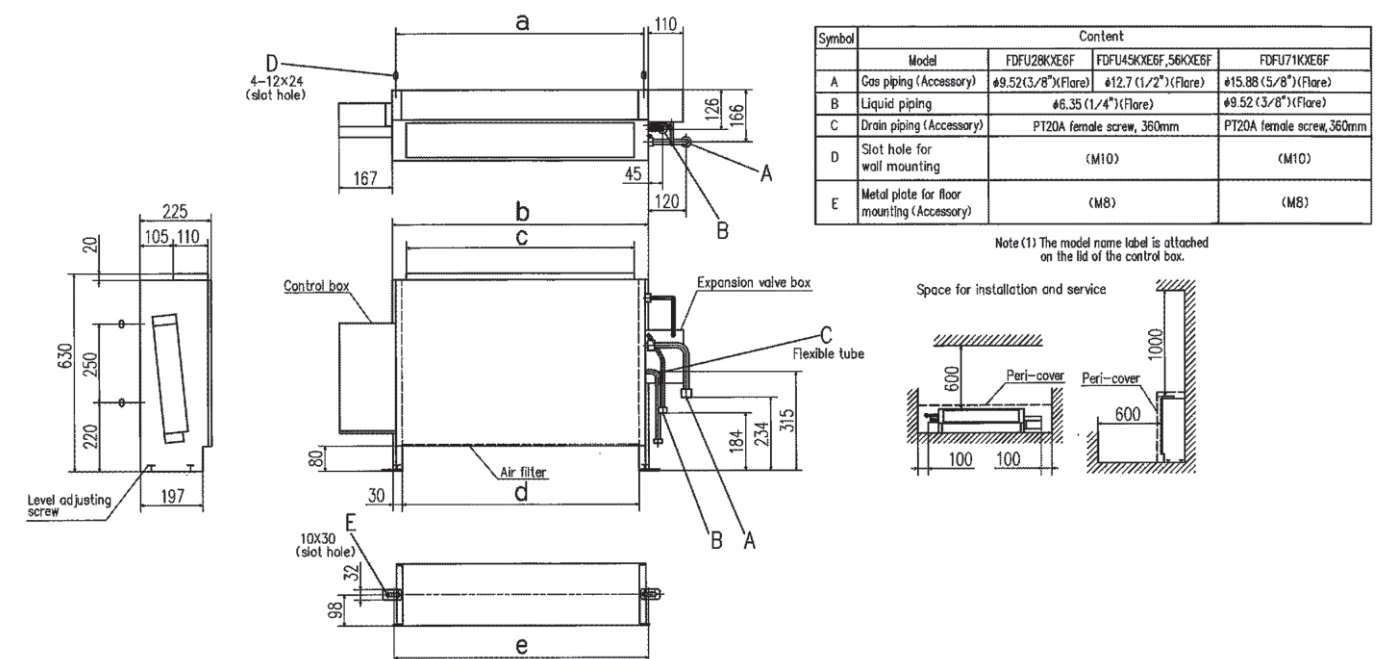
All measurements in mm.

FDFL



Symbol	Model	Content
	FDL71KXE6F	
A	Gas piping (Accessory)	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (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.



Symbol	Model	Content
	FDFU28KXE6F, FDFU45KXE6F, FDFU56KXE6F, FDFU71KXE6F	
A	Gas piping (Accessory)	ø9.52(3/8") (Flare) ø12.7 (1/2") (Flare) ø15.88 (5/8") (Flare)
B	Liquid piping	ø6.35 (1/4") (Flare) ø9.52 (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.

### Dimension Table

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

Unit:mm

# Outdoor Air Processing unit FDU-F

## Model No.

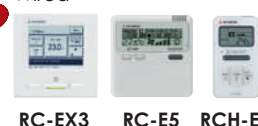
FDU650FKXZE1  
 FDU1100FKXZE1  
 FDU1800FKXZE1  
 FDU2400FKXZE1



## Remote control (option)

Wired

NEW



RC-EX3 RC-E5 RCH-E3

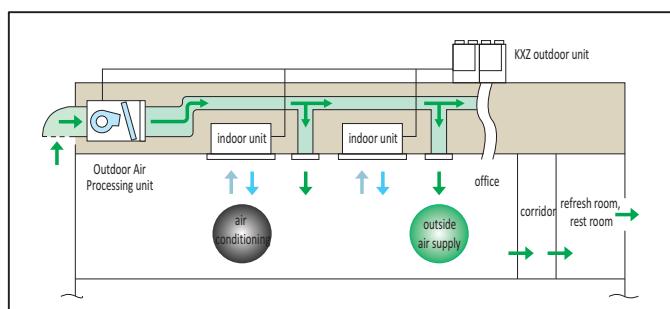
Wireless



RCN-KIT4-E2

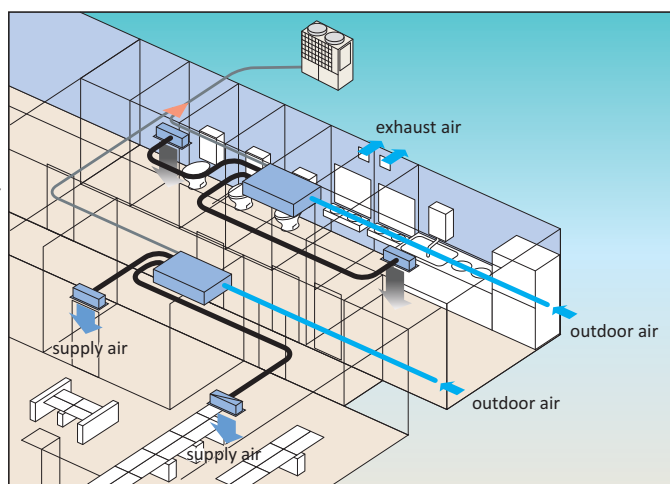
## Air conditioning and intake of outdoor air are in the same system

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



## 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.

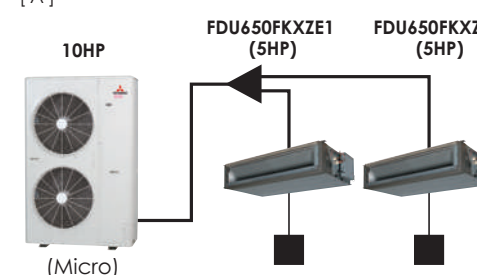
## Connectivity with Outdoor units

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

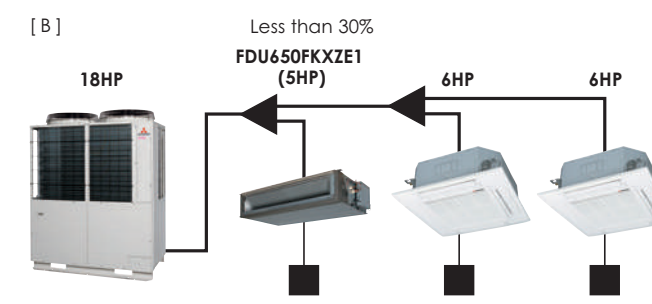
## Combination with Outdoor units

	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 ]



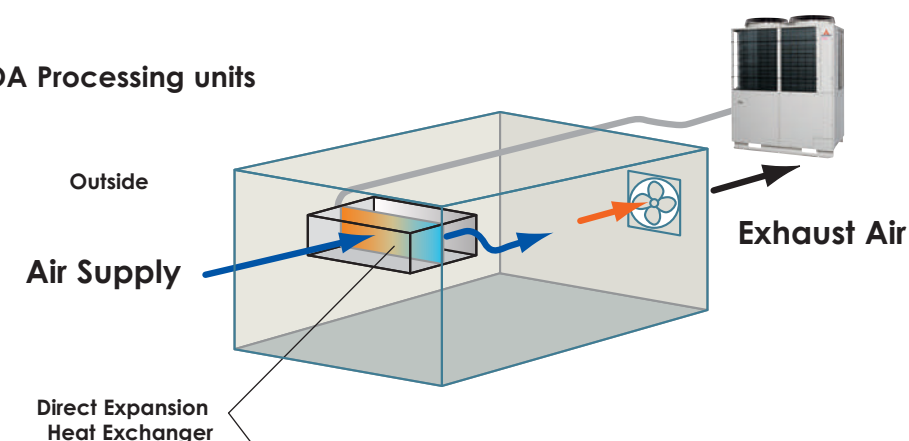
[ B ]



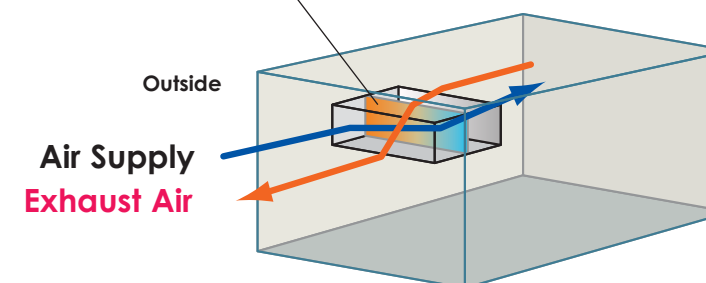
## Concept (Difference between FDU-F and SAF)

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.

## FDU-F OA Processing units



## SAF





## Specifications

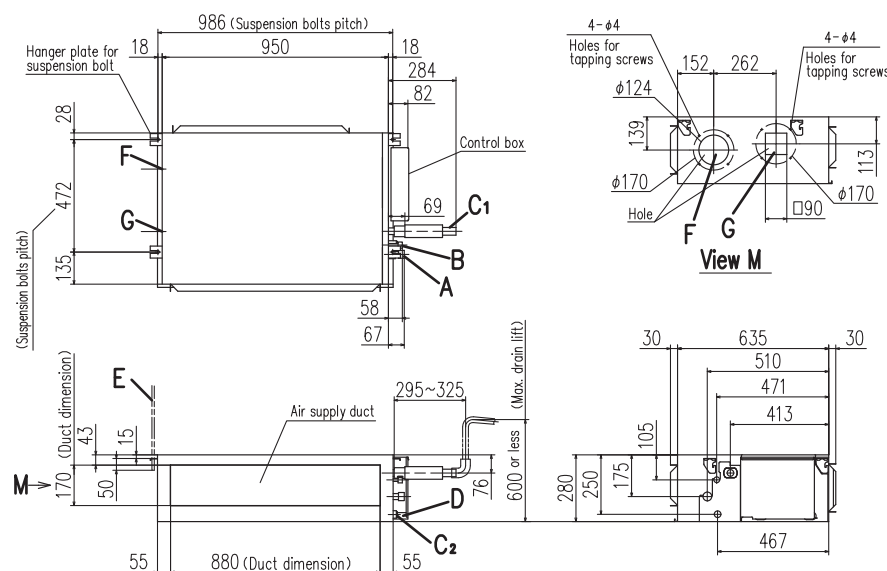
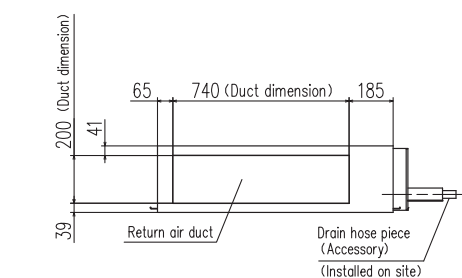
Item		Model	FDU650FKXE1	FDU1100FKXE1	FDU1800FKXE1	FDU2400FKXE1
Nominal cooling capacity		kW	9.0	14.0	22.4	28.0
Nominal heating capacity		kW	6.5	10.5	16.0	21.5
Power source			1 Phase 220-240V, 50Hz			
Power consumption	Cooling	kW	0.24-0.25	0.35-0.36	1.16-1.20	1.16-1.20
	Heating		0.24-0.25	0.35-0.36	1.16-1.20	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-EX3, RC-E5, RCH-E3 wireless:RCN-KIT4-E2			
Installation data		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")	
Refrigerating piping size					Liquid line:ø9.52(3/8") Gas line:ø22.22(7/8")	

