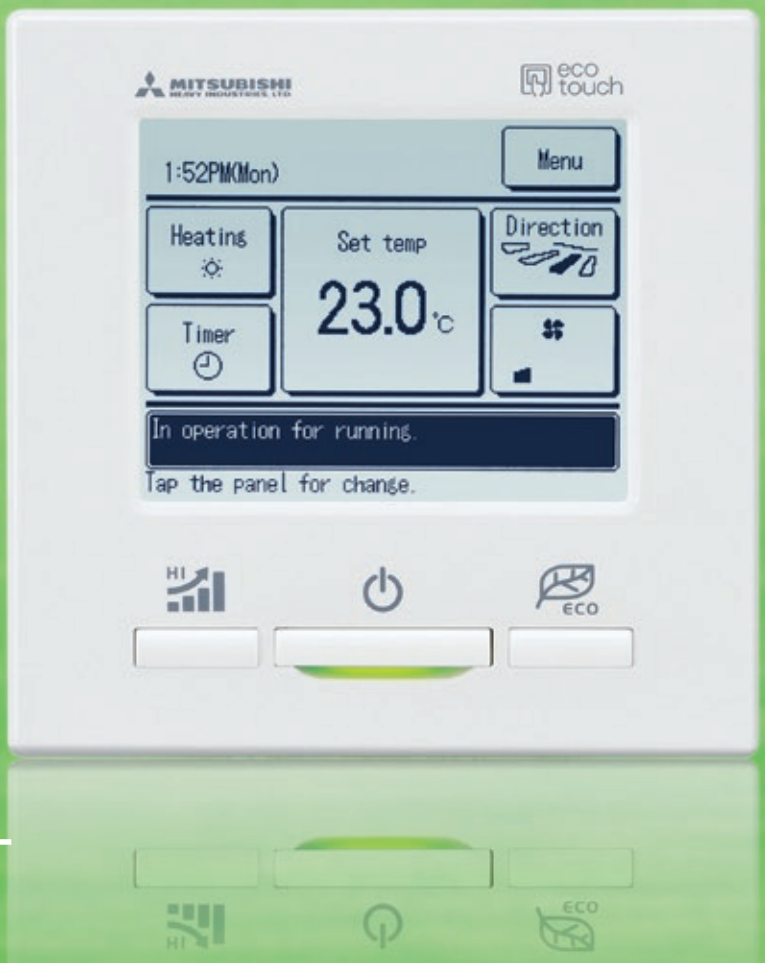
MITSUBISHI HEAVY INDUSTRIES, LTD.

Our Technologies, Your Tomorrow

R410A

# 2013 Eco-lution

## High Performance Air-Conditioning




**NEW**

eco touch
**REMOTE CONTROL**

HyperMulti KX

VRF inverter multi-system Air-Conditioners

CE

50Hz

13KX01E

# History of Technologies

## more efficient , more sophisticated

KX2 KX4 KX6 (8~12HP)

# Line Up

MicroKX

KX6

## Contents

# Product Line Up

## <Outdoor units>

### from 11.2kW up to 136.0kW(24models)

| Single use (1 Outdoor unit) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | 4HP | 5HP | 6HP | 8HP | 10HP | 12HP | 14HP | 16HP | 18HP | 20HP | 22HP | 24HP |
| Model Code : kW | 11.2 | 14 | 15.5 | 22.4 | 28 | 33.5 | 40.0 | 45.0 | 50.4 | 56.0 | 61.5 | 68.0 |
| BTU / h | 38,200 | 47,800 | 52,900 | 76,400 | 95,500 | 114,300 | 136,500 | 153,600 | 172,000 | 191,100 | 209,900 | 232,000 |
| kcal / h | 9,630 | 12,040 | 13,330 | 19,260 | 24,080 | 28,810 | 34,400 | 38,700 | 43,340 | 48,160 | 52,890 | 58,480 |

| Combination use (2 Outdoor units) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Capacity | 26HP | 28HP | 30HP | 32HP | 34HP | 36HP | 38HP | 40HP | 42HP | 44HP | 46HP | 48HP |
| Model Index : kW | 73.5 | 80.0 | 85.0 | 90.0 | 96.0 | 101.0 | 106.5 | 113.0 | 118.0 | 123.5 | 130.0 | 136.0 |
| BTU / h | 250,800 | 273,000 | 290,100 | 307,100 | 327,600 | 344,700 | 363,400 | 385,600 | 402,700 | 421,400 | 443,600 | 464,100 |
| kcal / h | 63,210 | 68,800 | 73,100 | 77,400 | 82,560 | 86,860 | 91,590 | 97,180 | 101,480 | 106,210 | 111,800 | 116,960 |

MicroKX

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

☐ 1-phase 220-240V
☐ 3-phase 380-415V

MicroKX

| 8HP | 10HP | 12HP |
|---|---|---|
| FDC224KXE6G | FDC280KXE6G | FDC335KXE6G |

KX6

| 12HP | 14HP | 16HP | 18HP |
|---|---|---|---|
| FDC335KXE6-K※ | FDC400KXE6 | FDC450KXE6 | FDC504KXE6 |

| 20HP | 20HP | 22HP | 24HP |
|---|---|---|---|
| FDC560KXE6 | FDC560KXE6-K※ | FDC615KXE6 | FDC680KXE6 |

KX6

| 26HP | 28HP | 30HP | 32HP | 34HP | 36HP |
|---|---|---|---|---|---|
| FDC735KXE6 | FDC800KXE6 | FDC850KXE6 | FDC900KXE6 | FDC960KXE6 | FDC1010KXE6 |
| 12+14 | 14+14 | 14+16 | 16+16 | 16+18 | 18+18 |
| FDC335KXE6-K<br>FDC400KXE6 | FDC400KXE6<br>FDC400KXE6 | FDC400KXE6<br>FDC450KXE6 | FDC450KXE6<br>FDC450KXE6 | FDC450KXE6<br>FDC504KXE6 | FDC504KXE6<br>FDC504KXE6 |

| 38HP | 40HP | 42HP | 44HP | 46HP | 48HP |
|---|---|---|---|---|---|
| FDC1065KXE6 | FDC1130KXE6 | FDC1180KXE6 | FDC1235KXE6 | FDC1300KXE6 | FDC1360KXE6 |
| 18+20 | 20+20 | 20+22 | 22+22 | 22+24 | 24+24 |
| FDC504KXE6<br>FDC560KXE6 | FDC560KXE6<br>FDC560KXE6 | FDC560KXE6-K<br>FDC615KXE6 | FDC615KXE6<br>FDC615KXE6 | FDC615KXE6<br>FDC680KXE6 | FDC680KXE6<br>FDC680KXE6 |

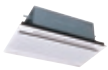
※ FDC335KXE6-K & FDC560KXE6-K are only used for combining with other models.

# <Indoor units>

## Wide variety of 17 types 89 models

A range of 17 types of exposed or concealed indoor units, in wide capacities, 89 indoor models. The best selection of indoor units for many kinds of rooms and preference can be available from our full lineup.

### Indoor units lineup

| Type | | | Capacity | 0.5HP | 0.8HP | 1HP | 1.25HP | 1.6HP | 2HP | 2.5HP | 3.2HP | 4HP | 5HP | 6HP | 8HP | 10HP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Model Code : kW | 15 | 22 | 28 | 36 | 45 | 56 | 71 | 90 | 112 | 140 | 160 | 224 | 280 |
| Ceiling Cassette | 4way | FDT |  | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | 4way Compact (600 x 600) | FDTC |  | | ● | ● | ● | ● | ● | | | | | | | |
| | 2way | FDTW |  | | | ● | | ● | ● | ● | ● | ● | ● | | | |
| | 1way Compact | FDTQ |  | | ● | ● | ● | | | | | | | | | |
| | 1way | FDTS |  | | | | | ● | | ● | | | | | | |
| Duct Connected | High Static Pressure | FDU |  | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | Low/Middle Static Pressure | FDUM |  | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | Low Static Pressure (thin) | FDUT |  | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | Compact & Flexible | FDUH |  | | ● | ● | ● | | | | | | | | | |
| Wall Mounted | | FDK |  | | ● | ● | ● | ● | ● | ● | | | | | | |
| Ceiling Suspended | | FDE |  | | | | ● | ● | ● | ● | | ● | ● | | | |
| Floor Standing | 2way | FDFW |  | | | ● | | ● | ● | | | | | | | |
| | with casing | FDFL |  | | | | | | | ● | | | | | | |
| | without casing | FDFU |  | | | ● | | ● | ● | ● | | | | | | |
| OA Processing unit | | FDU-F |  | | | | | | | | ● | | ● | | ● | ● |

| Type | | Air flow M³/h | 250 | 350 | 500 | 800 | 850 | 1000 | 1300 | 1800 |
|---|---|---|---|---|---|---|---|---|---|---|
| Fresh Air Ventilation and Heat Exchange unit | SAF |  | ● | ● | ● | ● | | ● | | |
| Fresh Air DX Assembly | SAF-DX |  | ● | ● | ● | ● | | ● | | |

# *eco touch REMOTE CONTROL*

**Advanced touch screen panel 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

### High level of visibility

- Big LCD with 3.8 inch full dot display
- Back light function
- Multi language display (9 languages)

NEW

**RC-EX1A**


eco touch

**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

**Simple setting by tapping button only**

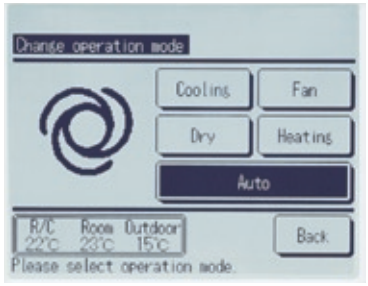
# 1. Basic operation

## All settings done by tapping touch screen panel

**Operation mode**

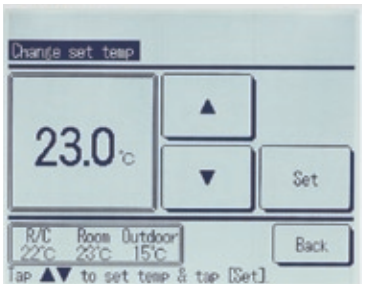
Cooling
Fan
Dry
Heating
Auto

### Operation mode setting screen




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


### Setting temperature screen




You can select the temperture as desired by tapping ▲▼ button.

# 2. Main functions

## Saving energy

Sleep timer
Peak cut timer
Automatic temerature set back
Weekly timer
Set ON/OFF timer by hour
Set ON/OFF timer by clock

## Comfort

Individual flap control
High power operation
External ventilation ON/OFF
Warming up operation
Automatic fan speed
Temperature increment setting by 0.5°C

## Convenience

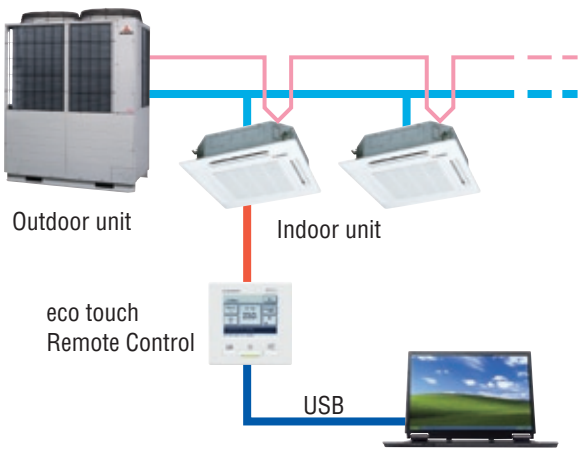
LCD contrast setting
Back light setting
Filter sign
Control sound
Outdoor silent mode
Summer time setting
Home leave mode
Indoor & outdoor temperature display
Heating standby display
Defrosting operation display
Auto cooling/heating display
°C/°F display
Administrator settings
Room name setting

## Service

Error code display
Operation data display
Next service date display
Contact company display
USB connection (mini-B)

## eco touch Remote control RC-EX1A Series Utility Software

By connecting this system to the eco touch Remote Control, the eco touch Remote Control can be operated from PC.



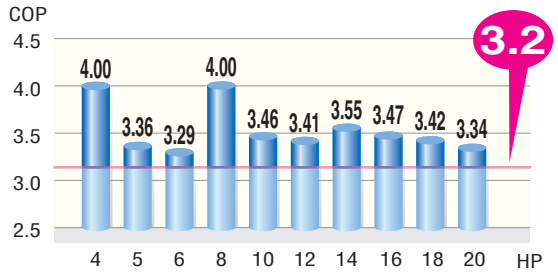

eco touch Remote Control
RC-EX1A Utility Software

# 1. High Efficiency (KX6)

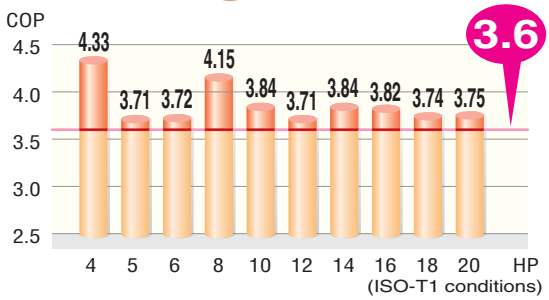
## The industry's highest COP levels

We have cleared the class A standard, the highest energy saving level, with our high COP (Coefficient Of Performance).

EER in Cooling




COP in Heating




*COP = Capacity[kW] / Power Consumption[kW]
*COP across the KX6 range ensures reduced running costs and reduced environmental impact.