1. The data are measured at 33°CDB 28°CWB (68%RH) during cooling and 0°CDB-2.9°CWB (50%RH) during heating (no frost).
2. Temperature range of outdoor air must be 20~40°CDB (32°CWB) during cooling and 0~24°CDB 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-EX3 and RC-E5 only)

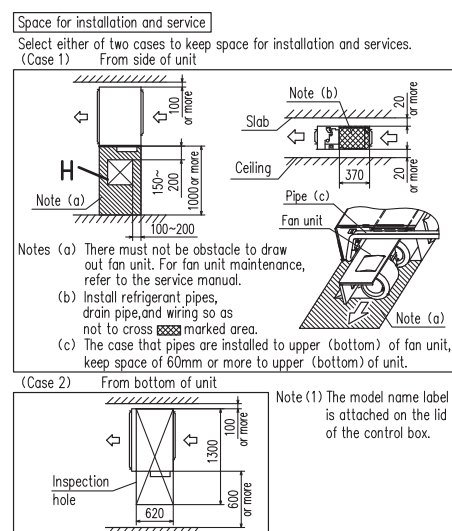
## Dimensions

All measurements in mm.

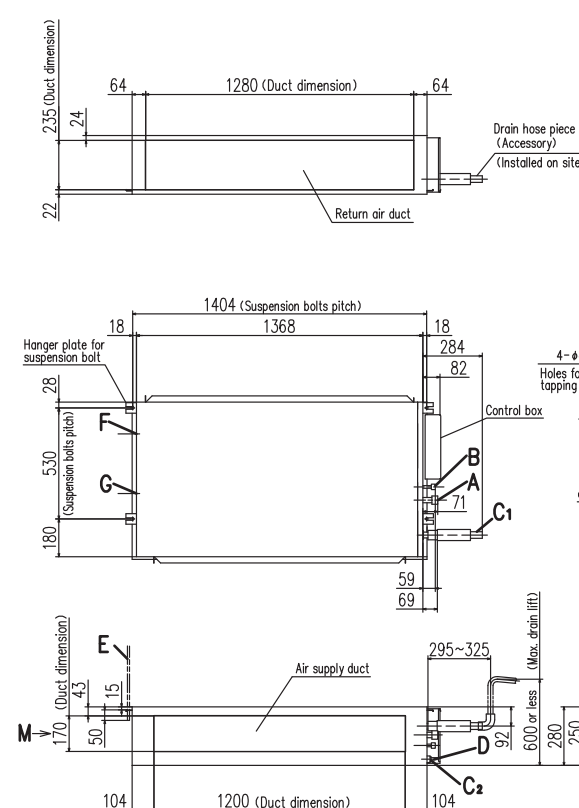
## FDU650FKXZE1



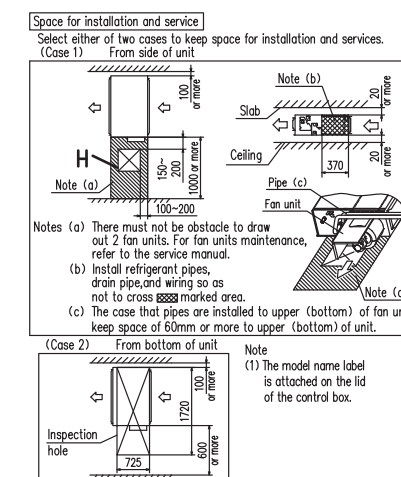
Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C1	Drain piping	VP25(O.D.32)
C2	Drain piping(Gravity drainage)	V20(O.D.26)
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection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



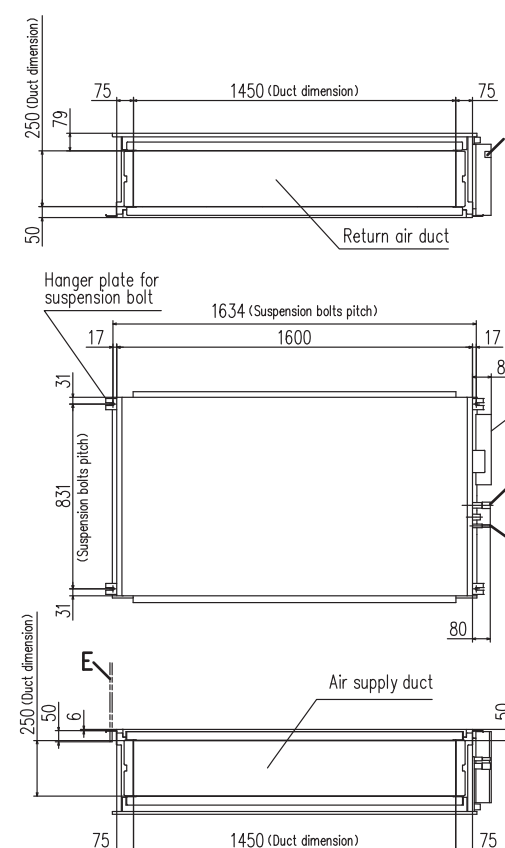
## FDU1100FKXZE1



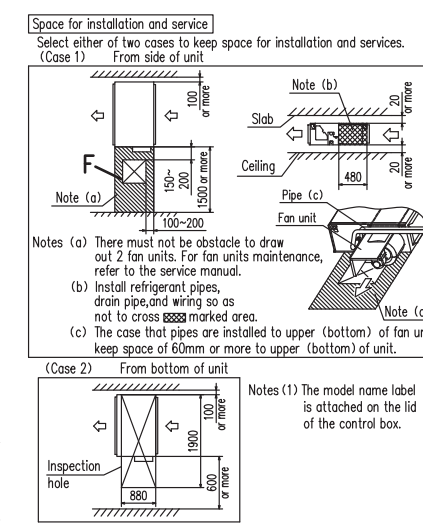
Symbol	Content	
A	Gas piping	ø15.88 (5/8") (Flare)
B	Liquid piping	ø9.52 (3/8") (Flare)
C1	Drain piping	VP25(O.D.32)
C2	Drain piping(Gravity drainage)	V20(O.D.26)
D	Hole for wiring	
E	Suspension bolts	M10
F	Outside air opening for ducting	(Knock out)
G	Air outlet opening for ducting	(Knock out)
H	Inspection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

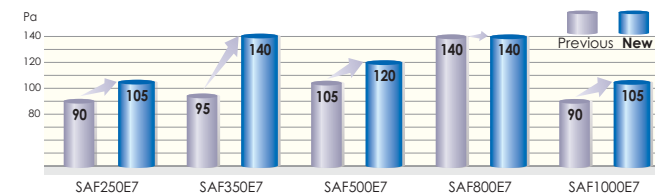


## Energy Performance of Building Directive - EPBD

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.

### Increased external static pressure at UHI air flow



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.



Switch box (option)

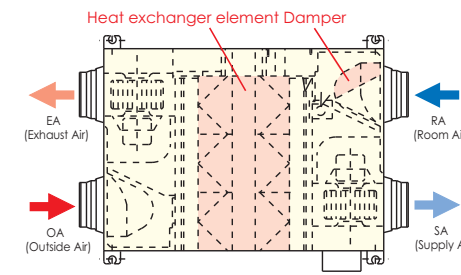


Remote control  
 The following functions are newly available.  
☐ ON/OFF Timer – The hour and minute of timer on/off can be set.  
☐ Filter Sign – Announces the due time for cleaning the air filter.

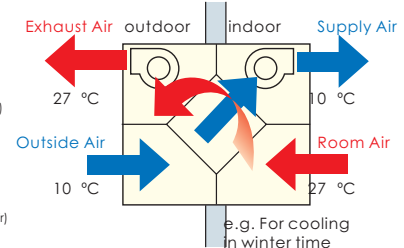
## Specifications

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	%	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	m³/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									

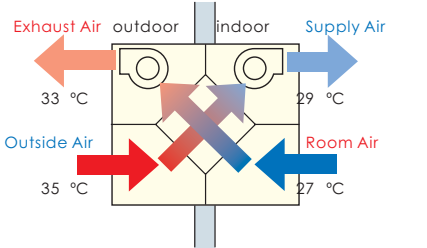
Structure (SAF800E7)



Principle of operation (simple ventilation)  
**FREE COOLING**



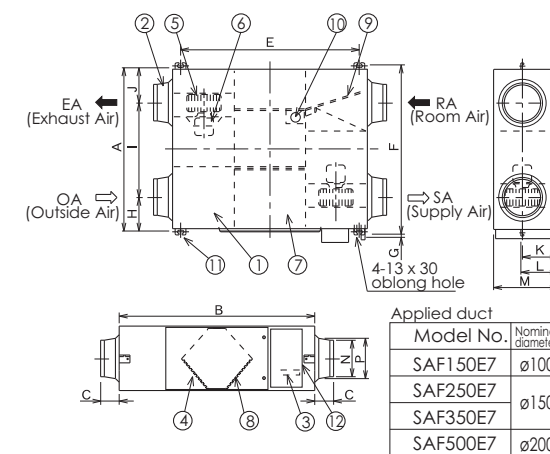
Principle of operation (heat exchanging)  
**ENERGY RECOVERY**



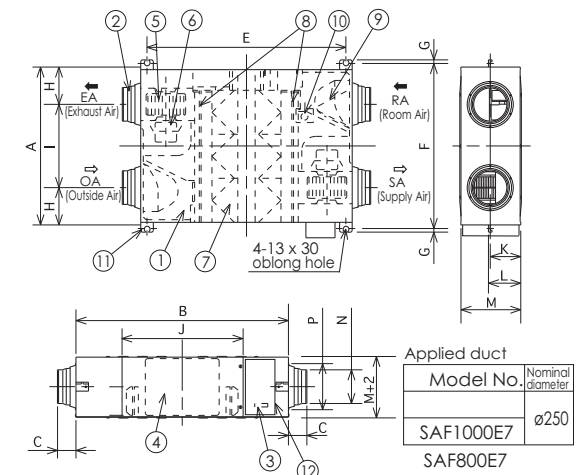
## Dimensions

All measurements in mm.