# 2. Compact Design

## 4~6HP(KX6)

Volume
35% less
Weight
32% less

1FAN

**KX4**
H1300 x W970 x D370mm
125kg / 0.47m³

- Transportation Becomes much easier
- Easier to hide behind the fence (Harmonic Appearance)

**KX6**
H845 x W970 x D370mm
85kg / 0.30m³
(FDC112/140/155KXEN6)

## 8~12HP(KX6)

Volume
47% less
Weight
10% less

2FAN

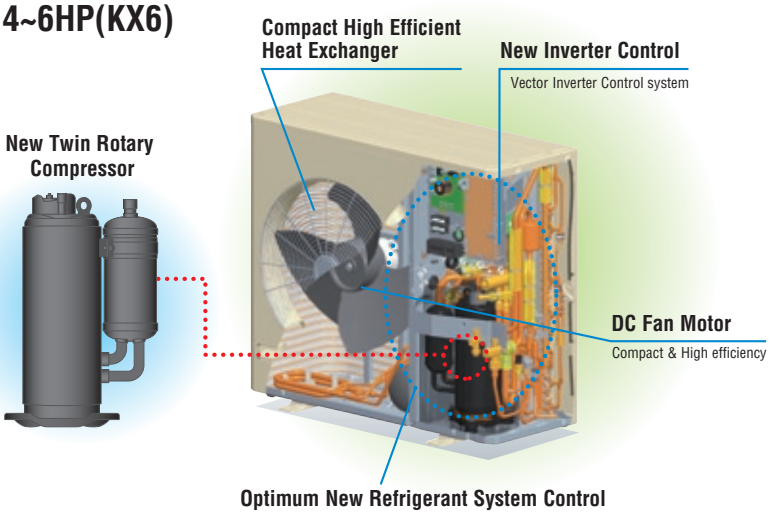
**KX4**
H1690 x W1350 x D720mm
245kg / 0.97m³

- Transportation Becomes much easier

**KX6**
H1675 x W1080 x D480mm
221kg / 0.52m³ (FDC224KXE6G)

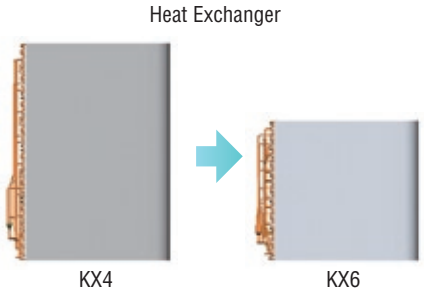
## High efficiency and compact design are realized applying the various advanced functions

### 4~6HP(KX6)

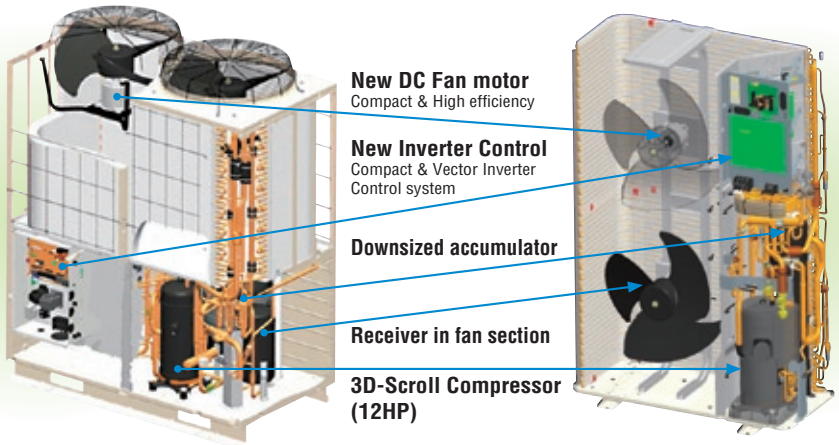



### Compact high efficiency Heat Exchanger

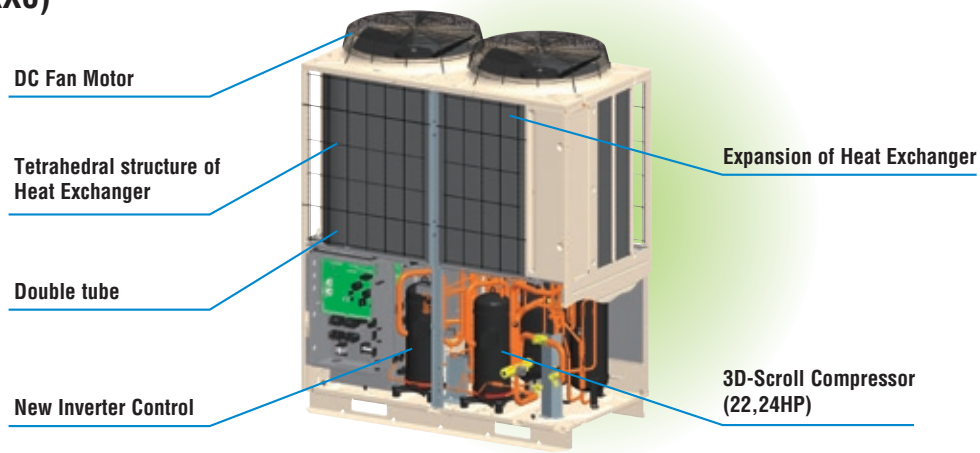
- Optimizing relationship of the air flow velocity & fin pattern
- Improvement of air distribution Maximizing efficiency of heat exchanger




### 8~12HP(KX6)

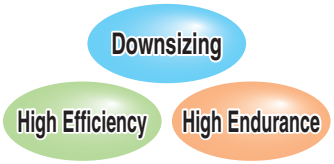


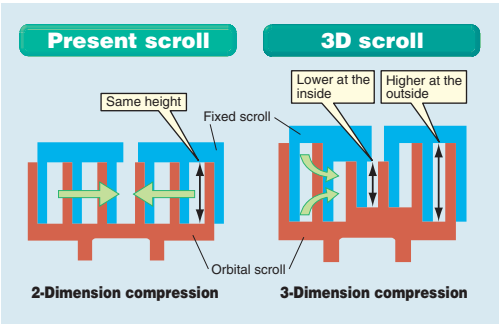

### 14~48HP(KX6)



## 3D Scroll Compressor

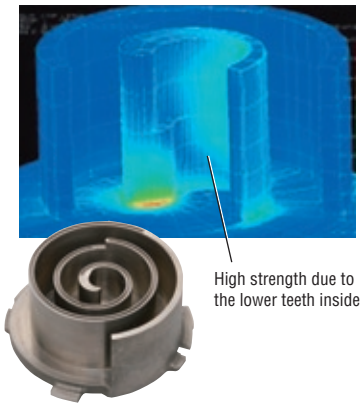
Unit start up speed in heating mode drastically improved for lower outdoor temperature operation.




**3D scroll compressor has the different height scroll at the outside and the inside.**

A high compression ratio is improved by compressing the refrigerant both radially and axially.
3-Dimension Compression has been realized with a much higher efficiency even if compression ratio is high.




The strength of the scroll is improved by reducing the height of the inner wrap, which receives a heavy load.

※3D compressors are applied for 12HP, 20HP, 22HP & 24HP.

## New Inverter Control (Vector control)

New Inverter Control has applied new advanced technology of Vector control and has realized high efficiency.

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

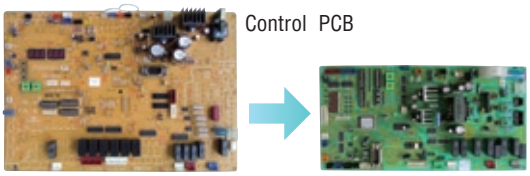
## Optimum Refrigerant System Control

We have improved refrigeration circuit from our long experience and have realized following Optimum Refrigerant System Control.

- Optimum heat exchanger refrigerant distribution
- Advanced refrigerant liquid return protection control system
- High speed system control by new Superlink system
- Use of larger diameter for suction piping and discharge piping and redesigned of double tube

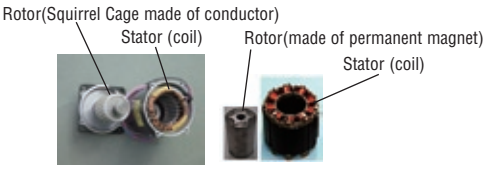
## Compact Integrated PCB

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



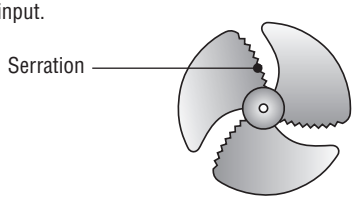

## DC Fan Motor

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




## 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.



# 3. Design Flexibility

## Increased indoor unit connection capacity

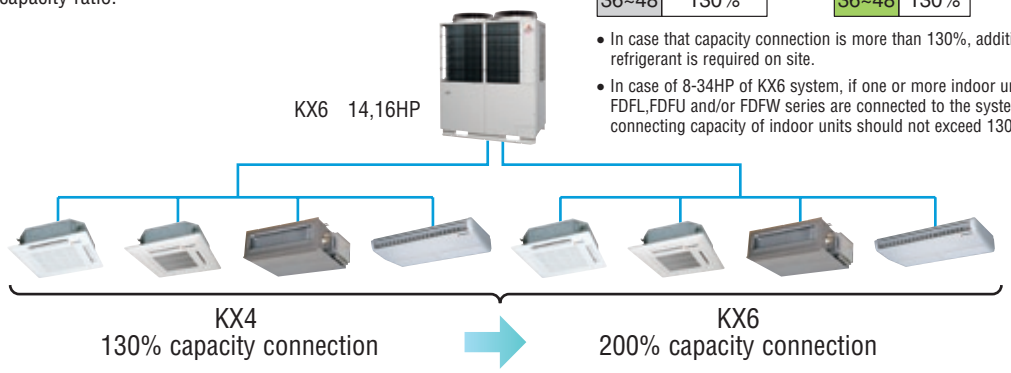
KX6 series(4~34HP) can connect indoor unit capacity up to 150~200% from 130% of previous models.
If the connection capacity of indoor units is more than 100%, capacity of each indoor unit may be affected by connection capacity ratio.

### Capacity connection

| HP | KX4 |
|---|---|
| 5~12 | 130% |
| 14,16 | 130% |
| 18~34 | 130% |
| 36~48 | 130% |

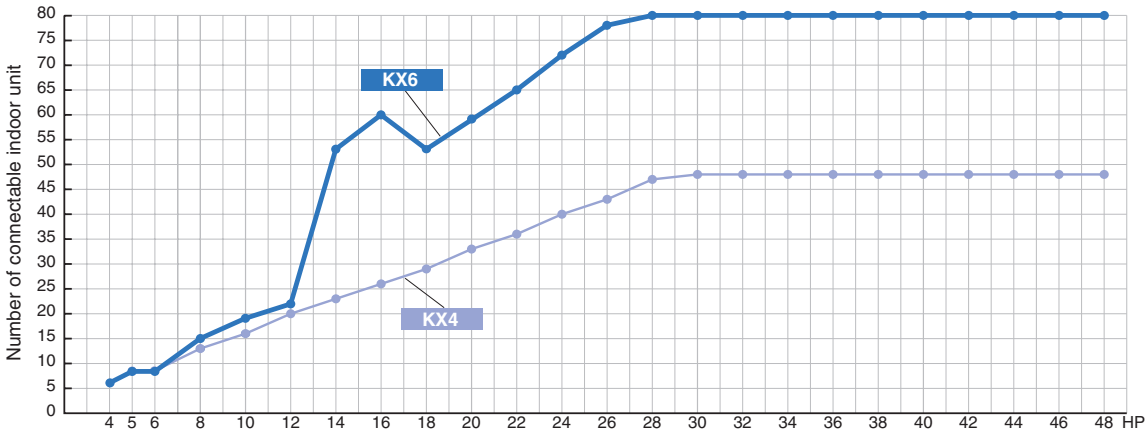
| HP | KX6 |
|---|---|
| 4~12 | 150% |
| 14,16 | 200% |
| 18~34 | 160% |
| 36~48 | 130% |

- In case that capacity connection is more than 130%, additional charge of refrigerant is required on site.
- In case of 8-34HP of KX6 system, if one or more indoor units of FDK, FDFL,FDFU and/or FDFW series are connected to the system, the total connecting capacity of indoor units should not exceed 130%.




## More connectable indoor units

KX6 enable more connectable indoor units (per kW), compared with former model KX4.




## Control Systems

KX6 series offer wide variation of control system and provide the best solution.

[KX6 Control system units with "New" SUPERLINK-Ⅱ]

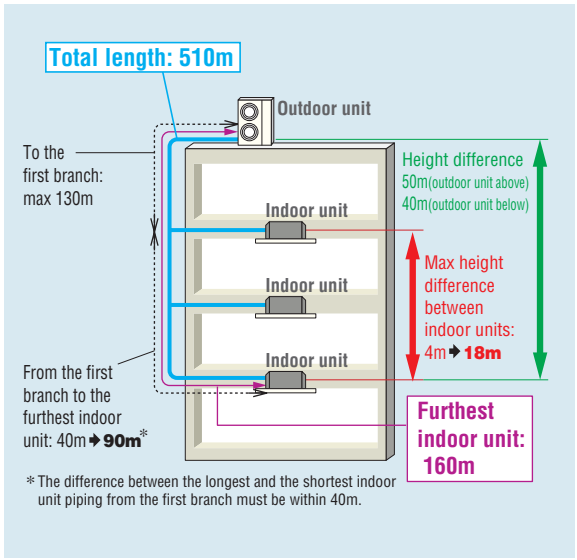
| Classification | Type | | Model | Connectable Indoor units (Maximum) | Electric power calculation |
|---|---|---|---|---|---|
| Individual controller | Wired | | RC-E5 | 1 | — |
| | | | RC-EX1A | 1 | — |
| | Wireless | | RCN-T-36W-E etc. | 1 | — |
| Center Console | Push buttons | | SC-SL1N-E | 16 | — |
| | | | SC-SL2NA-E | 64 | — |
| | Touch screen | | SC-SL3NA-AE | 128 | — |
| | | | SC-SL3NA-BE | 128 | ● |
| | PC windows interface units | | SC-WGWNA-A | 128(64x2) | — |
| | | | SC-WGWNA-B | 128(64x2) | ● |
| | BMS interface units | BACnet | SC-BGWNA-A | 128(64x2) | — |
| | | | SC-BGWNA-B | 128(64x2) | ● |
| | | Lonworks | SC-LGWNA-A | 96(48x2) | — |

## Long Pipe Length

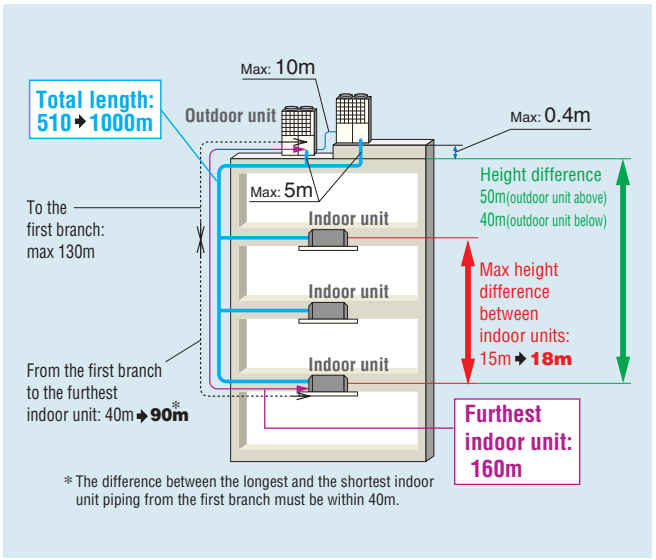
Piping length has extended max height difference between indoor units from 4m to 18m and enables us to put indoor unit on extra three floors.

As a result of the adoption of thinner refrigerant piping and refrigerant volume reductions, the industry's longest 160 m actual piping length or 1000m total piping length is realized.

### 8~12HP(KX6)




### 14~48HP(KX6)

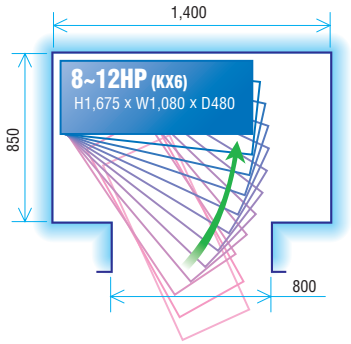


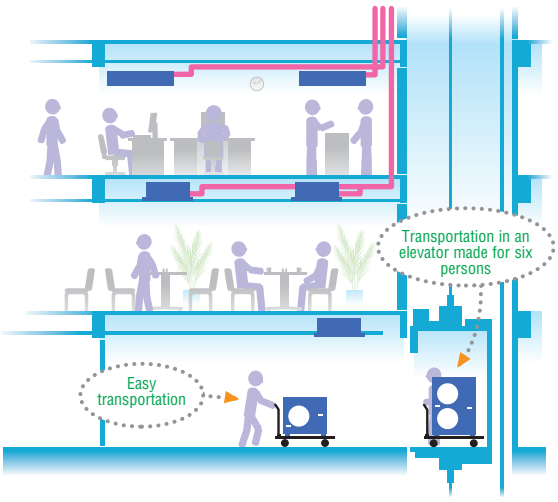

(1)Divide up the refrigerant system into independent refrigeration circuit systems in case required additional refrigerant on site is 50kg or more for 14~24HP and 100kg or more for 26~48HP.

(2)In case indoor unit connection capacity is 130% or more or total piping length is 510m or more, additional charge of refrigerant and oil on site is required. Refer to our Installation Manual for details.

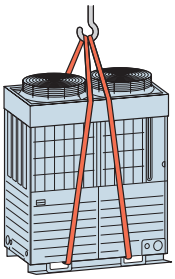
## Easy Transportation & Installation

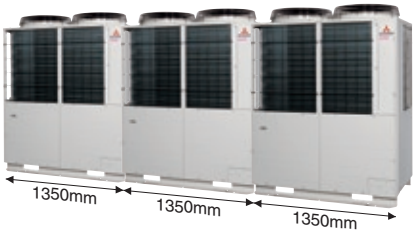
Due to realization of significant reduction in size and foot print which is one of the smallest in the industry, transportation in an elevator made for six persons (Width:1400mm, Depth:850, Open area:800mm) is possible, eliminating cost of a crane and reducing labor.