SAF150E7, SAF250E7, SAF350E7, SAF500E7



SAF800E7, SAF1000E7



### Dimension table

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	135	159	270	ø98	ø110	ø164	ø164
SAF350E7	804	1050	70	978	860	112	580	112	159	182	317	ø194	ø210	ø210
SAF500E7	904	1090	1018	960	132	640	132	159	182	317	ø194	ø210	ø210	ø210

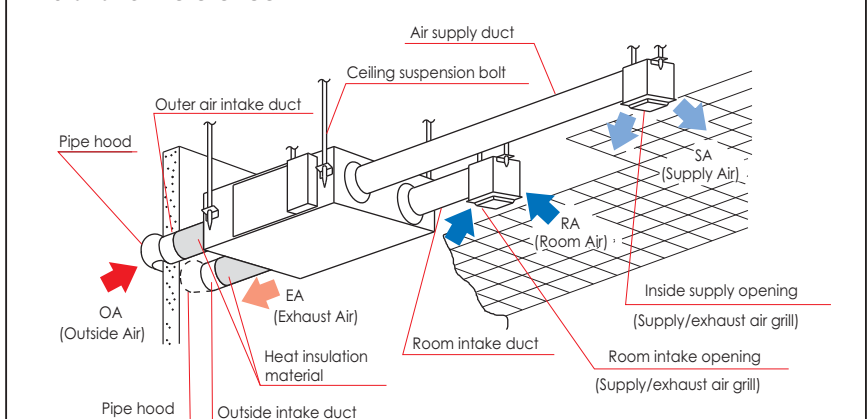
### Dimension table

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

NO.	Name	Q'ty
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	1
	SAF250E7	1
	SAF350E7	2
	SAF500E7	2
	SAF800E7	3
	SAF1000E7	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

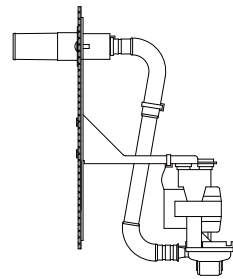
## Model No.

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

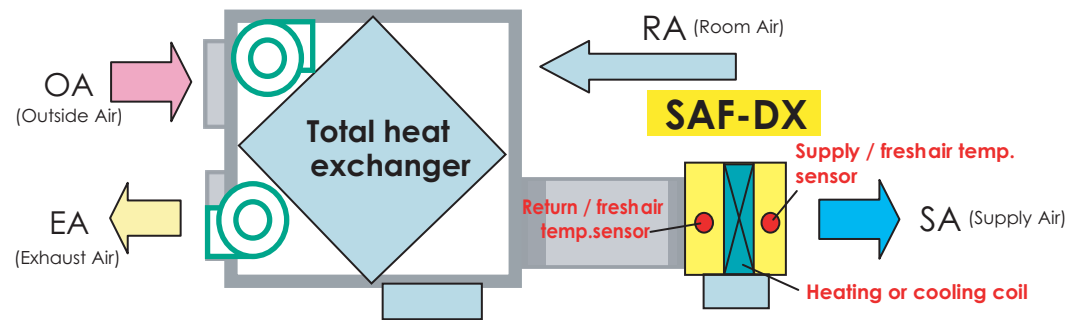
RCH-E3

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	7.2-7.2				
	Heating	7.2-7.2				
Running current	Cooling	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)	m³/h	250	350	500	800	1000
Internal resistance	Pa	38				
Remote control(option)		wired: RC-E5, RCH-E3 wireless: RCN-KIT4-E2				
Installation data		Liquid line:ø6.35(1/4")		Liquid line:ø6.35(1/4")		Liquid line:ø9.52(3/8")
Refrigerant piping size	mm(in)	Gas line:ø9.52(3/8")		Gas line:ø12.7(1/2")		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	ISO-T1
Cooling*1	27°C	19°C	35°C	24°C	
Heating*2	20°C	7°C	6°C	6°C	

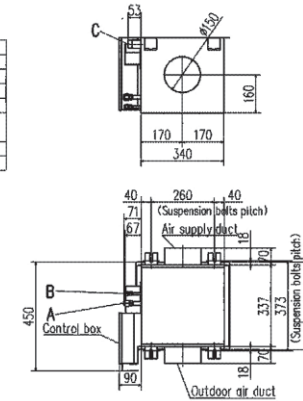
(2) This air-conditioner is manufactured and tested in conformity with ISO-T1 "UNITARY AIR-CONDITIONERS".

## Dimensions

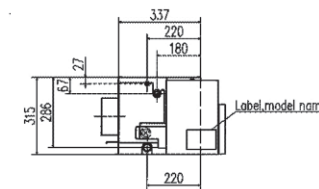
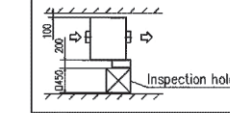
All measurements in mm.

### SAF-DX250E6,350E6

Symbol	Content
A	Gas piping ø9.52(3/8") (Flare)
B	Liquid piping ø6.35(1/4") (Flare)
C	Drain piping R1
D	Wiring hole for power source line
E	Wiring hole for total enthalpy heat exchanger
F	Hole for communication line
G	Suspension bolts M10

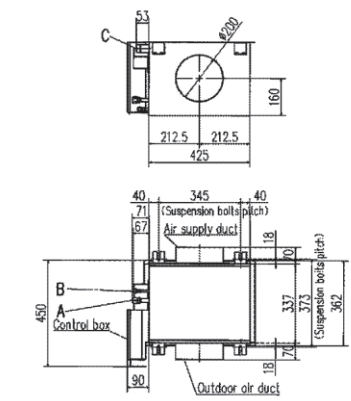


#### Space for installation and service

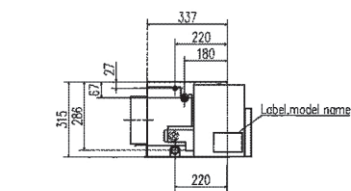
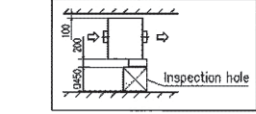


### SAF-DX500E6

Symbol	Content
A	Gas piping ø12.7(1/2") (Flare)
B	Liquid piping ø6.35(1/4") (Flare)
C	Drain piping R1
D	Wiring hole for power source line
E	Wiring hole for total enthalpy heat exchanger
F	Hole for communication line
G	Suspension bolts M10

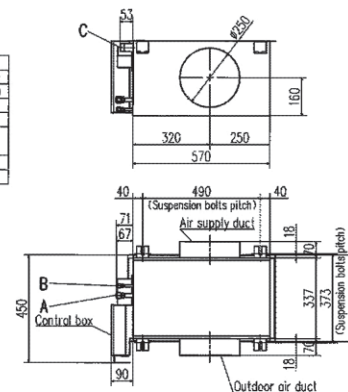


#### Space for installation and service

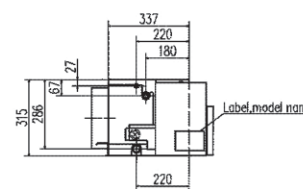
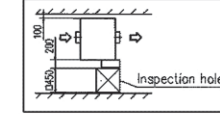


### SAF-DX800E6

Symbol	Content
A	Gas piping ø12.7(1/2") (Flare)
B	Liquid piping ø9.52(3/8") (Flare)
C	Drain piping R1
D	Wiring hole for power source line
E	Wiring hole for total enthalpy heat exchanger
F	Hole for communication line
G	Suspension bolts M10

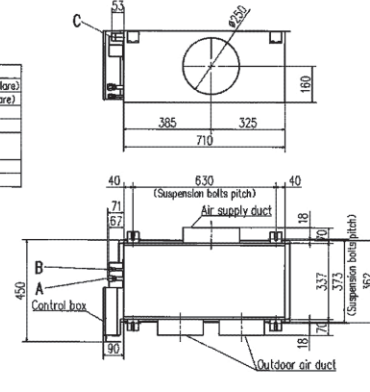


#### Space for installation and service

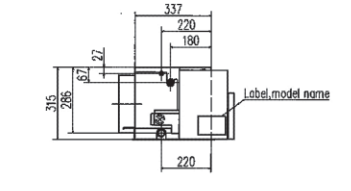
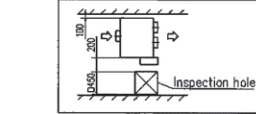


### SAF-DX1000E6

Symbol	Content
A	Gas piping ø15.88(5/8") (Flare)
B	Liquid piping ø9.52(3/8") (Flare)
C	Drain piping R1
D	Wiring hole for power source line
E	Wiring hole for total enthalpy heat exchanger
F	Hole for communication line
G	Suspension bolts M10

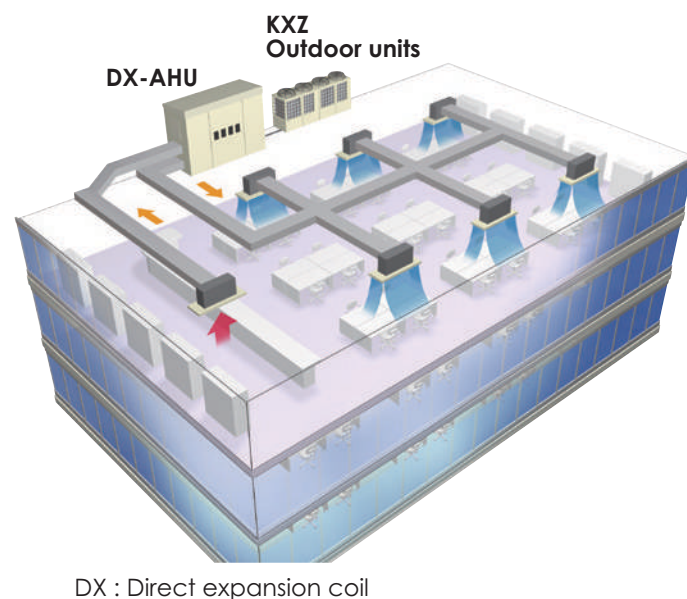
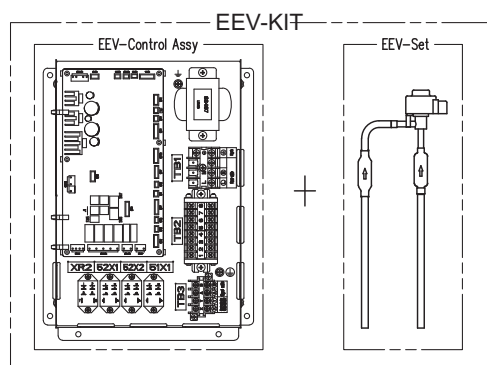


#### Space for installation and service



## 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 / KXE6 system.  
(AHU : Air Handling Unit, FCU : Fan Coil Unit)
- EEV-KIT is composed of one EEV-Control ASSY and one EEV-Set.



## 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

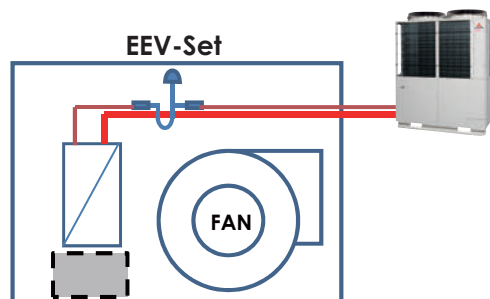
- Single refrigeration system EEVKIT6-E-C... Possible with multiple
- Multiple refrigeration system EEVKIT6-E-M (1) + EEVKIT6-E-C ... Possible with multiple (Max32)
- EEVKIT6-E-C is common for both single and multiple refrigeration systems

## 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.

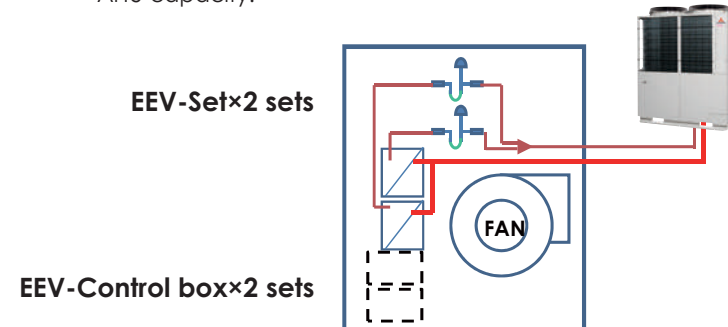
### System A

- 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), 48HP (for KXE6) AHU capacity.



## Multiple refrigerant system

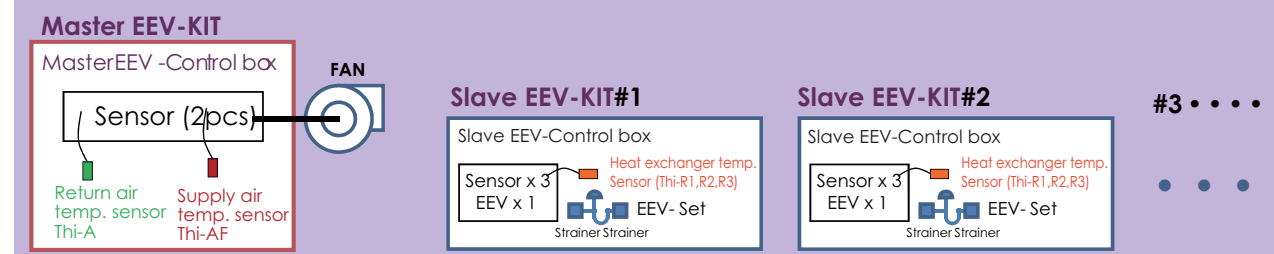
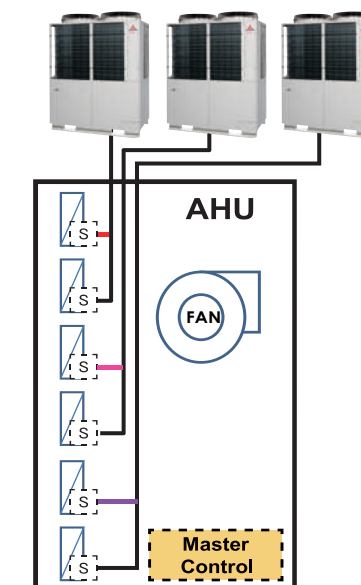
- Multiple refrigeration system is an AHU system with
- 1) Multiple independent refrigerant circuits
  - 2) One master control to control the whole system.

### Advantage

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

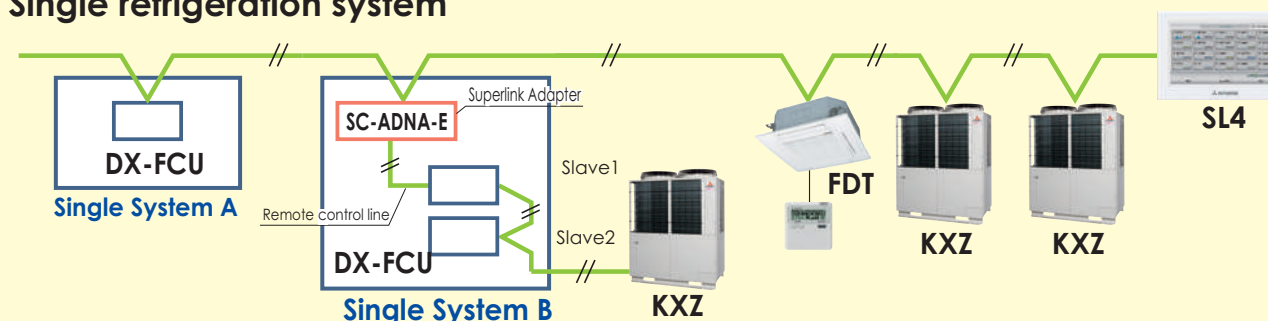
### Additional parts over a single refrigeration system

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

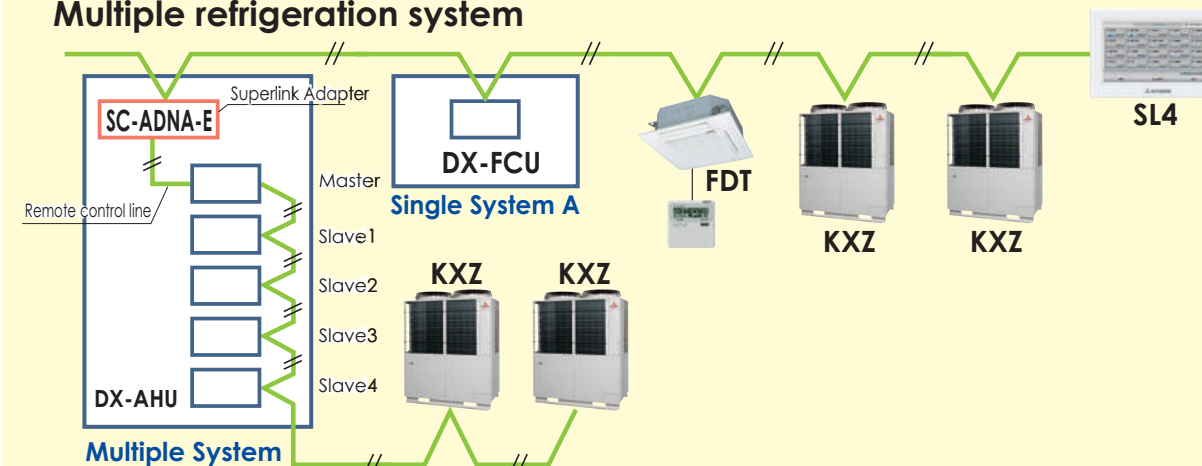


## Connection to SUPERLINK II

### Single refrigeration system



### Multiple refrigeration system





# Control Systems

## <Individual control>

### Remote Control line up

	indoor unit	remote control		indoor unit	remote control	indoor unit	remote control	indoor unit	remote control
wired	all models	RC-EX3A	wireless	FDT	RCN-T-5AW-E2	FDT5	RCN-TS-E2	FDE	RCN-E-E3
		RC-E5		FDTC	RCN-TC-5AW-E2	FDK22-56	RCN-K-E2	FDFW	RCN-FW-E2
		RCH-E3		FDTW	RCN-TW-E2	FDK71	RCN-K71-E2	others*	RCN-KIT4-E2

\*FDTQ, FDU, FDUH, FDTU, FDUH, FDU-F

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

### Wired remote control (option)

#### RC-EX3A

#### Easy touch and Easy view with full dot 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)

**Operation mode setting screen**

The desired operation mode can be selected by simply tapping this button.

**Setting temperature screen**

You can select the temperature as desired by tapping  $\Delta$   $\nabla$  button.

**Operation mode**

- Cooling
- Dry
- Auto
- Fan
- Heating

**Run / Stop**

**High power operation**

The highest capacity operation (Max 15 minutes)

- Increasing compressor speed
- Increasing air flow volume

**Energy-saving operation**

- Changes set temperature.
- At 28°C in cooling mode and 22°C in heating mode, 25°C in auto mode.
- Operation correction by outdoor temperature

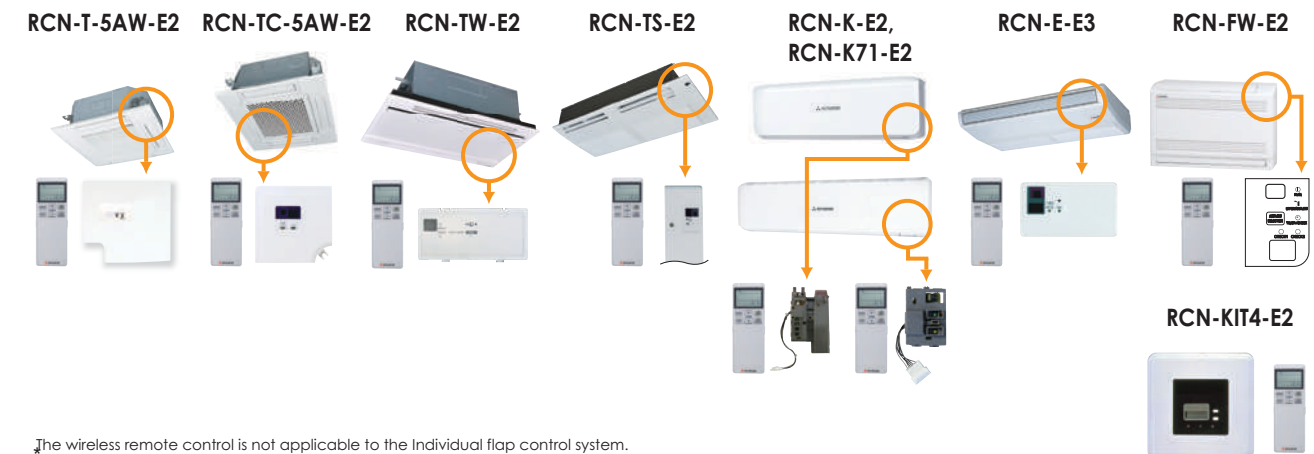
## 2. Main functions

	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-minute intervals).
	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-EX3 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 <b>New</b>	User can visually confirm and set the direction of flaps using the visual display on the remote controller.
	Automatic fan speed	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.
Convenience	Silent mode	Set the period of time to operate the Outdoor unit with prioritizing the quietness.
	Function switch <b>New</b>	The function switch allows user to select and set two functions among seven available functions.
	Favorite setting <b>New</b>	Operation mode, set temperature, fan speed and air flow direction automatically adjust to the programmed favorite setting.
	Adjusting Brightness of the background light <b>New</b>	The brightness of the background light can be adjusted by 10 stages.
	LCD contrast setting <b>New</b>	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.
Service	Setting temp range	Limited range of setting temperature in the heating or the cooling operation can be selected.
	External Input/Output Function <b>New</b>	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.
	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



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

### Wired remote control (option)

#### RC-E5

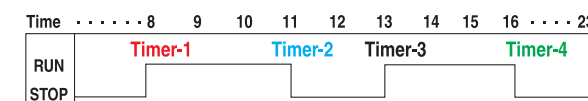


The RC-E5 controller enables extensive access to service and maintenance technical data combined with easy to use functions and a clear LCD display.