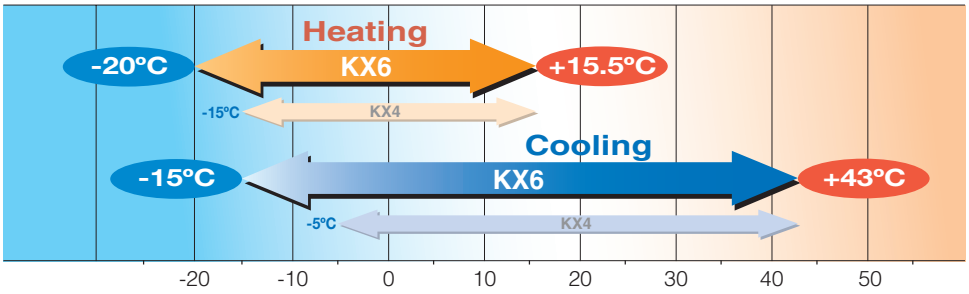

KX6(14~48HP) is portable and the uniform reduced footprint allows neat, continuous installation.





## Wide Range of Operation

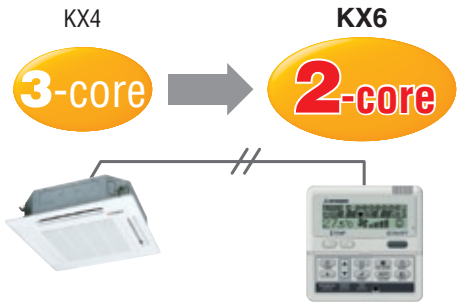
KX6 series permits a system design considering a heating range operation under a low temperature condition up to -20ºC from -15ºC of previous model and a cooling range operation under -15ºC from -5ºC of that.




✻For the capacities under low temperature conditions, refer to technical manual.

## Remote control for all indoor units

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



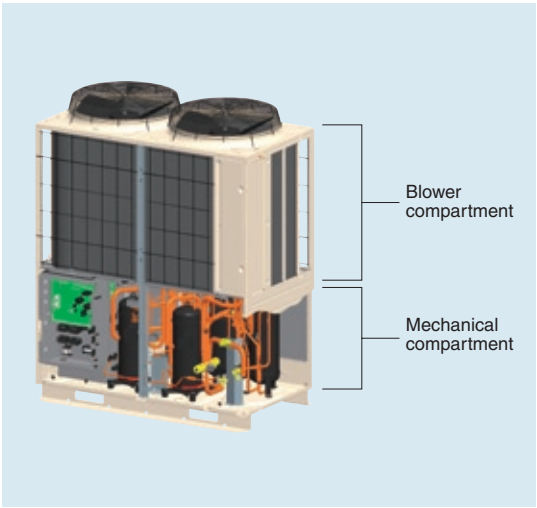

## Max length of electrical wiring

The wiring must be a 2-core shielded cable size 0.75mm$^2$ to 1.25mm$^2$.
The max length of 2-core can be 1500m from 1000m of previous models.


# 4. Serviceability

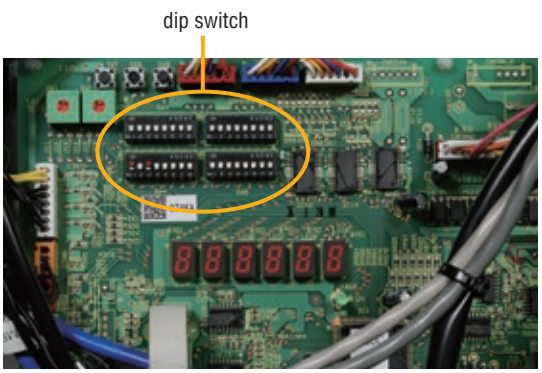
## Easy Service

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




## Check Operation (8~48HP)

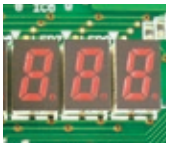
Closing of Service valve, crossing connection of refrigerant piping and electrical wiring, proper operation of EEV (Electrical Expansion Valve) can be checked automatically in cooling operation. This check operation can be done at 0~43ºC outdoor temperature and 10~32ºC indoor temperature by use of outdoor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



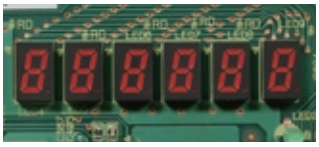
## Monitoring Function

KX6 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.

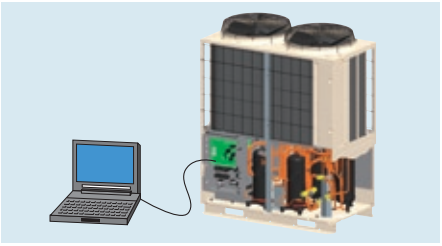


4~6HP



8~48HP

Equipped with RS232C for connection directly to your PC monitoring and service tasks made simple with our service software (“Mente PC”).
**all KX6 series**

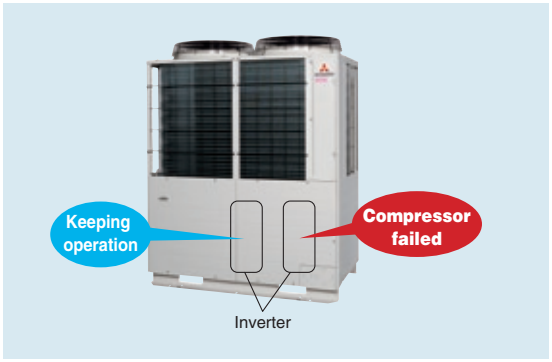


## 3 Layer Construction (KX6 〈14~48HP〉)

Thanks to improvement of control box structure from 4 to 3 layer construction and by use of hinged lays, service and maintenance has been made much easier for inverter components.

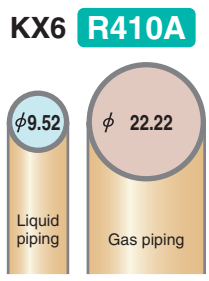
## Back-up Operation 〈14~48HP〉

In, 2-compressor module, in the event of the compressor failure, the system will keep operating with good compressor. In combined module, in the event that one unit has a failure, the system will keep operating with another unit.
Should compressor be damaged, compressor replacement should be done as soon as possible. However as emergency measure for a limited time, in 2 compressor module, the system can be kept operating with the good compressor. In combined module, the system can be kept operating with the other unit.




## Reduced Refrigerant Volume

To use the new refrigerant R410A, KX6 series have adopted thinner diameter refrigerant pipes, which will help reduce piping work cost.




ex.10HP

### Outdoor unit

| HP | KX6 | |
|---|---|---|
| | Liquid piping | Gas piping |
| 4 | ø9.52 | ø15.88 |
| 5 | | |
| 6 | | |
| 8 | | ø19.05 |
| 10 | | ø22.22 |
| 12 | ø12.7 | ø25.4[ø28.58] |
| 14 | | |
| 16 | | ø28.58 |
| 18 | | |
| 20 | | |
| 22 | | |
| 24 | | |
| 26 | ø15.88 | ø31.8[ø34.92] |
| 28 | | |
| 30 | | |
| 32 | | |
| 34 | | |
| 36 | | ø38.1[ø34.92] |
| 38 | ø19.05 | |
| 40 | | |
| 42 | | |
| 44 | | |
| 46 | | |
| 48 | | |

[ ]: Pipe sizes applicable to European installations are shown in parentheses.

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

## 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.

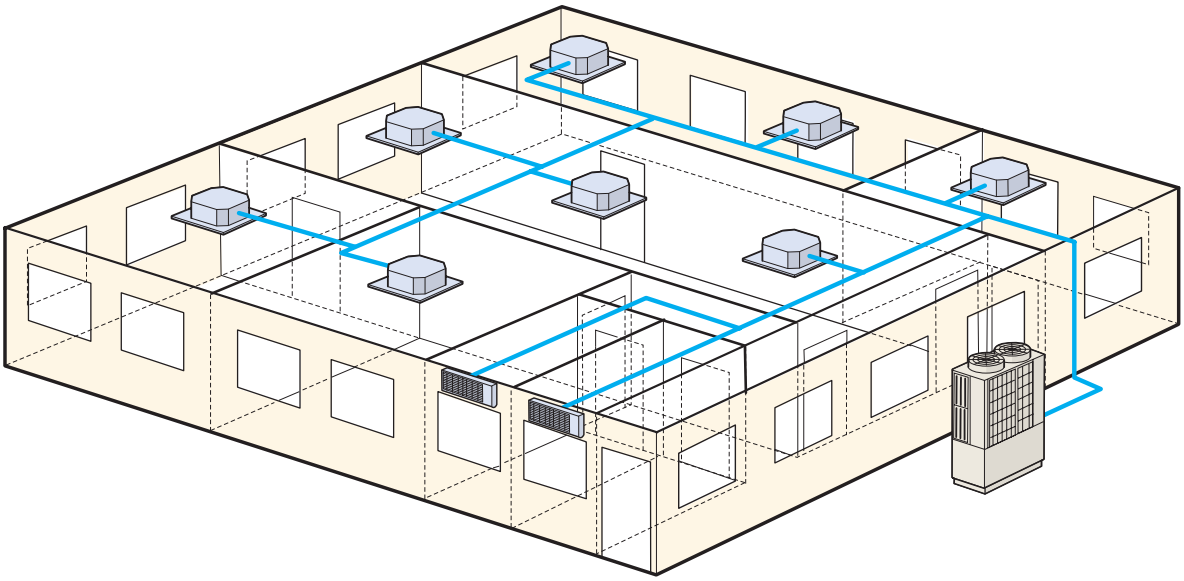
# KX6 heat pump systems

KX6 heat pump systems operate with 2 inter-connecting pipes, thus commonly referred to as a '2-pipe system'.

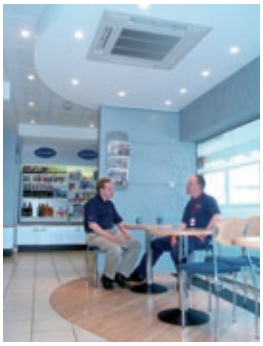
These systems provide either a heating or cooling operation to all indoor units and are suitable for a wide range of applications from an individual apartment (with "Micro KX", 1/phase system) to an entire multi storey building, especially where there are significant open plan areas to be controlled.

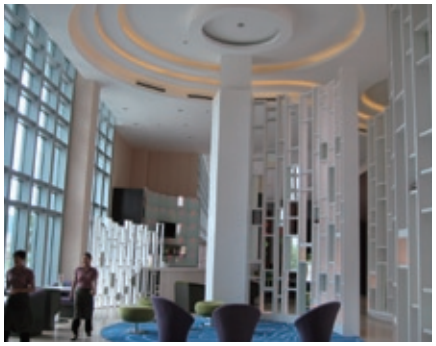
The range starts with a 11.2kW cooling capacity, up to the largest capacity single outdoor unit in the industry (24hp) with 68.0kW cooling capacity. Outdoor units can also be "twinned" providing up to 48HP/136.0kW on a single system.

The KX6 range has a total piping length of 1000m (14HP+) and the furthest indoor unit can be connected up to 160m (8HP+) from the outdoor unit.



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





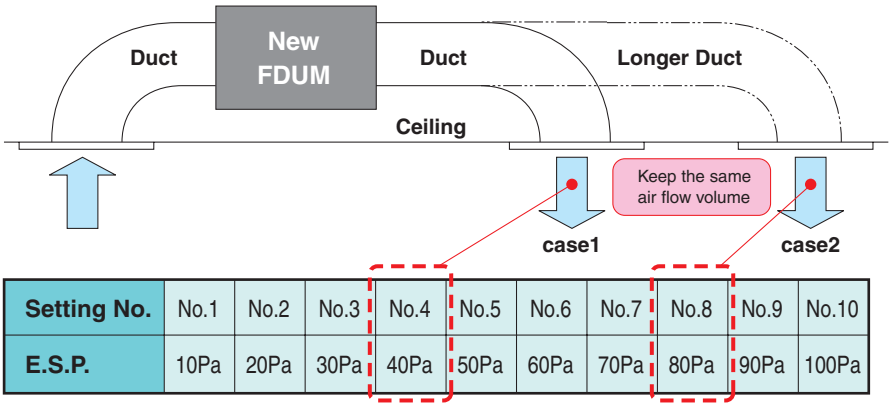
## DUCT CONNECTED -Middle Static pressure-
# FDUM

NEW

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

Duct design was simplified.
Using DC motor, the most optimum air flow volume can be achieved by this automatic control.

Indoor unit will recognize external static pressure by itself automatically and keep rated air flow volume.




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


RC-E5

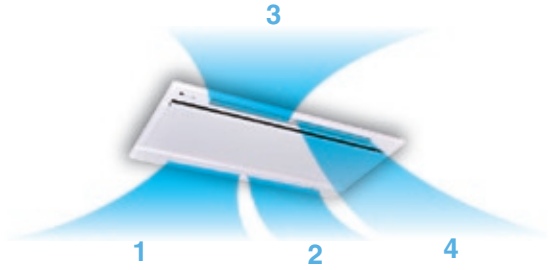
External static pressure (E.S.P.) can be set by E.S.P. button.

## Ceiling Cassette -2 way-
# FDTW

NEW

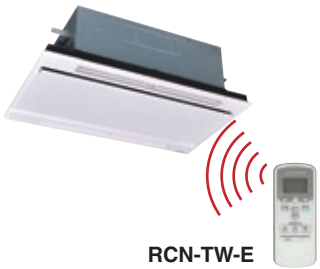
### Individual flap control system

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.




### Wireless remote control

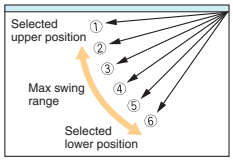
For wireless remote control simply insert the infrared receiver kit on a corner of the panel.



RCN-TW-E

### Flap control system

The flap can swing within the range of upper and lower flap position selected with wired remote control.
(this system is applied for FDT, FDTC, FDTS, FDK, FDEN, and FDFW type also)

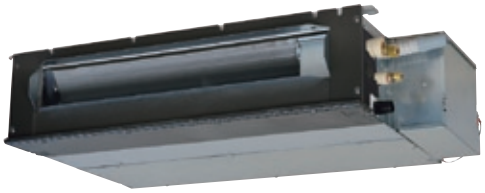



*Wireless remote control and RCH-E3 is not applicable to the Indvidual flap control system and the Flap control system.

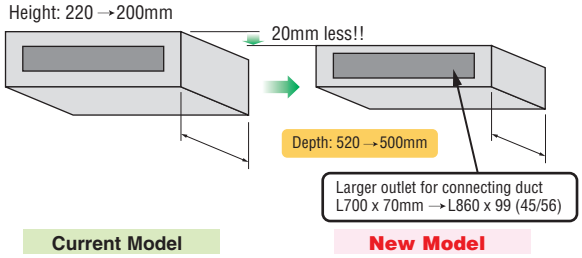
*DUCT CONNECTED (thin) -Low Static pressure-*

# FDUT

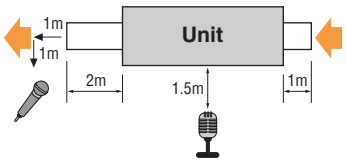
NEW



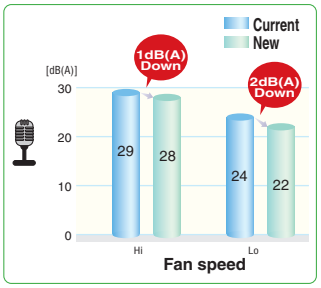
## Compact design <FDUT15~56KXE6F-E>

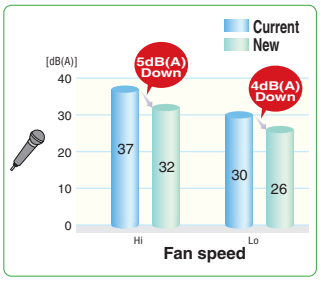



## Lower noise <FDUT28KXE6F-E>

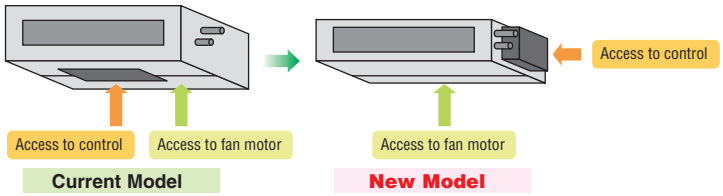



※Measured based on JIS B 8616




## Serviceability



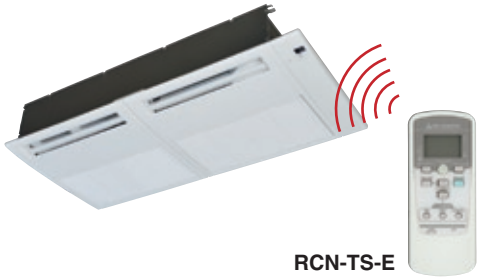

*Ceiling Cassette -1 way-*

# FDTS

NEW

## Wireless remote control

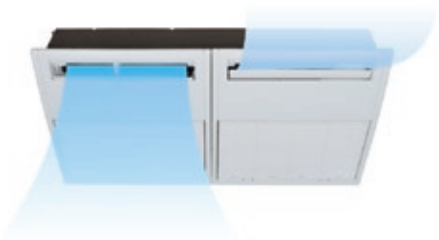
For wireless remote control simply attach an additional panel with infrared receiver on the right side of the main decorative panel.



RCN-TS-E

## Individual flap control system

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

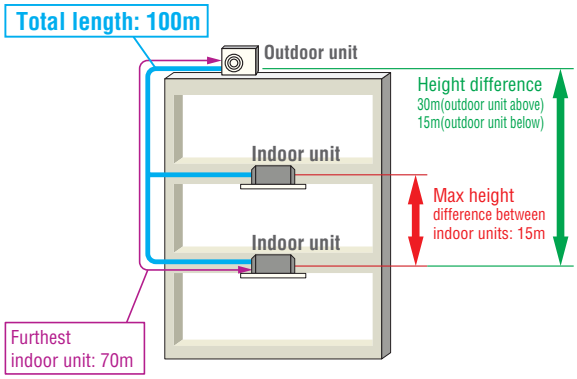


# MicroKX Outdoor units
# Heat pump systems 4, 5, 6hp (11.2kW~15.5kW)

| 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) |

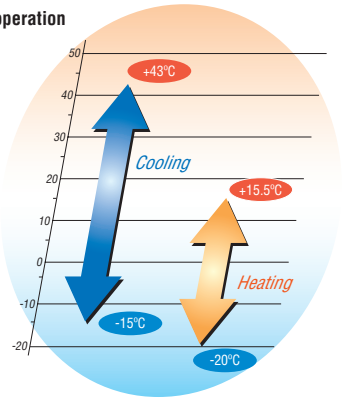

Blue Fin

- 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 8 indoor units/up to 150% capacity.
- High efficiency with COP (in cooling) up to 4.0.
- KX6 employs DC inverter compressors ONLY.
- Industry leading total piping length up to 100m and a maximum pipe run of 70m.




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

**Range of operation**




## Specifications

| Item | | | Model | FDC112KXEN6 | FDC140KXEN6 | FDC155KXEN6 | FDC112KXES6 | FDC140KXES6 | FDC155KXES6 |
|---|---|---|---|---|---|---|---|---|---|
| Nominal horse power | | | | 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 |
| | Heating | | | 12.5 | 16.0 | 16.3 | 12.5 | 16.0 | 16.3 |
| Electrical characteristics | Starting current | | A | 5 | | | | | |
| | Power consumption | Cooling | kW | 2.80 | 4.17 | 4.71 | 2.80 | 4.17 | 4.71 |
| | | Heating | | 2.89 | 4.31 | 4.38 | 2.89 | 4.31 | 4.38 |
| | Running current | Cooling | 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 |
| | | Heating | | 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.

# Refrigerant piping

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

Branch pipes

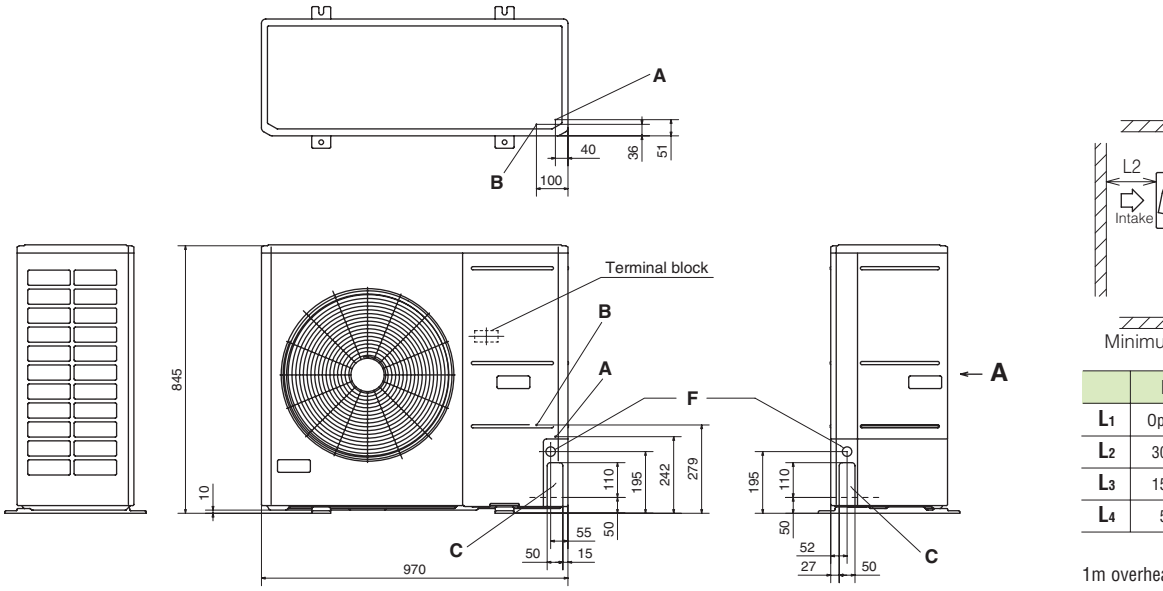
DIS-22-1G/DIS-180-1G

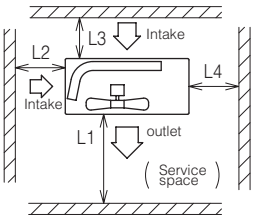
Header pipe

HEAD6-180-1G

# Dimensions

All measurements in mm.

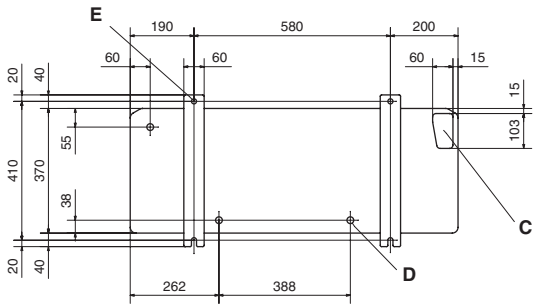


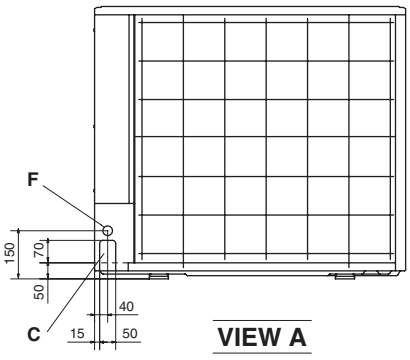




Minimum installation space

| | I | II | II |
|---|---|---|---|
| $L_1$ | Open | Open | 500 |
| $L_2$ | 300 | 5 | Open |
| $L_3$ | 150 | 300 | 150 |
| $L_4$ | 5 | 5 | 5 |

1m overhead clearance required




VIEW A

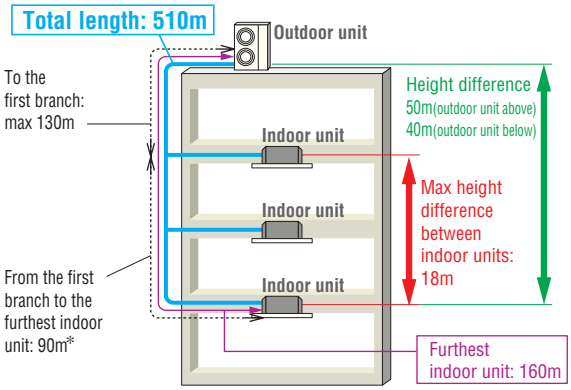
| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | ø15.88 (5/8") (flare) |
| B | Service valve connection (liquid line) | ø9.52 (3/8") (flare) |
| C | Pipe/cable draw-out port | 4 places |
| D | Drain discharge port | ø20 x 3 places |
| E | Anchor bolt hole | M10 x 4 places |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

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

# MicroKX Outdoor units
# Heat pump systems 8, 10, 12hp (22.4kW~33.5kW)

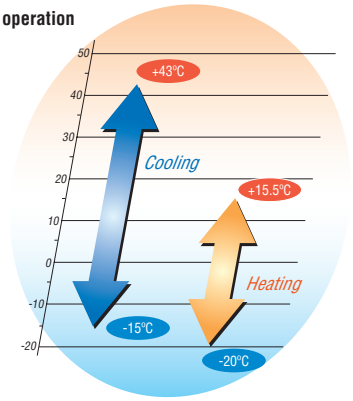
| Model No. | Nominal Cooling Capacity |
|---|---|
| FDC224KXE6G | 22.4kW |
| FDC280KXE6G | 28.0kW |
| FDC335KXE6G | 33.5kW |

- 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 22 indoor units/up to 150% capacity.
- High efficiency with COP (in cooling) up to 4.0.
- KX6 employs DC inverter compressors ONLY.
- Industry leading total piping length up to 510m and a maximum pipe run of 160m.




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

**Range of operation**




## Specifications

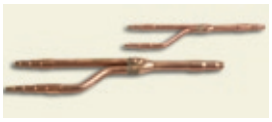
| Item | | | Model | FDC224KXE6G | FDC280KXE6G | FDC335KXE6G |
|---|---|---|---|---|---|---|
| Nominal horse power | | | | 8HP | 10HP | 12HP |
| Power source | | | | 3 Phase 380-415V, 50Hz | | |
| Nominal capacity | Cooling | | kW | 22.4 | 28.0 | 33.5 |
| | Heating | | | 25.0 | 31.5 | 37.5 |
| Electrical characteristics | Starting current | | A | 5 | | |
| | Power consumption | Cooling | kW | 5.60 | 8.09 | 9.82 |
| | | Heating | | 6.03 | 8.21 | 10.12 |
| | Running current | Cooling | A | 9.25-8.47 | 13.22-12.10 | 15.87-14.53 |
| | | Heating | | 9.85-9.02 | 13.41-12.28 | 16.36-14.98 |
| Exterior dimensions | HxWxD | | mm | 1675x1080x480 | | |
| Net weight | | | kg | 221 | | 224 |
| Refrigerant charge | R410A | | kg | 11.5 | | |
| Sound pressure level | Cooling/Heating | | dB(A) | 58/58 | 59/60 | 61/61 |
| Refrigerant piping size | Liquid line | | mm(in) | ø9.52(3/8") | | ø12.7(1/2") |
| | Gas line | | | ø19.05(3/4") | ø22.22(7/8") | ø25.4(1") [ø28.58(1 1/8")] |
| Capacity connection | | | % | 50~150 | | |
| Number of connectable indoor units | | | | 15 | 19 | 22 |

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.

# Refrigerant piping

| Outdoor unit (HP) | | 8 | 10 | 12 |
|---|---|---|---|---|
| Gas pipe | Furthest indoor unit =<90m | ø19.05 | ø22.22 | ø28.58 |
| Liquid pipe | | ø9.52 | | ø12.7 |
| Gas pipe | Furthest indoor unit =<90m | ø22.22 | ø28.58 | |
| Liquid pipe | | ø12.7 | | |

Branch pipes



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

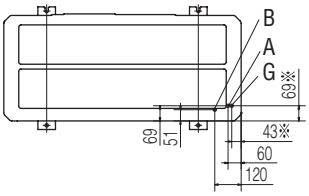
DIS-371-1G

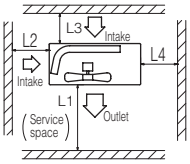
Header pipe

HEAD6-180-1G

# Dimensions

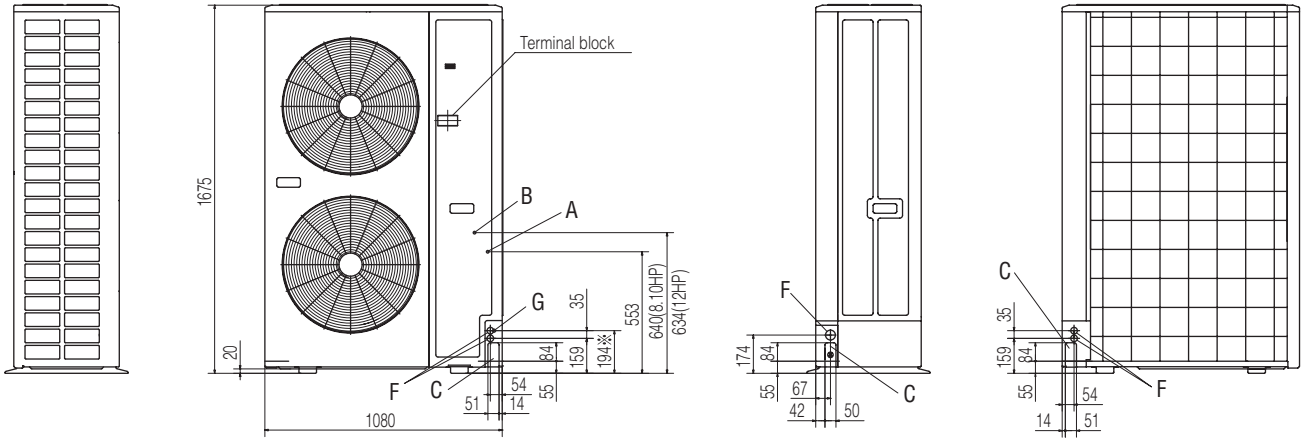
All measurements in mm.