#### 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)



Considering specialized usage in hotel rooms, control buttons are limited only to 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 sensor in the indoor units or the remote control sensor can not sense the room temperature correctly, or individual remote control in each room is not required but only sensor is required (as when center control system is in place), install SC-THB-E3 at proper place in the rooms.



8m

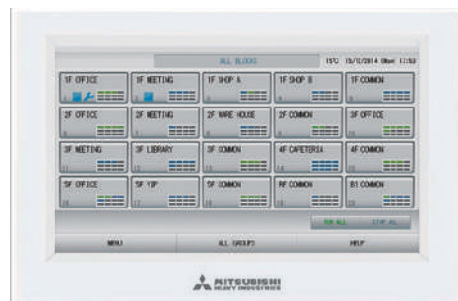




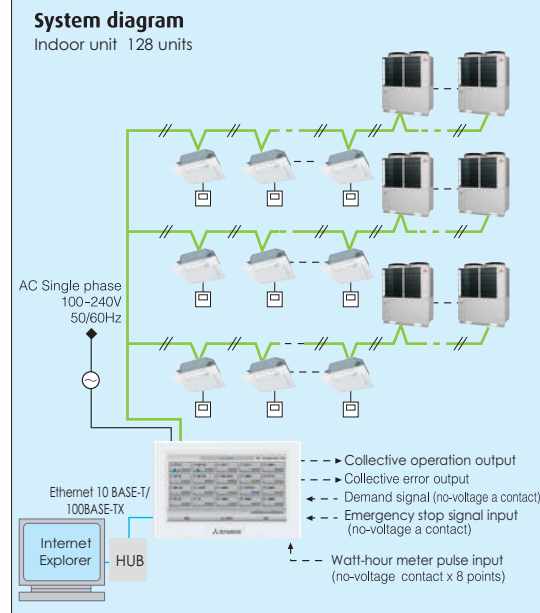
# <Central Control> SC-SL4-AE/BE

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  
Monitor resolution 1280 x 1024 or more.  
Web browser requirements: Internet Explorer 9, 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.

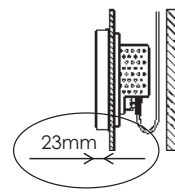
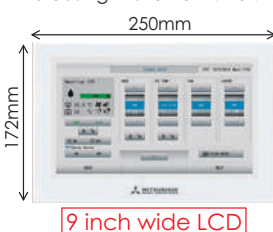


## Alarm history

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

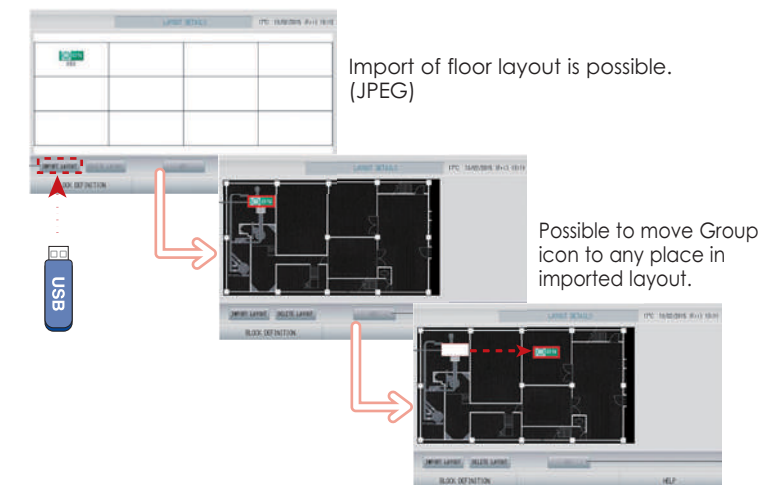
Increasing in size from 7 to 9 inches



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

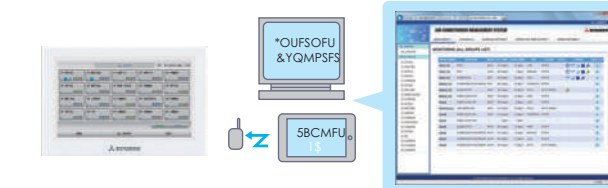
Green : in operation  
Blue : stop  
Red : error  
Yellow : communication error  
Gray : no groups

## Block layout function



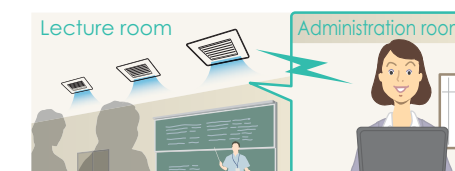
## Web function

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

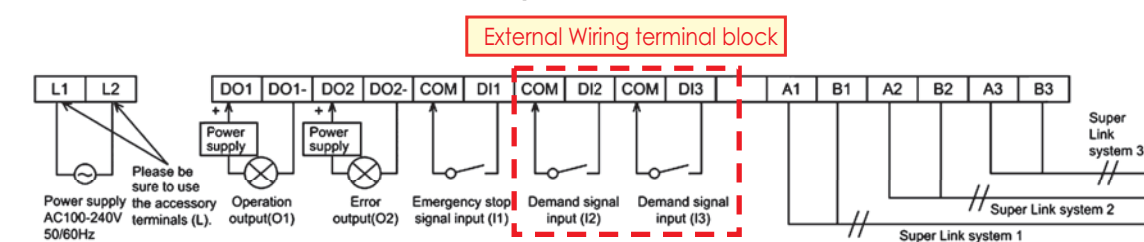


<Example>

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



## 3 levels of demand control from 2 external inputs



Demand level	Control	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

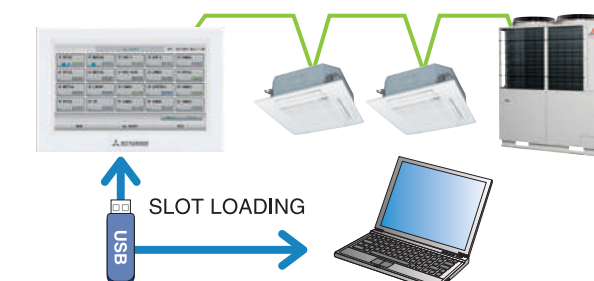
**Demand level 2**— Any indoor unit set to D1 or D2 switch to fan only mode and cannot be operated from the local remote controller

**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.



Item	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.

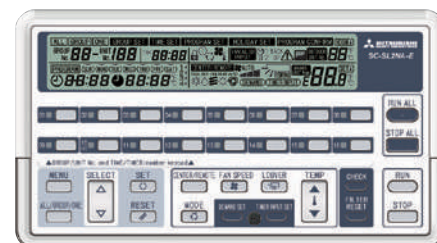
1. The SC-SL1N-E is connected to the Superlink-II network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to 16 units, with the sixteen operation button.
3. The unit or group numbers in operation or in need of service are displayed with an LED.
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.



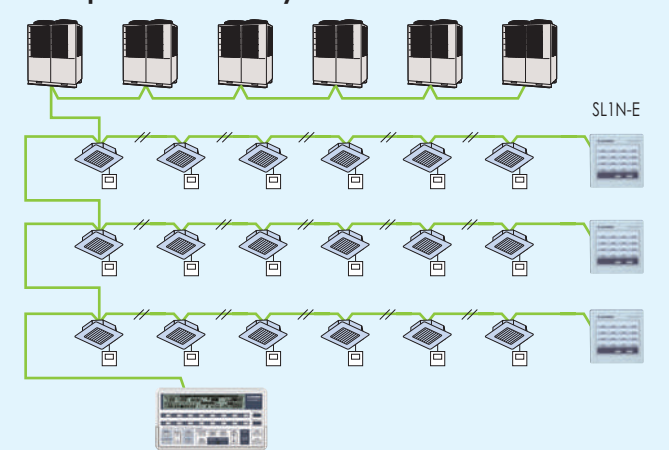
## SC-SL2NA-E

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 to 16 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.

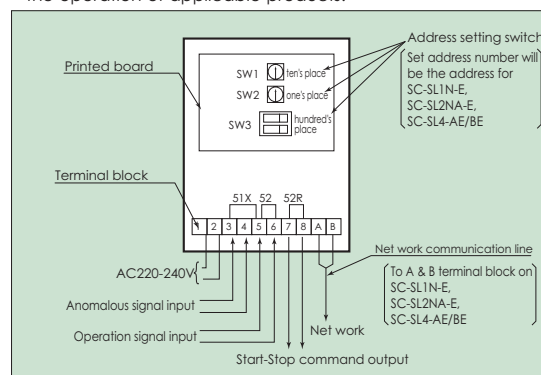


### Example of control by a center control SC-SL2NA-E



### 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.



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.

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

## <Building Management Systems>

### SC-WBGW256 (Web gateway+BACnet gateway)

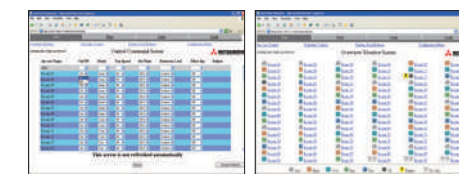
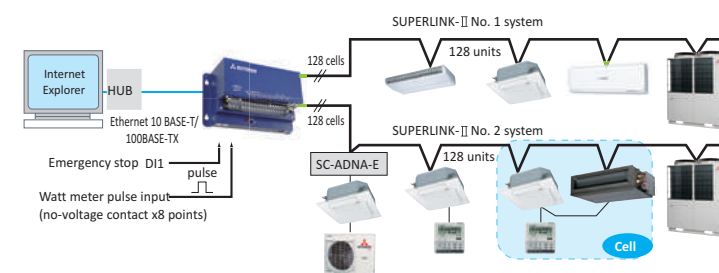
NEW

Production by order



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

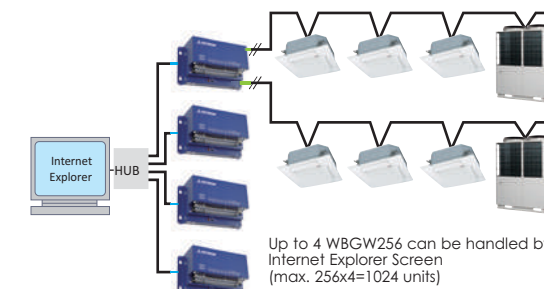
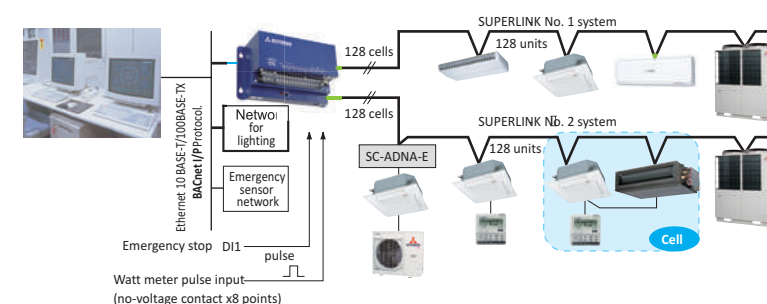
#### [In case of web gateway]



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)

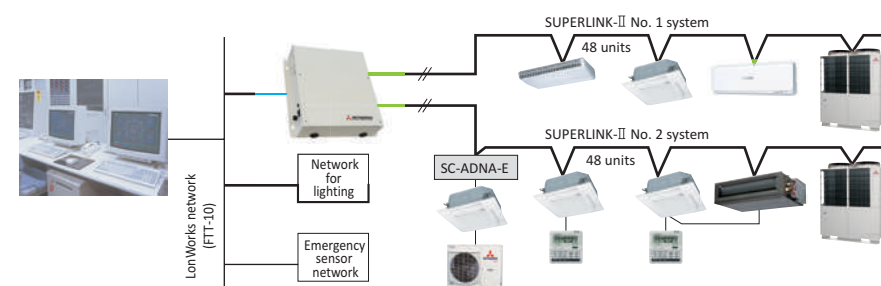
## SC-LGWNB (LonWorks gateway)

Production by order

NEW



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.