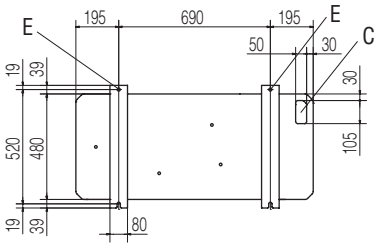


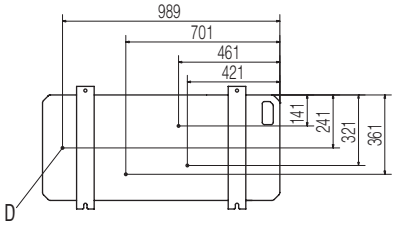




Minimum installation space

| | I | II | II |
|---|---|---|---|
| $L_1$ | Open | Open | 1500 |
| $L_2$ | 300 | 5 | Open |
| $L_3$ | 300 | 300 | 300 |
| $L_4$ | 5 | 5 | 5 |




| Mark | Item | FDC224KXE6G | FDC280KXE6G | FDC335KXE6G |
|---|---|---|---|---|
| A | Service valve connection of the attached connecting pipe (gas side) | ø19.05 (3/4") (Flare) | ø19.05 (3/4") (Flare) | ø19.05 (3/4") (Flare) |
| B | Service valve connection (liquid side) | ø9.52 (3/8") (Flare) | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| C | Pipe/cable draw-out hole | 4places | 4places | 4places |
| D | Drain discharge hole | ø20 x 4places | ø20 x 4places | ø20 x 4places |
| E | Anchor bolt hole | M10 x 4places | M10 x 4places | M10 x 4places |
| F | Cable draw-out hole | ø30 x 2places (front)<br>ø45 (side)<br>ø30 x 2places (back) | ø30 x 2places (front)<br>ø45 (side)<br>ø30 x 2places (back) | ø30 x 2places (front)<br>ø45 (side)<br>ø30 x 2places (back) |
| G | Connecting position of the local pipe. (gas side) | ø19.05 (3/4")(Brazing) | ø22.22 (7/8")(Brazing) | ø25.4 (1")(Brazing) |

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

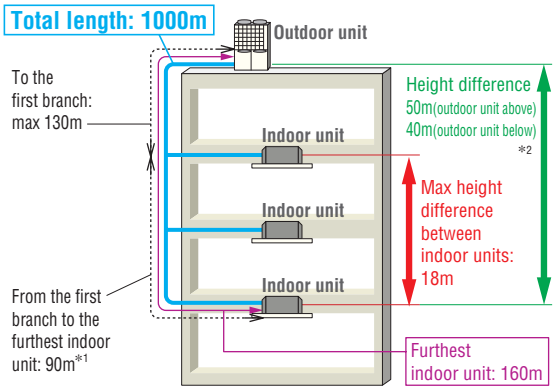
# KX6 Outdoor units
# Heat pump systems 14, 16hp (40.0kW~45.0kW)

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDC400KXE6 | 40.0kW |
| FDC450KXE6 | 45.0kW |

Blue Fin

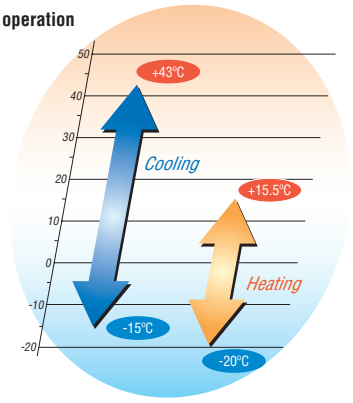
Uniform footprint of models (14,16hp) allows continuous side-by-side installation

- 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 40 indoor units/up to 200% capacity.
- High efficiency with COP (in cooling) up to 3.6.
- KX6 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.
*2 Height difference up to 100m is possible with High Head series. Please refer to page 80.

**Range of operation**



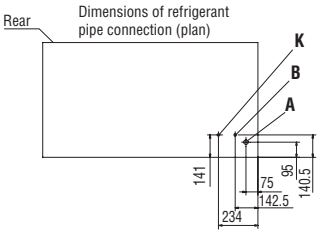

## Specifications

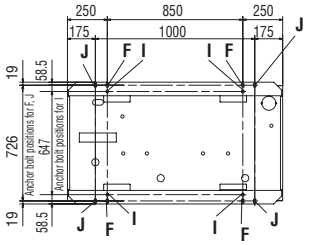
| Item | | | Model | FDC400KXE6 | FDC450KXE6 |
|---|---|---|---|---|---|
| Nominal horse power | | | | 14HP | 16HP |
| Power source | | | | 3 Phase 380-415V, 50Hz | |
| Nominal capacity | Cooling | | kW | 40.0 | 45.0 |
| | Heating | | | 45.0 | 50.0 |
| Electrical characteristics | Starting current | | A | 8 | |
| | Power consumption | Cooling | kW | 11.27 | 12.97 |
| | | Heating | | 11.73 | 13.10 |
| | Running current | Cooling | A | 18.4-16.9 | 21.1-19.3 |
| | | Heating | | 19.6-17.9 | 21.7-19.9 |
| Exterior dimensions | HxWxD | | mm | 1690x1350x720 | |
| Net weight | | | kg | 334 | |
| Refrigerant charge | R410A | | kg | 11.5 | |
| Sound pressure level | Cooling/Heating | | dB(A) | 59.5/60 | 62.5/62.5 |
| Refrigerant piping size | Liquid line | | mm(in) | ø12.7(1/2") | |
| | Gas line | | | ø25.4(1") [ø28.58(1 1/8")] | ø28.58(1 1/8") |
| Capacity connection | | | % | 50~200 | |
| Number of connectable indoor units | | | | 53 | 60 |

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.

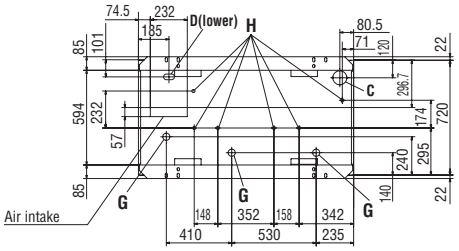
# Dimensions

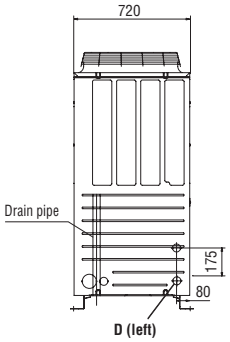
All measurements in mm.

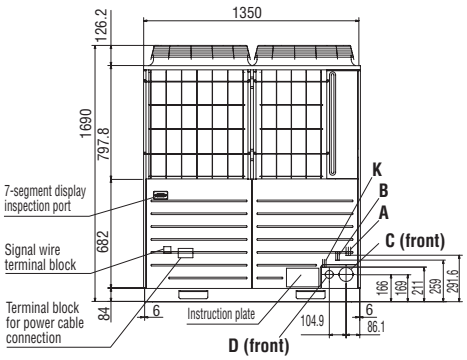


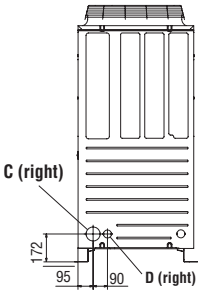



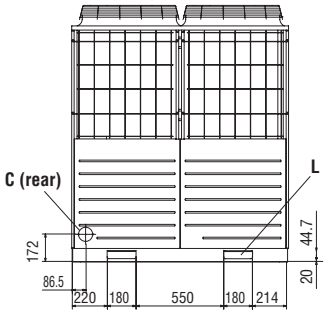

For dimensions of anchor bolt hole



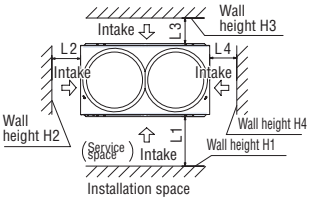




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø88 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K* | Oil-equalising pipe joint | ø3/8" flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

*14, 16HP models only

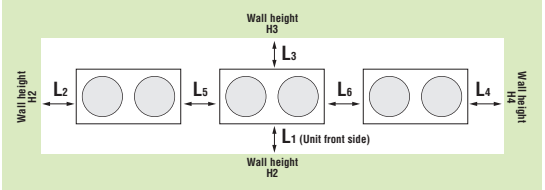
| Installation example | | |
|---|---|---|
| Dimensions | 1 | 2 |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $H_1$ | 1500 | – |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | – |




2m overhead clearance required

Notes:
(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked "L J" (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination. (For 14,16Hp only)

**When more than one unit is installed**



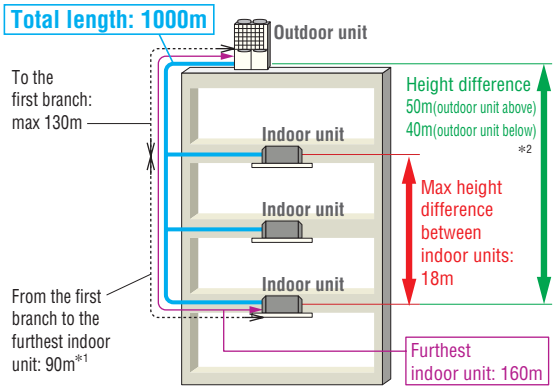

| Installation example | | |
|---|---|---|
| Dimensions | A | B |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $L_5$ | 0 | 400 |
| $L_6$ | 0 | 400 |
| $H_1$ | 1500 | No restrictions |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | No restrictions |

# KX6 Outdoor units
# Heat pump systems 18, 20, 22, 24hp (50.4kW~68.0kW)

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDC504KXE6 | 50.4kW |
| FDC560KXE6 | 56.0kW |
| FDC615KXE6 | 61.5kW |
| FDC680KXE6 | 68.0kW |

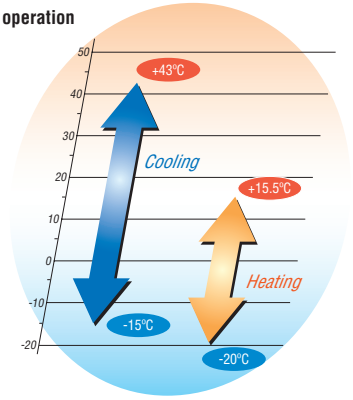
- The KX6 heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 49 indoor units/up to 160% capacity.
- High efficiency with COP (in cooling) up to 3.4.
- KX6 employs DC inverter compressors ONLY.
- Industry leading total piping length up to 1000m and a maximum pipe run of 160m.

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




*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m.
*2 Height difference up to 100m is possible with High Head series. Please refer to page 80.

**Range of operation**



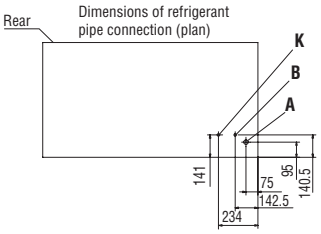

## Specifications

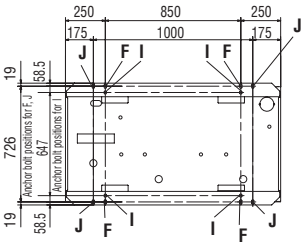
| Item | | | Model | FDC504KXE6 | FDC560KXE6 | FDC615KXE6 | FDC680KXE6 |
|---|---|---|---|---|---|---|---|
| Nominal horse power | | | | 18HP | 20HP | 22HP | 24HP |
| Power source | | | | 3 Phase 380-415V, 50Hz | | | |
| Nominal capacity | Cooling | | kW | 50.4 | 56.0 | 61.5 | 68.0 |
| | Heating | | | 56.5 | 63.0 | 69.0 | 73.0 |
| Electrical characteristics | Starting current | | A | 8 | | | |
| | Power consumption | Cooling | kW | 14.73 | 16.79 | 20.37 | 24.98 |
| | | Heating | | 15.12 | 16.79 | 18.48 | 19.08 |
| | Running current | Cooling | A | 24.1-22.0 | 27.4-25.1 | 33.1-30.3 | 40.3-36.9 |
| | | Heating | | 25.2-23.1 | 28.0-25.7 | 30.7-28.1 | 31.6-29.0 |
| Exterior dimensions | HxWxD | | mm | 2048x1350x720 | | | |
| Net weight | | | kg | 356 | | 375 | |
| Refrigerant charge | R410A | | kg | 11.5 | | | |
| Sound pressure level | Cooling/Heating | | dB(A) | 61.5/62.0 | 63.0/63.5 | 64.5/64.0 | 65.0/65.0 |
| Refrigerant piping size | Liquid line | | mm(in) | ø12.7(1/2") | | | |
| | Gas line | | | ø28.58(1 1/8") | | | |
| Capacity connection | | | % | 50~160 | | | |
| Number of connectable indoor units | | | | 53 | 59 | 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.

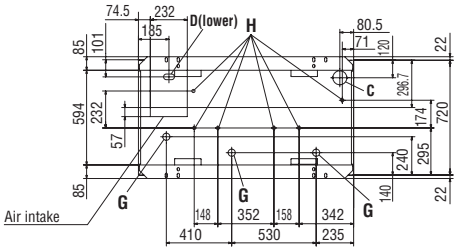
# Dimensions

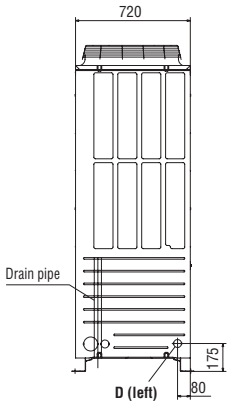
All measurements in mm.

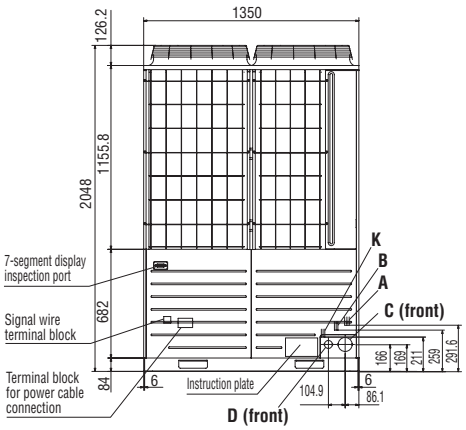


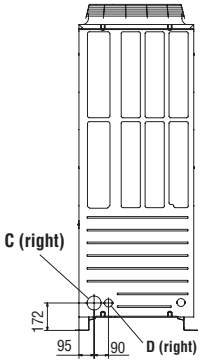



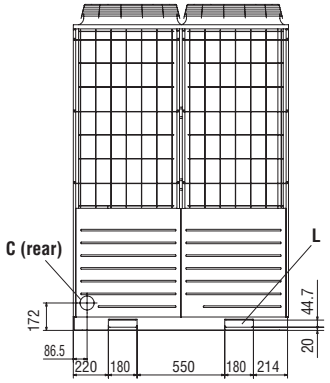

For dimensions of anchor bolt hole



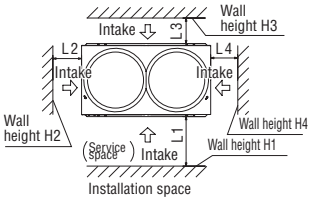




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø100 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K | Oil-equalising pipe joint | ø9.52 flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

| Installation example | | |
|---|---|---|
| Dimensions | 1 | 2 |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $H_1$ | 1500 | – |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | – |



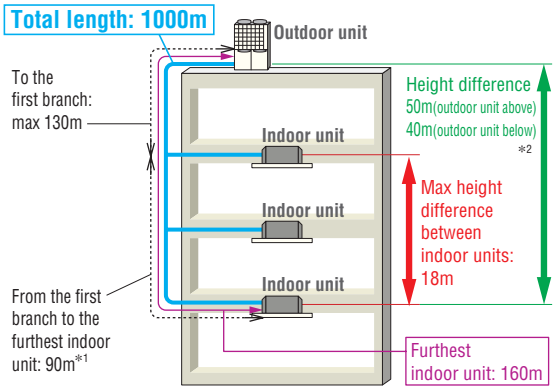

2m overhead clearance required

Notes:
(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked “L J” (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination.

# KX6 Outdoor units
# Heat pump combination systems
# 26, 28, 30, 32hp (73.5kW~90.0kW)

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDC735KXE6 (FDC335-K+FDC400) | 73.5kW |
| FDC800KXE6 (FDC400x2) | 80.0kW |
| FDC850KXE6 (FDC400+FDC450) | 85.0kW |
| FDC900KXE6 (FDC450x2) | 90.0kW |

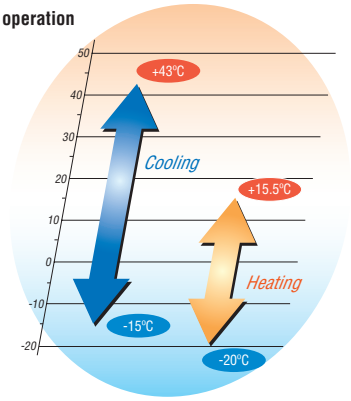
- The KX6 heat pump 2-pipe systems offer high performance VRF for applications that require either cooling only or heating only, ideal for open plan areas.
- Connect up to 65 indoor units/up to 160% capacity.
- High efficiency with COP (in cooling) up to 3.6.
- KX6 employs DC inverter compressors ONLY.
- 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.
*2 Height difference up to 100m is possible with High Head series. Please refer to page 80.