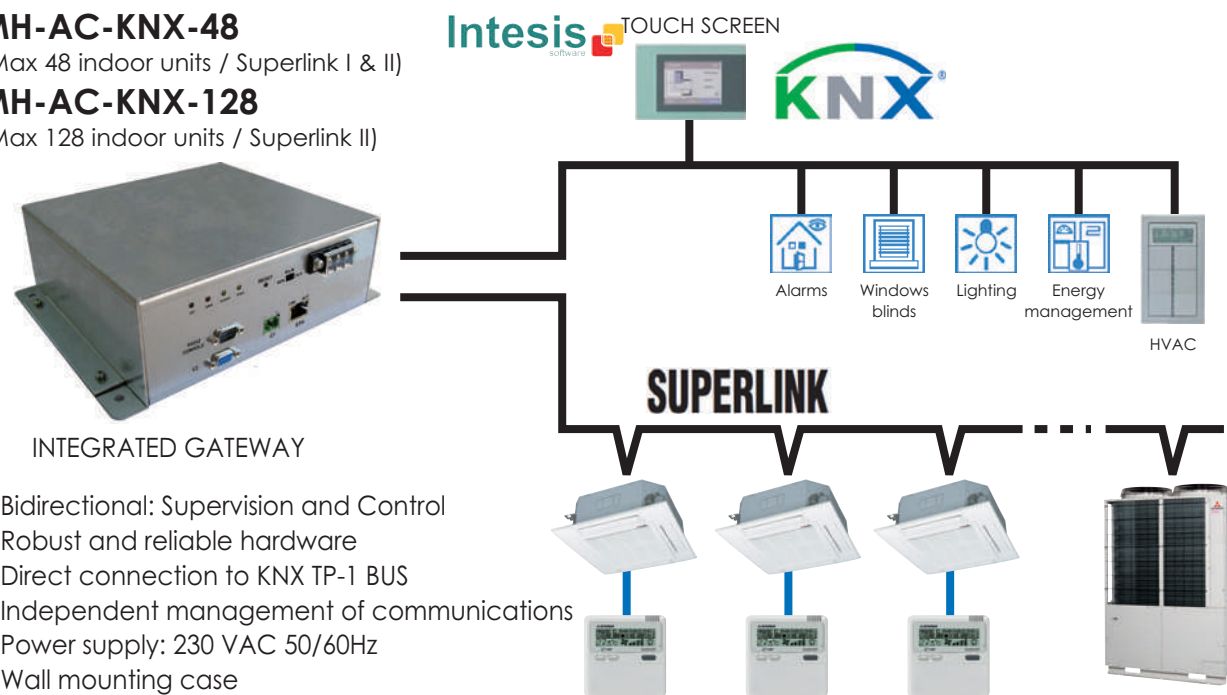
### Integration of Mitsubishi Heavy Industries Thermal Systems VRF in your KNX installation by Superlink

#### MH-AC-KNX-48

(Max 48 indoor units / Superlink I & II)

#### MH-AC-KNX-128

(Max 128 indoor units / Superlink II)



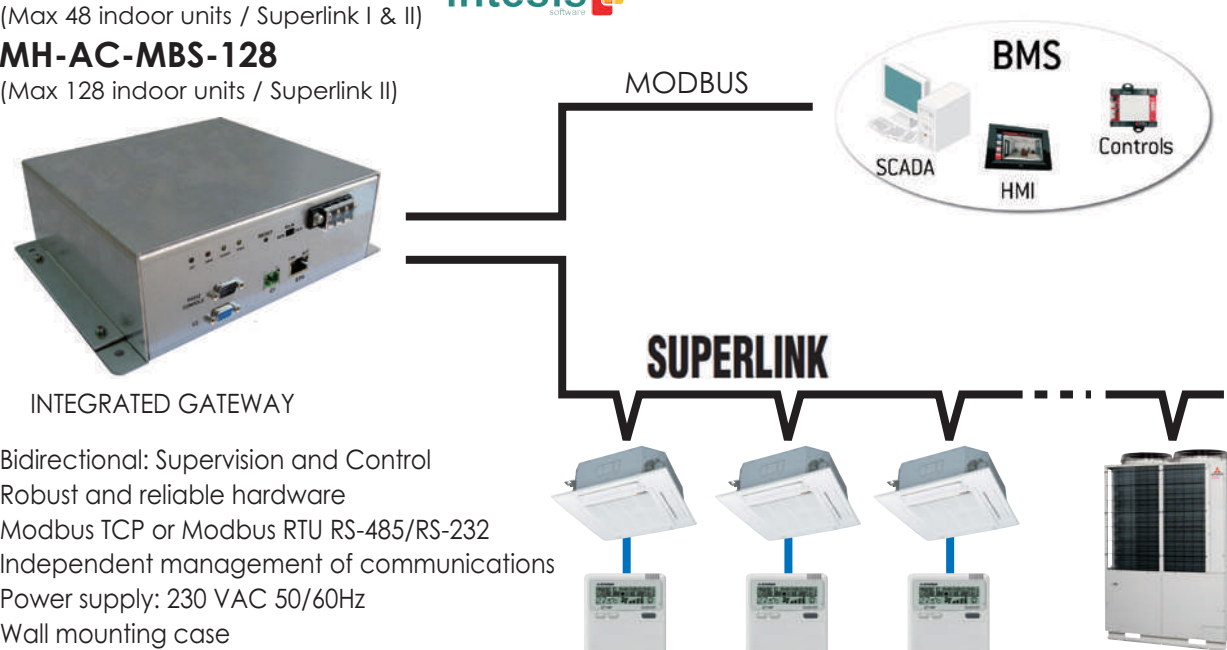
### Integration of Mitsubishi Heavy Industries Thermal Systems VRF in your Modbus installation by Superlink

#### MH-AC-MBS-48

(Max 48 indoor units / Superlink I & II)

#### MH-AC-MBS-128

(Max 128 indoor units / Superlink II)



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

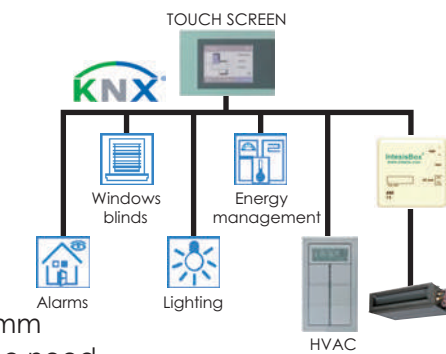
#### MH-RC-KNX-1i



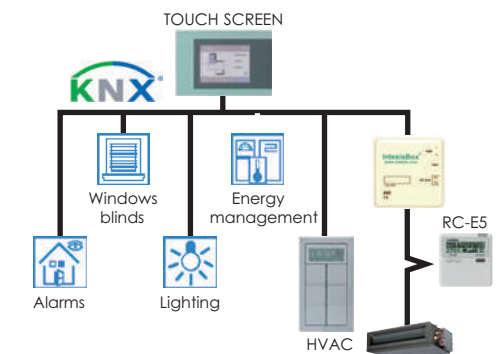
**IntesisBox**

- 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

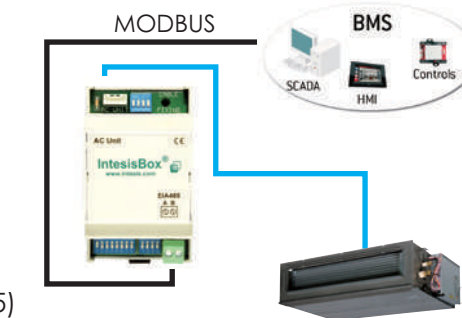
#### MH-RC-MBS-1



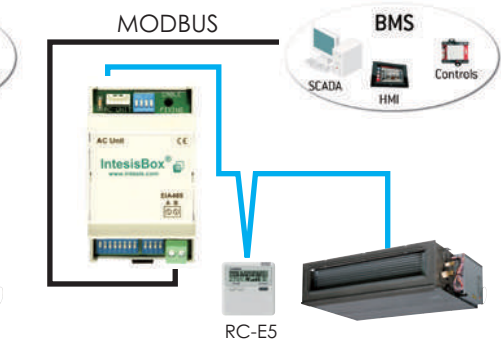
**IntesisBox**

- 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



### Integration of Mitsubishi Heavy Industries Thermal systems PAC in your EnOcean installation by Remote control line

#### MH-RC-ENO-1i/1iC



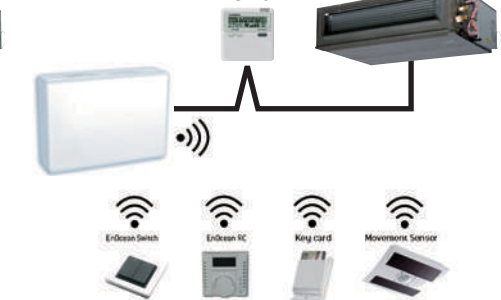
**IntesisBox**

- Protocol : EnOcean  
1i : 868MHz@EU  
1iC : 315MHz@USA, ASIA
- Dimension : 100 x 70 x 28 mm
- External Power supply : no need

Example :  
Device as Master



Example :  
Device as Slave



**IntesisHome**  
Your home in the cloud

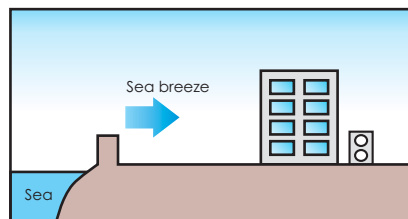
Intesis Wifi Adaptors



PAC Model: MH-RC-WIFI-1A

## Corrosion Protection Treatment series 4~60HP (11.2kW~168.0kW)

Corrosion Protection Treatment series are available with special coating applied for not only sheet metals but also small parts in order to prevent salt corrosion caused by sea breeze in area along coast line (Within approximately 500m from coast line).