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

**Range of operation**



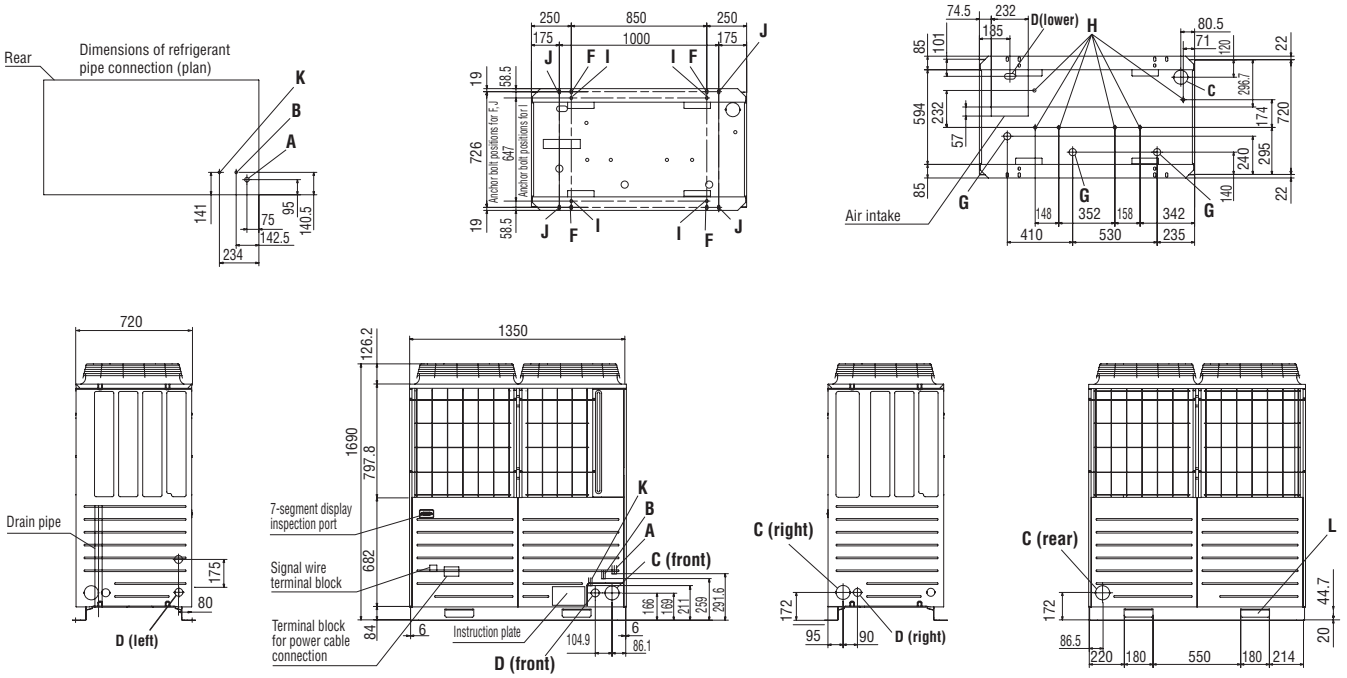

## Specifications

| Item | | | Model | FDC735KXE6 | FDC800KXE6 | FDC850KXE6 | FDC900KXE6 |
|---|---|---|---|---|---|---|---|
| Combination (FDC) | | | | 335KXE6-K | 400KXE6 | 400KXE6 | 450KXE6 |
| | | | | 400KXE6 | 400KXE6 | 450KXE6 | 450KXE6 |
| 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 |
| | Heating | | | 82.5 | 90.0 | 95.0 | 100.0 |
| Electrical characteristics | Starting current | | A | 16 | | | |
| | Power consumption | Cooling | kW | 20.21 | 22.54 | 24.24 | 25.94 |
| | | Heating | | 20.66 | 23.46 | 24.83 | 26.20 |
| | Running current | Cooling | A | 32.9-30.2 | 36.8-33.8 | 39.5-36.2 | 42.2-38.6 |
| | | Heating | | 34.4-31.4 | 39.2-35.8 | 41.3-37.8 | 43.4-39.8 |
| Exterior dimensions | HxWxD | | mm | 1690x2700x720 | | | |
| Net weight | | | kg | 334x2 | | | |
| Refrigerant charge | R410A | | kg | 11.5x2 | | | |
| Refrigerant piping size | Liquid line | | mm(in) | ø15.88(5/8") | | | |
| | Gas line | | | ø31.8(1 1/4") [ø34.92(1 3/8")] | | | |
| Capacity connection | | | % | 50~160 | | | |
| Number of connectable indoor units | | | | 78 | 80 | 80 | 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.

# Dimensions

All measurements in mm.




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø88 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K | Oil-equalising pipe joint | ø3/8" flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

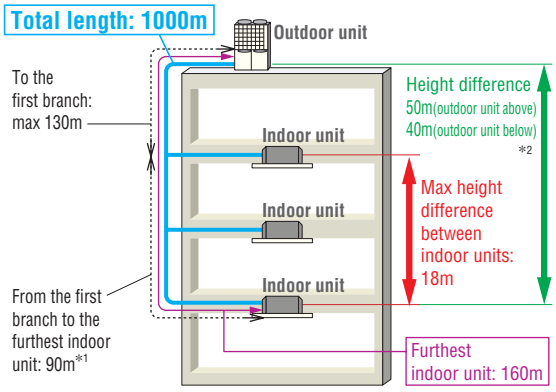
Notes:

(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked “L J” (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination.

# KX6 Outdoor units
# Heat pump combination systems
# 34, 36, 38, 40, 42, 44, 46, 48hp (96.0kW~136.0kW)

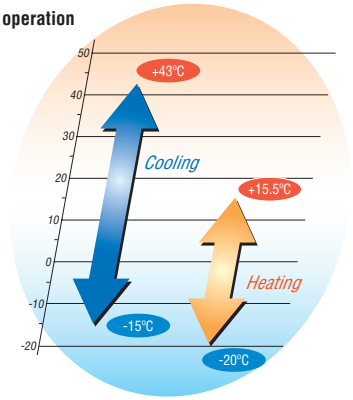
| Model No. | Nominal Cooling Capacity |
|---|---|
| FDC960KXE6 (FDC450+FDC504) | 96.0kW |
| FDC1010KXE6 (FDC504x2) | 101.0kW |
| FDC1065KXE6 (FDC504+FDC560) | 106.5kW |
| FDC1130KXE6 (FDC560x2) | 113.0kW |
| FDC1180KXE6 (FDC560-K+FDC615) | 118.0kW |
| FDC1235KXE6 (FDC615x2) | 123.5kW |
| FDC1300KXE6 (FDC615+FDC680) | 130.0kW |
| FDC1360KXE6 (FDC680x2) | 136.0kW |

- 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 80 indoor units/up to 130% (960KXE6:160%) capacity.
- High efficiency with COP (in cooling) up to 3.5.
- KX6 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.
*2 Height difference up to 100m is possible with High Head series. Please refer to page 80.

**Range of operation**



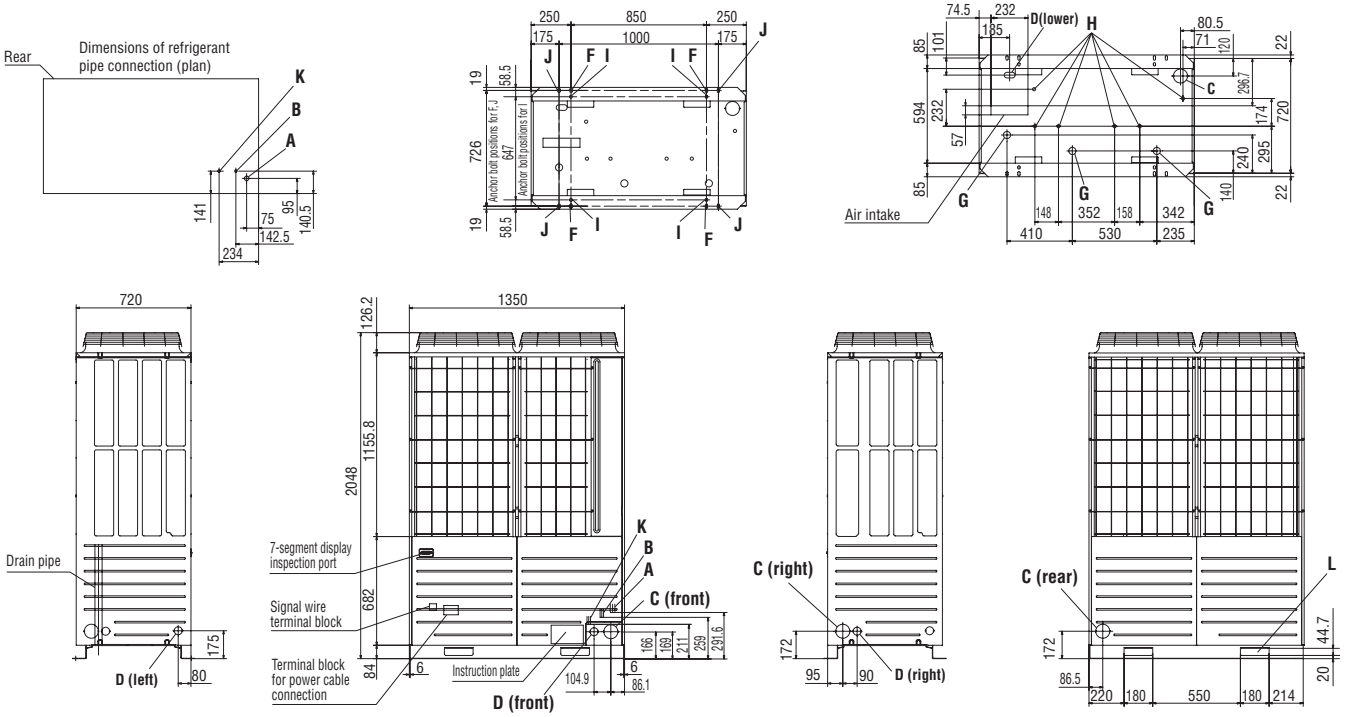

## Specifications

| Item | | | Model | FDC960KXE6 | FDC1010KXE6 | FDC1065KXE6 | FDC1130KXE6 | FDC1180KXE6 | FDC1235KXE6 | FDC1300KXE6 | FDC1360KXE6 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Combination (FDC) | | | | 450KXE6 | 504KXE6 | 504KXE6 | 560KXE6 | 560KXE6-K | 615KXE6 | 615KXE6 | 680KXE6 |
| | | | | 504KXE6 | 504KXE6 | 560KXE6 | 560KXE6 | 615KXE6 | 615KXE6 | 680KXE6 | 680KXE6 |
| Nominal horse power | | | | 34HP | 36HP | 38HP | 40HP | 42HP | 44HP | 46HP | 48HP |
| Power source | | | | 3 Phase 380-415V, 50Hz | | | | | | | |
| Nominal capacity | Cooling | | kW | 96.0 | 101.0 | 106.5 | 113.0 | 118.0 | 123.5 | 130.0 | 136.0 |
| | Heating | | | 108.0 | 113.0 | 119.5 | 127.0 | 132.0 | 138.0 | 142.0 | 146.0 |
| Electrical characteristics | Starting current | | A | 16 | | | | | | | |
| | Power consumption | Cooling | kW | 27.70 | 29.46 | 31.52 | 33.58 | 37.16 | 40.74 | 45.35 | 49.96 |
| | | Heating | | 28.22 | 30.24 | 31.91 | 33.58 | 35.27 | 36.96 | 37.56 | 38.16 |
| | Running current | Cooling | A | 45.2-41.3 | 48.2-44.0 | 51.5-47.1 | 54.8-50.2 | 60.5-55.4 | 66.2-60.6 | 73.4-67.2 | 80.6-73.8 |
| | | Heating | | 46.9-43.0 | 50.4-46.2 | 53.2-48.8 | 56.0-51.4 | 58.7-53.8 | 61.4-56.2 | 62.3-57.1 | 63.2-58.0 |
| Exterior dimensions | HxWxD | | mm | 2048x2700x720 | | | | | | | |
| Net weight | | | kg | 334+356 | 356x2 | | | 375x2 | | | |
| Refrigerant charge | R410A | | kg | 11.5x2 | | | | | | | |
| Refrigerant piping size | Liquid line | | mm(in) | ø15.88(5/8") | | ø19.05(3/4") | | | | | |
| | Gas line | | | ø34.92(1 3/8") | | | | | | | |
| Capacity connection | | | % | 50~160 | 50~130 | | | | | | |
| Number of connectable indoor units | | | | 80 | | | | | | | |

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 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.

# Dimensions

All measurements in mm.




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø100 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K | Oil-equalising pipe joint | ø9.52 flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

Notes:

(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked “L J” (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination.

# KX6 refrigerant piping

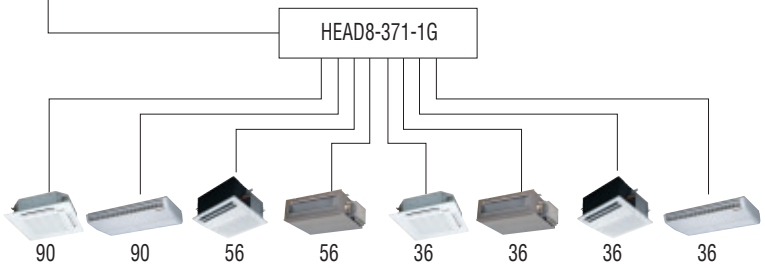
**Installation of Interconnecting Pipework**
Mitsubishi KX6 equipment is manufactured to the highest standards of quality and reliability. It is imperative the method of installation and the materials used are also to high standards, to ensure trouble free operation and long term reliability.
The interconnecting 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 E378:2000.
All brazed joints shall be made with dry nitrogen purge to ensure the prevention of oxidisation to the internal surface of the copper pipes.
The ingress of moisture, dirt and any other contaminants to the interior of the copper pipes, and air conditioning units, must be prevented during the installation procedure.
After the installation of pipework, prior to the connection of the outdoor units, and sealing of insulation joints, the pipework must be pressure tested for leakage, using dry nitrogen.

**Additional Refrigerant**
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 manufacturerís data, based on the length and diameter of each section of the liquid refrigerant pipework of the system.

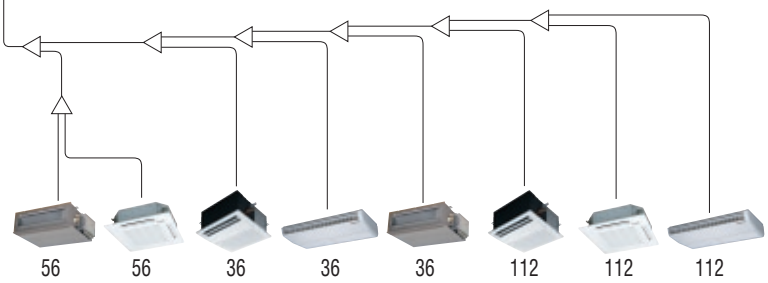
# Single outdoor unit piping examples:

**Piping arrangement using header**





**Piping arrangement using branch pipe kits**



# KX6 refrigerant piping

Pipe sizes applicable to European installations.

| Outdoor unit (HP) | | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 | 42 | 44 | 46 | 48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Liquid pipe | Furthest indoor unit =<90m | ø9.52 | | ø12.7 | | | | | | | ø15.88 | | | | | | ø19.05 | | | | | |
| Gas pipe | | ø19.05 | ø22.22 | ø28.58 | | | | | | | ø34.92 | | | | | | | | | | | |
| Liquid pipe | Furthest indoor unit =>90m | ø12.7 | | | | | ø15.88 | | | | ø19.05 | | | | | | ø22.22 | | | | | |
| Gas pipe | | ø22.22 | | ø28.58 | | | | | | | ø34.92 | | | | | | | | | | | |

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

| mm | inch |
|---|---|
| ø28.58 | $1^{1/8}$" |
| ø31.8 | $1^{1/4}$" |
| ø34.92 | $1^{3/8}$" |
| ø38.1 | $1^{1/2}$" |
| ø44.5 | $1^{3/4}$" |
| ø50.8 | 2" |

Branch pipes

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

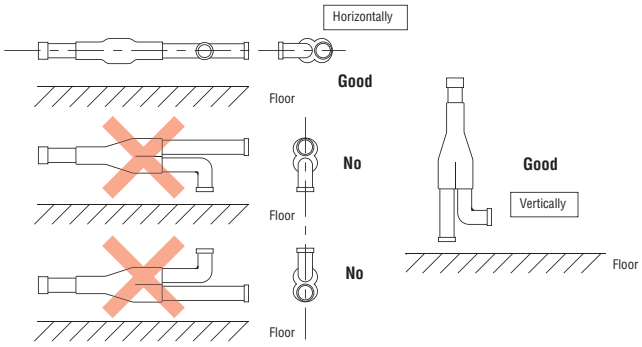
**DIS-371-1G/DIS-540-2G**

Header pipe

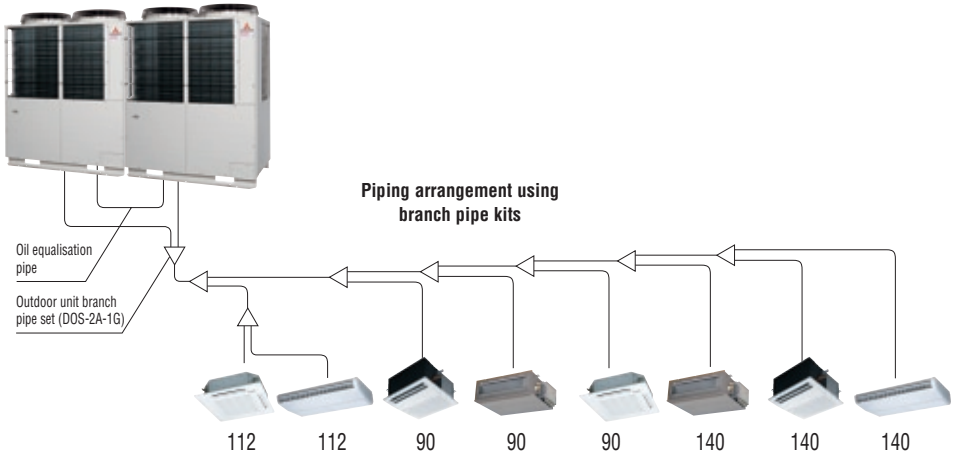
**HEAD6-180-1G**

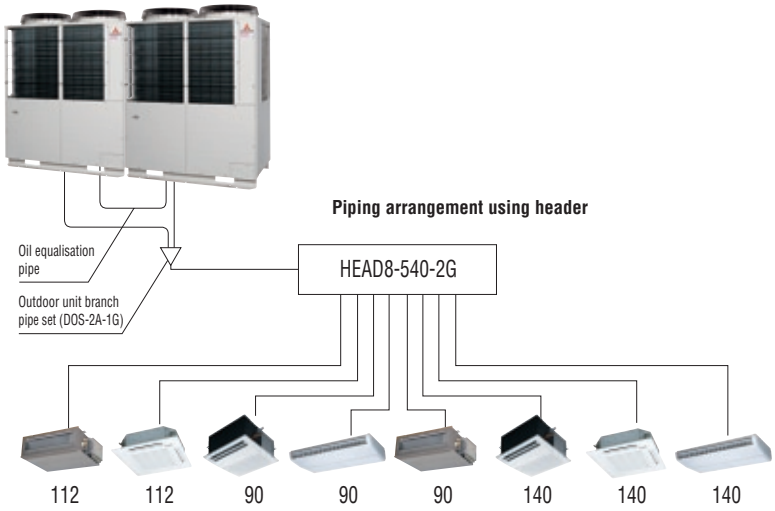
Combination outdoor unit manifold

**DOS-2A-1G**




# Combination outdoor unit piping examples:




Outdoor unit's branching piping

| Outdoor unit | Branch piping set |
|---|---|
| 2 units (for 735~1360) | DOS-2A-1G |

Indoor unit's first branching piping

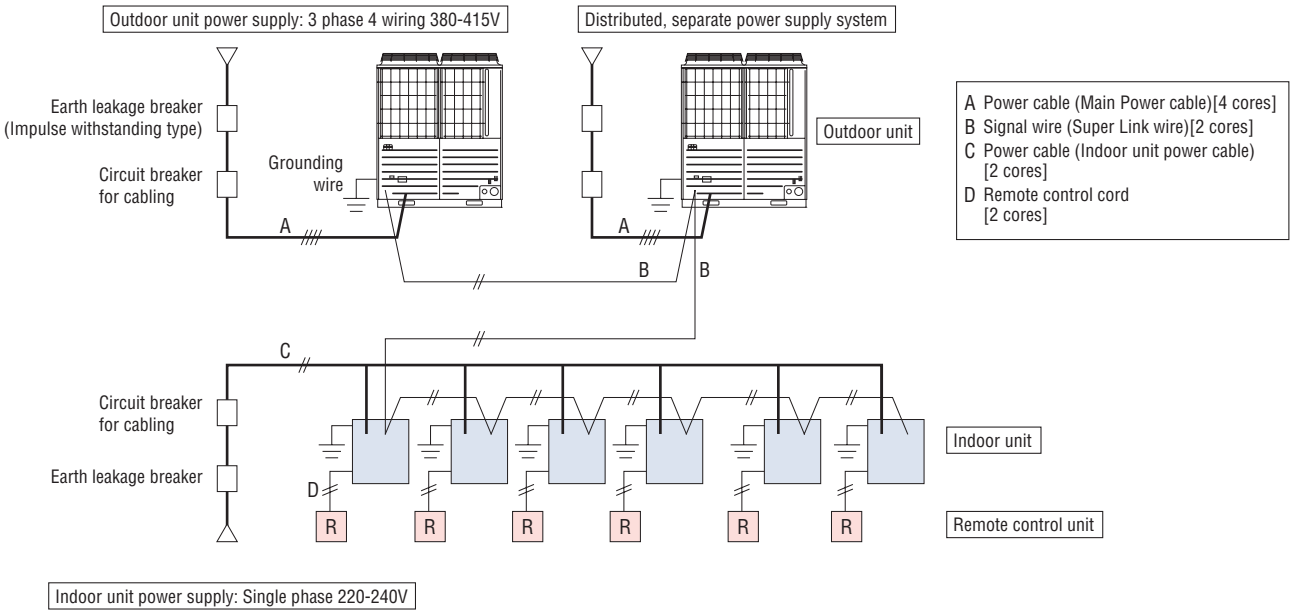
| Total capacity of indoor units | Branch piping set | Header set | |
|---|---|---|---|
| | | Model | Branches |
| ~179 | DIS-22-1G | HEAD4-22-1G | Max 4 branches |
| 180~370 | DIS-180-1G | HEAD6-180-1G | Max 6 branches |
| 371~539 | DIS-371-1G | HEAD8-371-1G | Max 8 branches |
| 540~ | DIS-540-2G |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

# KX6 electrical wiring – power supply

KX6 new design includes greatly simplified wiring requirements utilising a 'polarity-free' two wire control loop connecting the indoor units.

**Power wiring**

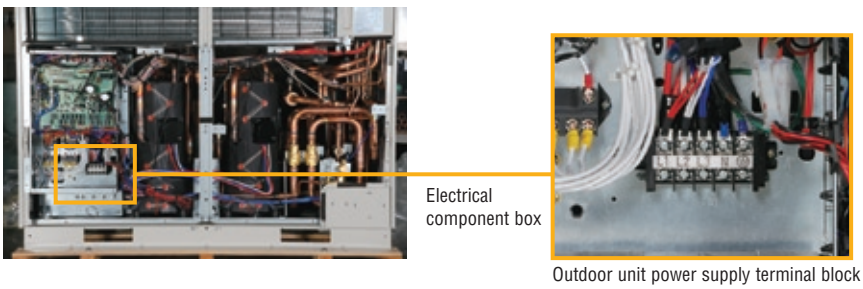
Cables can be laid through the front, right, left or bottom of the outdoor unit casing.
Separate power supplies should be used for the outdoor unit (3/phase) and the indoor units (1/phase).
Only control wiring is connected from outdoor to indoor unit.




**CAUTION**

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

KX6 outdoor unit mechanical compartment



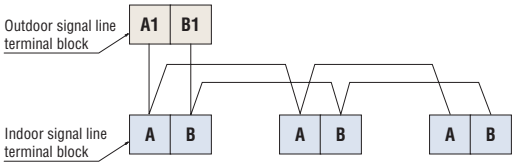
# KX6 electrical wiring – control wiring

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

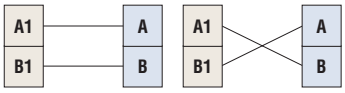
| | 0.75mm² | 1.25mm² |
|---|---|---|
| ~1000m | YES | YES |
| 1000~1500m | YES | NO |

3. We recommend 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.

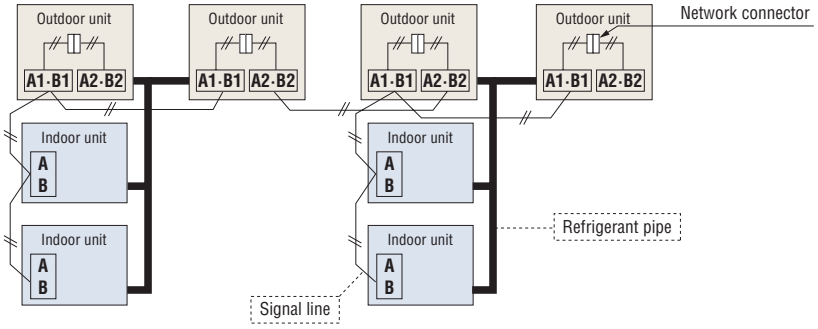
(1) When one outdoor unit is used




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



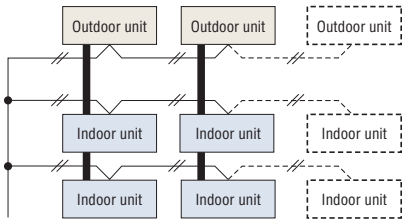

(2) When plural outdoor units are used



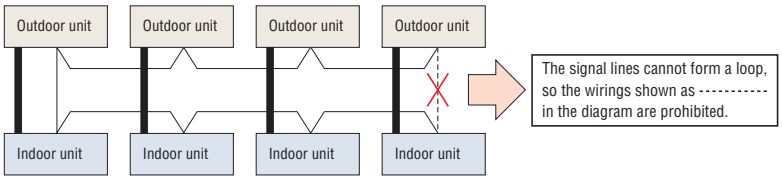

(a) The maximum number of indoor units that can be connected in a system is 128 and it is possible to configure outdoor units and/or indoor units as an outdoor or indoor unit group connected with each other with two wires.

(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.



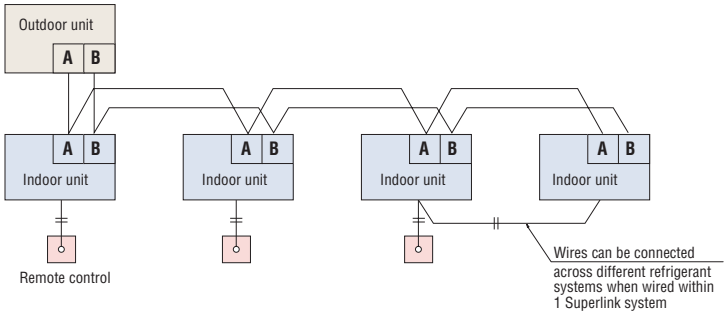

**Important** ○ Loop wiring prohibited




# Remote control wiring specifications

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

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



# Indoor units
## Ceiling Cassette -4way- FDT

**Model No.**

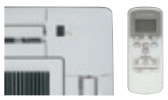
FDT28KXE6F
FDT36KXE6F
FDT45KXE6F
FDT56KXE6F
FDT71KXE6F
FDT90KXE6F
FDT112KXE6F
FDT140KXE6F
FDT160KXE6F

**Remote control (option)**

Wired

RC-EX1A RC-E5 RCH-E3

Wireless

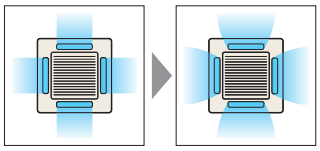


RCN-T-36W-E

### Individual flap control system

According to room temperature conditions, four directions of air flow can be controlled by individual flap as preferred.
As individual flap control is available even after installation, installation area became wider than before.

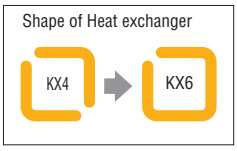
Due to optimization of outlet design of air flow with our new advanced technology, sufficient air flow is secured and long reach of air flow is realized.



KX4 KX6

### The thinnest design

Thanks to new design of heat exchanger changed from 2 parts to 1 part, the height of indoor unit is reduced drastically.
Furthermore applying DC fan motors to FDT models, the highest energy efficiency level, reduction of weight and significant compact design are realized.