Model No.	Nominal Cooling Capacity	Model No.	Nominal Cooling Capacity
FDCS112KXEN6	11.2kW	FDCS280KXZE1	28.0kW
FDCS112KXES6	11.2kW	FDCS335KXZE1	33.5kW
FDCS140KXEN6	14.0kW	FDCS400KXZE1	40.0kW
FDCS140KXES6	14.0kW	FDCS450KXZE1	45.0kW
FDCS155KXEN6	15.5kW	FDCS475KXZE1	47.5kW
FDCS155KXES6	15.5kW	FDCS504KXZE1	50.4kW
FDCS224KXE6G	22.4kW	FDCS560KXZE1	56.0kW
FDCS280KXE6G	28.0kW		
FDCS335KXE6G	33.5kW		

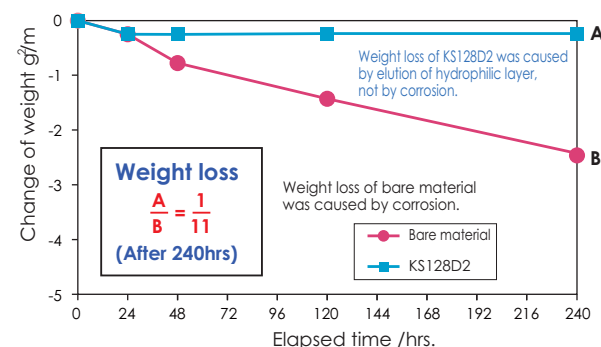
- Combination systems: 22~60HP (61.5kW~168.0kW) are the same as that of the standard KXZ series shown on previous pages.
- Specifications and Dimensions are the same as that of the standard KXZ series shown on previous pages.
- Non-CE Marking models.



### Corrosion resistance performance of high anticorrosion fin

#### Comparison of weight loss by corrosion

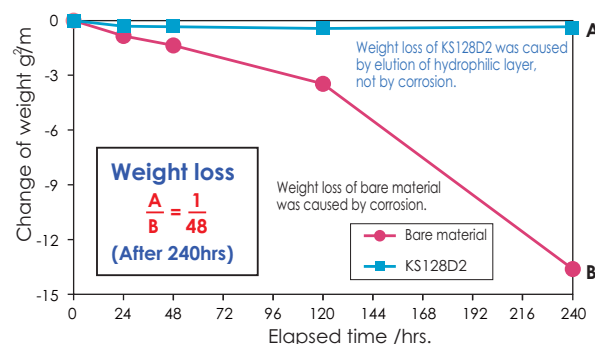
##### Neutral salt water spray test



##### <Test conditions>

JIS Z2371  
NaCl concentration : 50g/L  
pH : 6.5~7.2  
temperature : 35°C

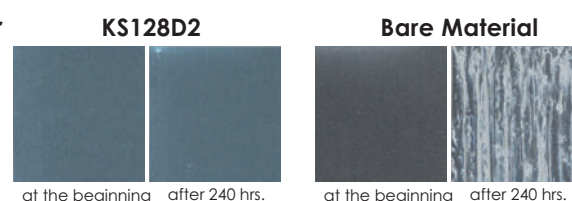
##### Acetic acid salt water spray test



##### <Test conditions>

JIS Z2371  
NaCl concentration : 50g/L  
pH : 3.1~3.3 (adjusted with acetic acid)  
temperature : 35°C

#### Appearance comparison before and after acetic acid salt water spray test



For outside sheet metals, Cation electrodeposition coating is used for undercoat plus polyester powder coating or acrylic baked coating for top coat and corrosion protection is applied for heat exchanger, welded parts, fan guard, fin guard and other major parts.

Preventing corrosion by salt damage or sulfurous acid gas has made service life of this series longer while its exterior appearance has been greatly improved.

Durability of this series for anticorrosion is about two times that of standard outdoor units under the same conditions.

#### Additional treatment from the standard series

	Micro	KXZ
Exterior panel	undercoat: Cation electrodeposition coating topcoat: polyester powder coating or acrylic baked coating	undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Base plate	undercoat: Cation electrodeposition coating topcoat: polyester powder coating or acrylic baked coating	undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Drain pan		undercoat: Cation electrodeposition coating topcoat: acrylic baked coating
Fan motor	application of anticorrosion compound	application of anticorrosion compound
Fan motor base	4~6HP	application of anticorrosion compound
	8~12HP	
Heat exchanger	Fin	Precoated Aluminum Blue Fins in high anticorrosion specification
	pipe	application of anticorrosion compound
	Side plate	application of anticorrosion compound
Compressor	application of anticorrosion compound	application of anticorrosion compound
Accumulator	application of anticorrosion compound	application of anticorrosion compound
Receiver	application of anticorrosion compound	application of anticorrosion compound
Control box	4~6HP	galvanized steel sheet + undercoat: Cation electrode position coating + topcoat: acrylic baked finish
	8~12HP	
Baffle plate	4~6HP	
	8~12HP	
Service valve bracket	4~6HP	galvanized steel sheet + undercoat: Cation electrode position coating + topcoat: acrylic baking finish
	8~12HP	
Screw for exterior panel	zinc coating + chromate treatment + fluorine coating	zinc coating + chromate treatment + fluorine coating
Screw tap for inside of exterior panel	zinc coating + chromate treatment + fluorine coating	zinc coating + chromate treatment + fluorine coating

Corrosion protection treatment complies with regulation of The Japan Refrigeration and Air Conditioning Industry Association (JRA9002)

#### Caution

Even if the outdoor unit is protected with the anti-salt damage treatment, it cannot be perfectly free from rusting. The following points should be kept in mind during installation and maintenance of the outdoor units.

#### Installation

- (1) When installing the outdoor unit close to the coastal area, provide a windbreak to protect it from direct sea breeze and salt water splash.
- (2) Select a well-drained place to install.
- (3) If any scratch or damages occurred on the outdoor unit during installation, repair it carefully.

#### Maintenance

- (1) Clean salt grains on the outdoor unit with fresh water periodically.
- (2) Apply rust preventive at regular intervals for maintenance depending on the conditions at the installation place (consulting with the withstanding capacity).
- (3) Confirm reset of screw tap after maintenance, if missing it may cause corrosion occurred from the hole of screw tap.
- (4) During prolonged non operation periods, protect the unit with covering.





# High Head series (100m) **cooling only**

## 14~48HP (40.0~136.0kW)

### Model No. Nominal Cooling Capacity

FDCH335CKXE6G-K*	33.5 kW (380V)
FDCH400CKXE6G	40.0 kW (380V)
FDCH450CKXE6G	45.0 kW (380V)
FDCH504CKXE6G	50.4 kW (380V)
FDCH560CKXE6G	56.0 kW (380V)
FDCH560CKXE6G-K*	56.0 kW (380V)
FDCH615CKXE6G	61.5 kW (380V)
FDCH680CKXE6G	68.0 kW (380V)

\* FDCH335CKXE6G-K & FDCH560CKXE6G-K are only used for combining with other models.

- Maximum allowable height difference between the outdoor and the indoor unit located at the lowest height position has been increased from 50m to 100m. (When the outdoor unit is located at higher position than the indoor unit)

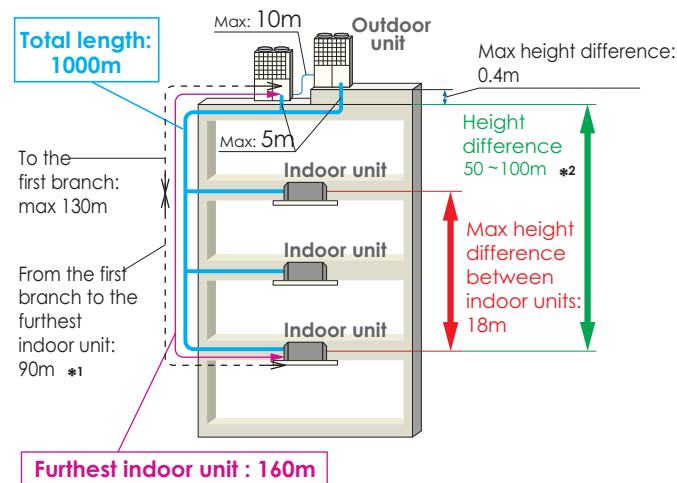
- Non-CE Marking models.

### Model No.

FDCH735CKXE6G (FDCH335-K+FDCH400)
FDCH800CKXE6G (FDCH400x2)
FDCH850CKXE6G (FDCH400+FDCH450)
FDCH900CKXE6G (FDCH450x2)
FDCH960CKXE6G (FDCH450+FDCH504)
FDCH1010CKXE6G (FDCH504x2)
FDCH1065CKXE6G (FDCH504+FDCH560)
FDCH1130CKXE6G (FDCH560x2)
FDCH1180CKXE6G (FDCH560-K+FDCH615)
FDCH1235CKXE6G (FDCH615x2)
FDCH1300CKXE6G (FDCH615+FDCH680)
FDCH1360CKXE6G (FDCH680x2)

### Nominal Cooling Capacity

73.5 kW (380V)
80.0 kW (380V)
85.0 kW (380V)
90.0 kW (380V)
96.0 kW (380V)
101.0 kW (380V)
106.5 kW (380V)
113.0 kW (380V)
118.0 kW (380V)
123.5 kW (380V)
130.0 kW (380V)
136.0 kW (380V)



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

\*2 In case of less than 50m, the High Head models can not be applied.  
In case Indoor unit is higher than outdoor unit, the High Head models can not be applied.

## Specifications

Item		Model	FDCH400CKXE6G	FDCH450CKXE6G	FDCH504CKXE6G	FDCH560CKXE6G	FDCH615CKXE6G	FDCH680CKXE6G
Nominal horse power			14HP	16HP	18HP	20HP	22HP	24HP
Power source			3 Phase 380~415V, 50Hz					
Nominal capacity	Cooling	kW	40.0	45.0	50.4	56.0	61.5	68.0
Electrical characteristics	Starting current	A	8					
Exterior dimensions	HxWxD	mm	1690x1350x720			2048x1350x720		
Net weight		kg	326			358	377	
Refrigerant charge	R410A	kg	11.5					
Sound pressure level	Cooling	dB(A)	59.5	62.5	61.5	63.0	64.5	65.0
Refrigerant piping size	Liquid line	mm(in)	ø12.7(1/2")			ø15.88(5/8")		
	Gas line		ø25.4(1") [ø28.58(1 1/8")] ø28.58(1 1/8")			ø28.58(1 1/8")		
Capacity connection		%	50~200			50~160		
Number of connectable indoor units			36	40	36	40	44	49

Item		Model	FDCH735CKXE6G	FDCH800CKXE6G	FDCH850CKXE6G	FDCH900CKXE6G
Combination (FDCH)			335CKXE6G-K	400CKXE6G	400CKXE6G	450CKXE6G
			400CKXE6G	400CKXE6G	450CKXE6G	450CKXE6G
Nominal horse power			26HP	28HP	30HP	32HP
Power source			3 Phase 380~415V, 50Hz			
Nominal capacity	Cooling	kW	73.5	80.0	85.0	90.0
Electrical characteristics	Starting current	A	16			
Exterior dimensions	HxWxD	mm	1690x2700x720			
Net weight		kg	326x2			
Refrigerant charge	R410A	kg	11.5x2			
Refrigerant piping size	Liquid line	mm(in)	ø19.05(3/4")			
	Gas line		ø31.8(1 1/4") [ø34.92(1 3/8")]			
Capacity connection		%	50~160			
Number of connectable indoor units			53	58	61	65

Item		Model	FDCH960CKXE6G	FDCH1010CKXE6G	FDCH1065CKXE6G	FDCH1130CKXE6G
Combination (FDCH)			450CKXE6G	504CKXE6G	504CKXE6G	560CKXE6G
			504CKXE6G	504CKXE6G	560CKXE6G	560CKXE6G
Nominal horse power			34HP	36HP	38HP	40HP
Power source			3 Phase 380~415V, 50Hz			
Nominal capacity	Cooling	kW	96.0	101.0	106.5	113.0
Electrical characteristics	Starting current	A	16			
Exterior dimensions	HxWxD	mm	2048x2700x720			
Net weight		kg	326+358	358x2		
Refrigerant charge	R410A	kg	11.5x2			
Refrigerant piping size	Liquid line	mm(in)	ø19.05(3/4")		ø22.22(7/8")	
	Gas line		ø31.8(1 1/4") [ø34.92(1 3/8")]		ø38.1(1 1/2")	
Capacity connection		%	50~160	50~130		
Number of connectable indoor units			69	59	62	66

Item		Model	FDCH1180CKXE6G	FDCH1235CKXE6G	FDCH1300CKXE6G	FDCH1360CKXE6G
Combination (FDCH)			560CKXE6G-K	615CKXE6G	615CKXE6G	680CKXE6G
			615CKXE6G	615CKXE6G	680CKXE6G	680CKXE6G
Nominal horse power			42HP	44HP	46HP	48HP
Power source			3 Phase 380~415V, 50Hz			
Nominal capacity	Cooling	kW	118.0	123.5	130.0	136.0
Electrical characteristics	Starting current	A	16			
Exterior dimensions	HxWxD	mm	2048x2700x720			
Net weight		kg	377x2			
Refrigerant charge	R410A	kg	11.5x2			
Refrigerant piping size	Liquid line	mm(in)	ø22.22(7/8")			
	Gas line		ø38.1(1 1/2")			
Capacity connection		%	50~130			
Number of connectable indoor units			69	72	76	80

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

4. The above data applies to D service code models. Please check service codes for full specification.



# Refresh series

If replacing a used unit with a new one, these units can reuse existing piping.

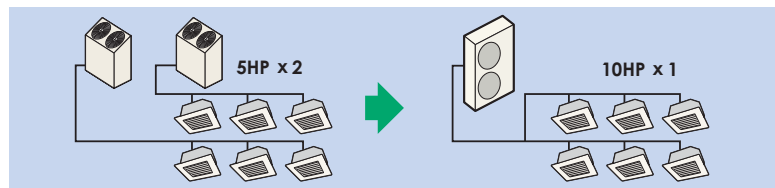
Blue  
Fin

Model No.	Nominal Cooling Capacity
FDCR224KXE6	22.4kW
FDCR280KXE6	28.0kW

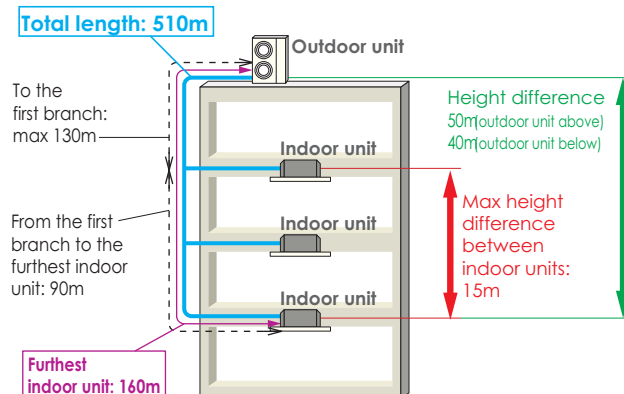
## <Option>

FDCR-KIT-E : Service valve kit

- Applies to a wide range of pipe sizes (R22, R407C, R410A standard size).
  - Meets to a short period of renewal installation.
  - Savings on replacement expenses such as scrapping waste material or procuring new pipe.
  - Possible to replace the existing unit with a new larger capacity unit.
  - Possible to replace plural systems with one system.
- For example: Existing 5HP x 2units can be replaced with a new 10HP x 1unit.



Note: FDUT15KXE6F-E, FDTC15KXE1 and FDK15KXE1 can not be connected to the above systems.



## Specifications

Item	Model	FDCR224KXE6	FDCR280KXE6
Nominal horse power		8HP	10HP
Power source		3 Phase 380-415V, 50Hz	
Nominal capacity	Cooling	22.4	28.0
	Heating	25.0	31.5
Electrical characteristics	Starting current	5	
	Running current	9.25-8.47	13.22-12.10
Exterior dimensions	HxWxD	1675x1080x480	
	Net weight	224	
Refrigerant charge	R410A	11.5	
Sound pressure level	Cooling/Heating	58/58	59/60
Refrigerant piping size	Liquid line	ø9.52(3/8")~ø15.88(5/8")	
	Gas line	ø19.05(3/4")~ø25.4(1")	ø22.22(7/8")~ø28.58(1 1/8")
Capacity connection	%	50~130	
Number of connectable indoor units		13	16

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

## Advanced refresh function

### ◆ When the existing unit is operable

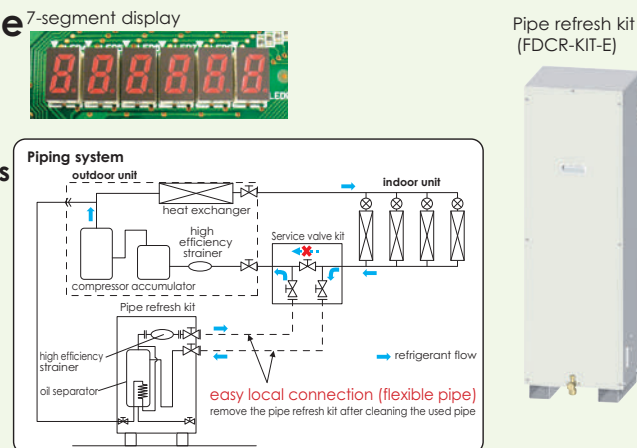
The existing pipe can be reused by cooling operation only.  
 Pipe refresh kit and Service valve kit are not required.

- Implement cooling operation of all indoor units for more than 30 minutes.
- Implement pump-down after cooling operation.
- Recover refrigerant and remove the existing outdoor unit and indoor unit.

### ◆ When the existing unit is not operable

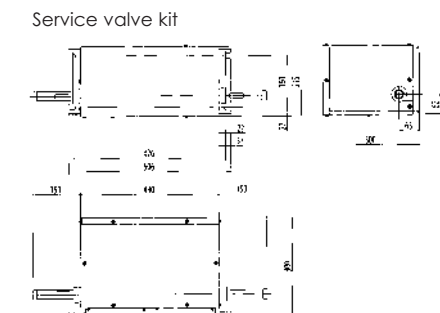
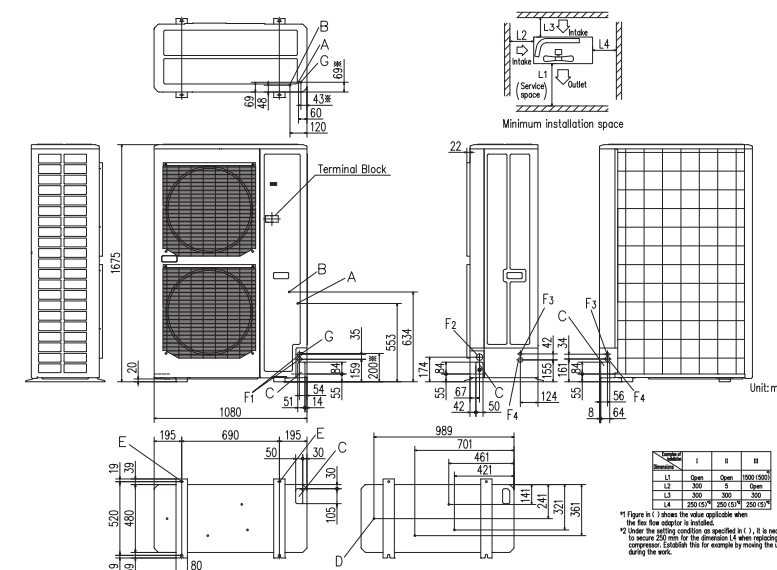
The existing pipe can be reused by washing operation after connecting Refresh outdoor units, Pipe refresh kit and Service valve kit.  
 Connecting and removing of Refresh outdoor units and Pipe refresh kit is very easy by use of flexible pipe and flanges.

- Pipe washing operation is implemented by changing dip switch on the outdoor unit PCB.
- Completing washing is monitored via 7-segment display on the outdoor unit PCB.
- As washing operation is about 60 minutes, it can meet to a required short period of renewal installation.



## Dimensions

All measurements in mm.

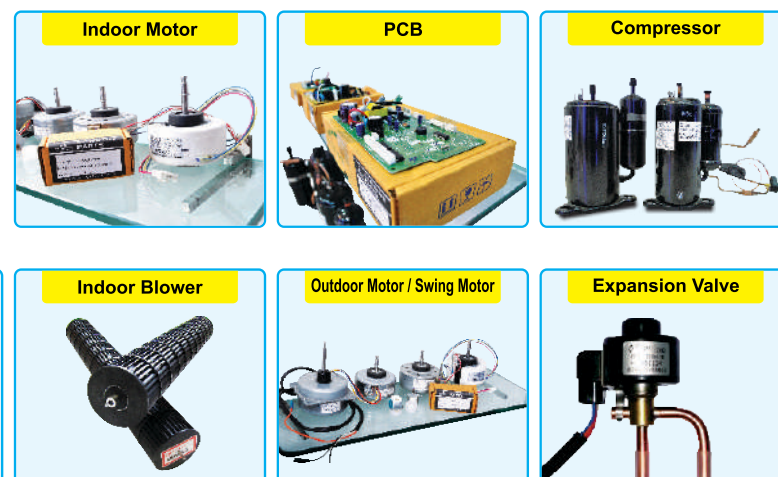


Mark	Content	
A	Service valve connection of the attached connecting pipe (gas side)	ø19.05 (3/4") (Flare)
B	Service valve connection (liquid side)	ø12.7 (1/2") (Flare)
C	Pipe/cable draw-out hole	4places
D	Drain discharge hole	ø20 x 4places
E	Anchor bolt hole	M10 x 4places
F1	Cable draw-out hole	ø30
F2	Cable draw-out hole	ø45
F3	Cable draw-out hole	ø22
F4	Cable draw-out hole	ø34
G	Connecting position of the local pipe. (gas side)	ø25.4 (1") (Brazing)

Notes:

- It must not be surrounded by walls on the four sides.
- The unit must be fixed with anchor bolts. An anchor bolt must not protrude more than 15mm.
- 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.
- Leave 1m or more space above the unit.
- A wall in front of the blower outlet must not exceed the units height.
- The model name label is attached on the lower right corner of the front.
- Connect the Service valve with local pipe by using the pipe of the attachment.(Gas side only)
- Mark ※ shows the connecting position of the local pipe. (Gas side only)

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## NOTES

[illegible]

## NOTES

[illegible]