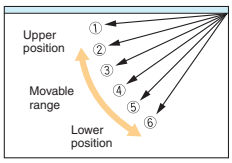




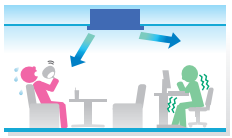
### Flap control system

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

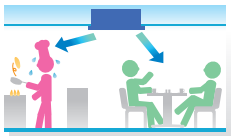
*RCH-E3 is not applicable to the Individual flap control system and the Flap control system.




for person who is far from the indoor unit



for both persons who are feeling hot or cold



can cool both the kitchen and the guests

## Specifications

| Item | | Model | FDT28KXE6F | FDT36KXE6F | FDT45KXE6F | FDT56KXE6F | FDT71KXE6F | FDT90KXE6F | FDT112KXE6F | FDT140KXE6F | FDT160KXE6F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 0.03-0.03 | | | 0.04-0.04 | 0.08-0.08 | 0.15-0.15 | | | |
| | Heating | | 0.03-0.03 | | | 0.04-0.04 | 0.08-0.08 | 0.15-0.15 | | | |
| Sound pressure level※ | | dB(A) | Hi:33 Me:31 Lo:30 | | | | | Hi:40 Me:37 Lo:35 | | Hi:42 Me:40 Lo:37 | Hi:43 Me:41 Lo:38 |
| Exterior dimensions H x W x D | | mm | Unit:246x840x840 Panel:35x950x950 | | | | | Unit:298x840x840 Panel:35x950x950 | | | |
| Net weight | | kg | Unit:22 Panel:5.5 | | | Unit:24 Panel:5.5 | | Unit:27 Panel:5.5 | | | |
| Air flow※ | | CMM | Hi:18 Me:16 Lo:14 | | | | | Hi:27 Me:24 Lo:20 | | Hi:30 Me:27 Lo:23 | |
| Outside air intake | | | Possible | | | | | | | | |
| Panel | | | T-PSA-3BW-E | | | | | | | | |
| Air filter, Q'ty | | | Pocket Plastic net x1 (Washable) | | | | | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-T-36W-E | | | | | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | | | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") | | | |

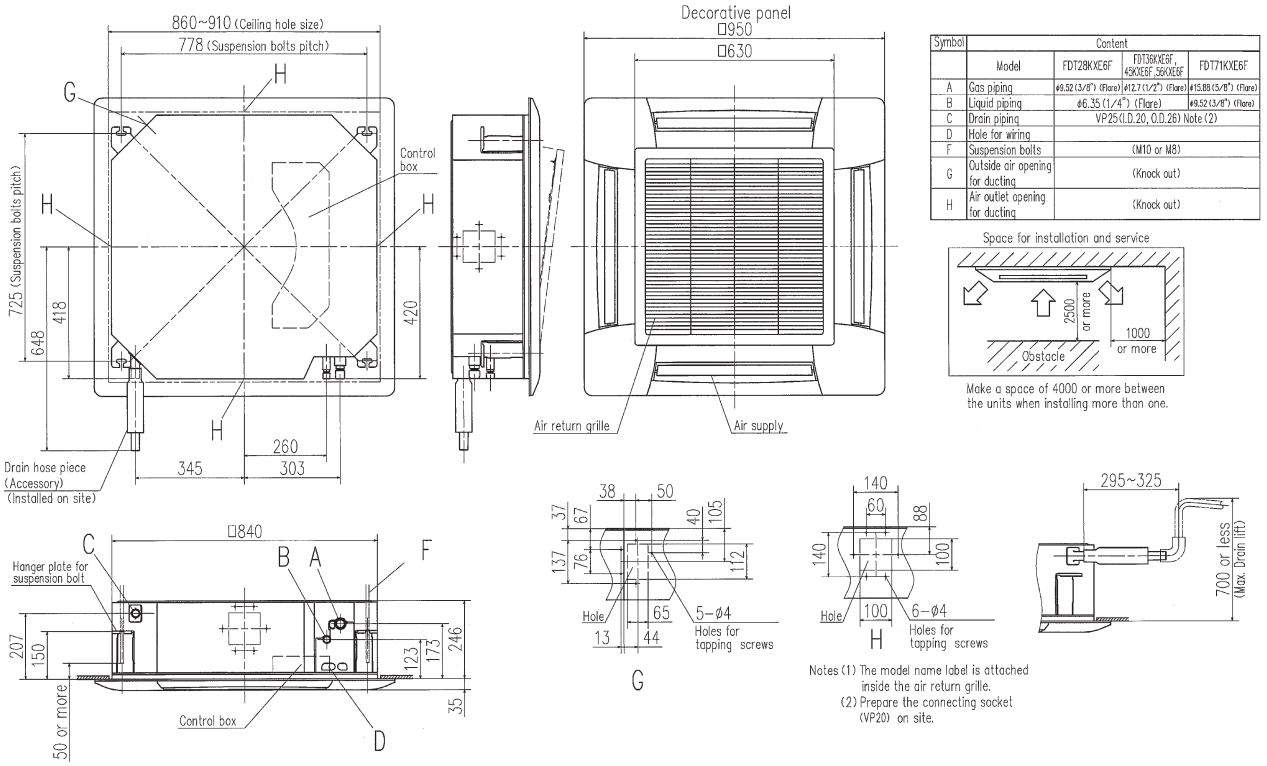
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

※ Powerful-Hi can be selected. Sound pressure level: FDT28/36/45 37dB(A), FDT56 39dB(A), FDT71 46dB(A), FDT90/112/140/160 51dB(A). Air flow: FDT28/36/45/56 20CMM, FDT71 28CMM, FDT90/112/140/160 37CMM.

# Dimensions

All measurements in mm.

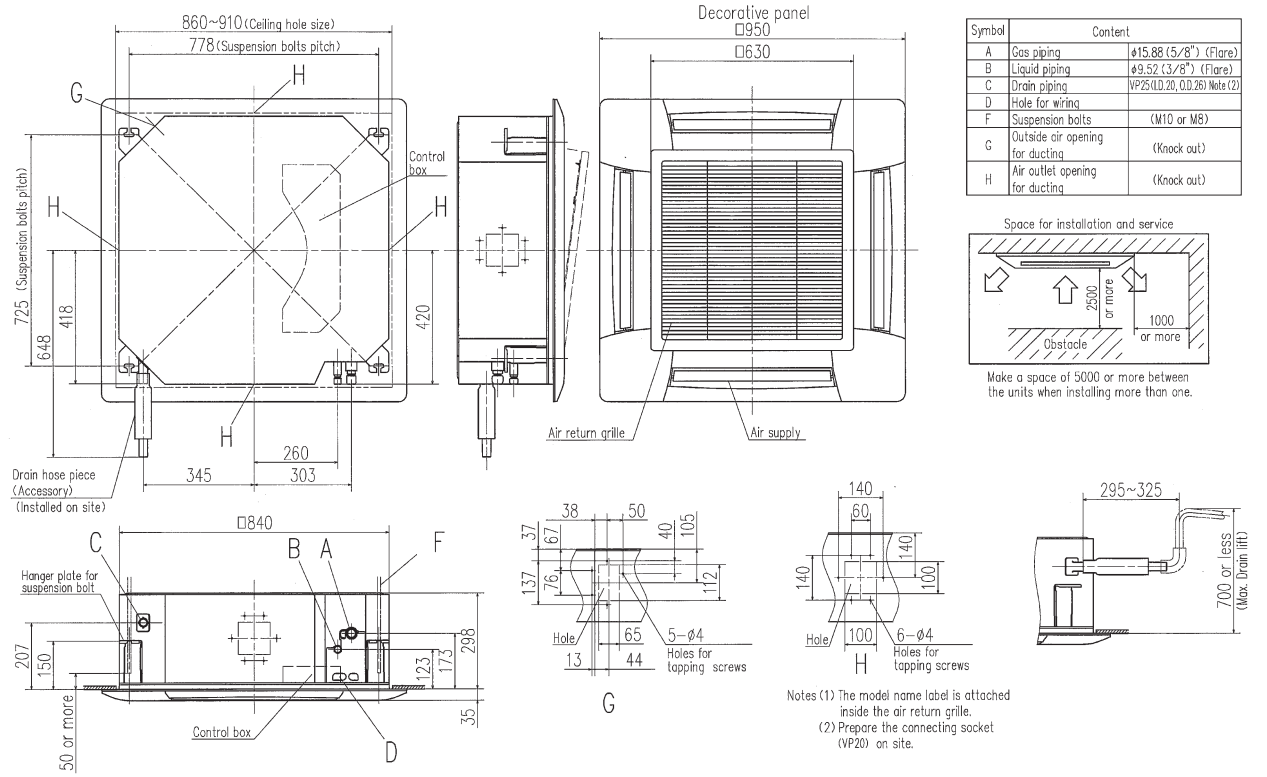
## FDT28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F, 71KXE6F




| Symbol | Content | | | |
|---|---|---|---|---|
| | Model | FDT28KXE6F | FDT36KXE6F, 45KXE6F, 56KXE6F | FDT71KXE6F |
| A | Gas piping | 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 | VP25 (I.D. 20, O.D. 26) Note (2) | | |
| D | Hole for wiring | | | |
| F | Suspension bolts | (M10 or M8) | | |
| G | Outside air opening for ducting | (Knock out) | | |
| H | Air outlet opening for ducting | (Knock out) | | |

Notes (1) The model name label is attached inside the air return grille.
(2) Prepare the connecting socket (VP20) on site.

## FDT90KXE6F, 112KXE6F, 140KXE6F, 160KXE6F




| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C | Drain piping | VP25 (I.D. 20, O.D. 26) Note (2) |
| D | Hole for wiring | |
| F | Suspension bolts | (M10 or M8) |
| G | Outside air opening for ducting | (Knock out) |
| H | Air outlet opening for ducting | (Knock out) |

Notes (1) The model name label is attached inside the air return grille.
(2) Prepare the connecting socket (VP20) on site.

# Ceiling Cassette -4way Compact (600x600mm)- FDTC

**Model No.**

FDTC22KXE6F
FDTC28KXE6F
FDTC36KXE6F
FDTC45KXE6F
FDTC56KXE6F

Fits into standard 600 x 600 ceiling

**Remote control (option)**

Wired

RC-EX1A

RC-E5

RCH-E3

Wireless

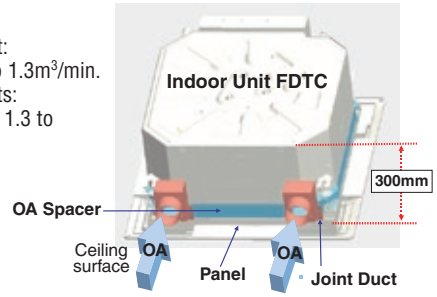
RCN-TC-24W-ER

## Taking OA (Outside Air) into inside

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

Utilizing OA spacer which comes as optional equipment, outside air can be taken into inside.

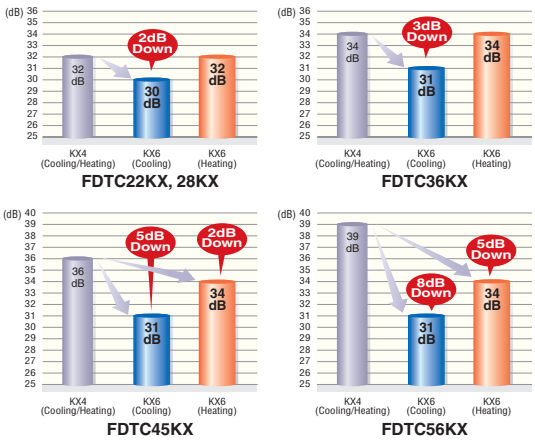
Using 1 joint duct:
OA comes up to 1.3m³/min.
Using 2 joint ducts:
OA comes from 1.3 to 2.6m³/min.




## Individual flap control system

According to room temperature conditions, four directions of air flow can be controlled by individual flap as preferred.
As individual flap control is available even after installation, installation area became wider than before.

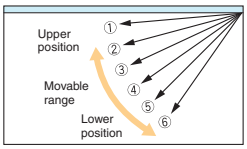
## Quiet operation (Sound level in the Lo mode.)




## Flap control system

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

* RCH-E3 is not applicable to the Individual flap control system and the Flap control system.




# Specifications

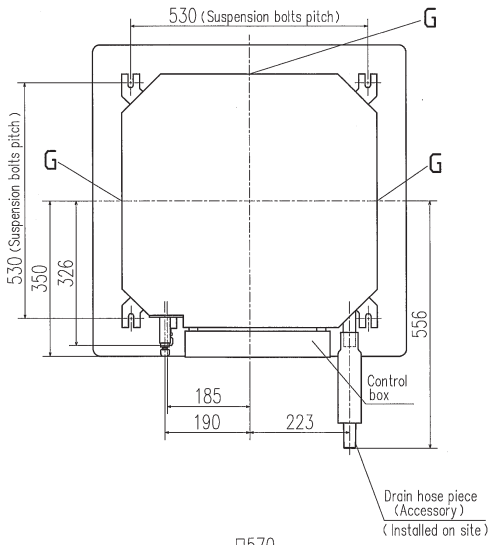
| Item | | Model | FDTC22KXE6F | FDTC28KXE6F | FDTC36KXE6F | FDTC45KXE6F | FDTC56KXE6F |
|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 2.2 | 2.8 | 3.6 | 4.5 | 5.6 |
| Nominal heating capacity | | kW | 2.5 | 3.2 | 4.0 | 5.0 | 6.3 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | |
| Power consumption | Cooling | kW | 0.03-0.03 | | | 0.05-0.05 | |
| | Heating | | 0.03-0.03 | | | 0.05-0.05 | |
| Sound pressure level ※ | Cooling | dB(A) | Hi:35 Me:33 Lo:30 | | Hi:38 Me:36 Lo:31 | Hi:40 Me:37 Lo:31 | Hi:45 Me:39 Lo:31 |
| | Heating | | Hi:35 Me:33 Lo:32 | | Hi:38 Me:36 Lo:34 | Hi:40 Me:37 Lo:34 | Hi:45 Me:39 Lo:34 |
| Exterior dimensions H x W x D | | mm | Unit:248x570x570 Panel:35x700x700 | | | | |
| Net weight | | kg | Unit:14 Panel:3.5 | | Unit:15 Panel:3.5 | | |
| Air flow ※ | Cooling | CMM | Hi:9.5 Me:8.5 Lo:7 | | Hi:10 Me:9 Lo:7 | Hi:11 Me:9 Lo:7 | Hi:13 Me:10 Lo:7 |
| | Heating | | Hi:9.5 Me:8.5 Lo:8 | | Hi:10 Me:9 Lo:8 | Hi:11 Me:9 Lo:8 | Hi:13 Me:10 Lo:8 |
| Outside air intake | | | Not possible | | | | |
| Panel | | | TC-PSA-25W-E | | | | |
| Air filter, Q'ty | | | Pocket Plastic net x1 (Washable) | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-TC-24W-ER | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | |

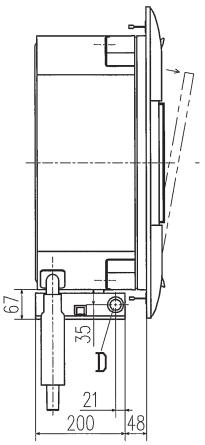
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

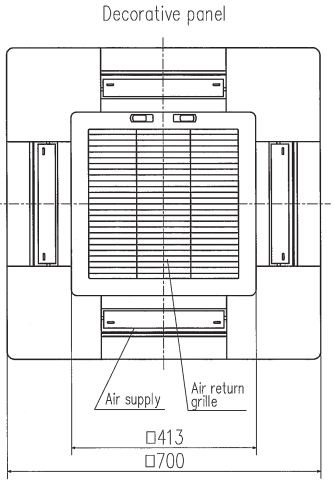
※ Powerful-Hi can be selected. Sound pressure level: FDTC22/28 44dB(A), FDTC36 46dB(A), FDTC45 48dB(A), FDTC56 49dB(A). Air flow: FDTC22/28 12CMM, FDTC36 13CMM, FDTC45 15CMM. FDTC56 16CMM.

# Dimensions

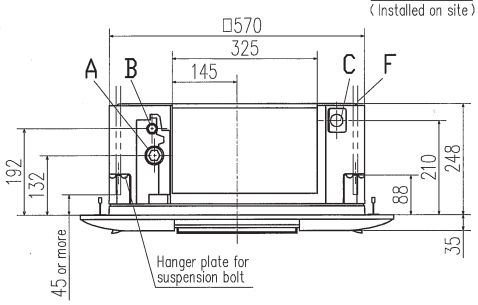
All measurements in mm.

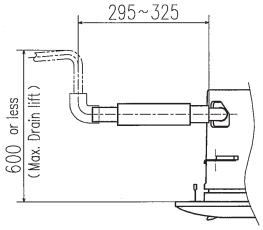


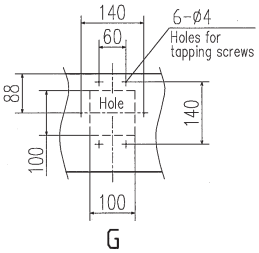



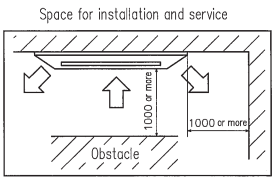




Notes (1) The model name label is attached on the control box lid.
(2) Prepare the connecting socket (VP20) on site.
(3) This unit is designed for 2x2 grid ceiling.
If it is installed on a ceiling other than 2x2 grid ceiling, provide an inspection port on the control box side.



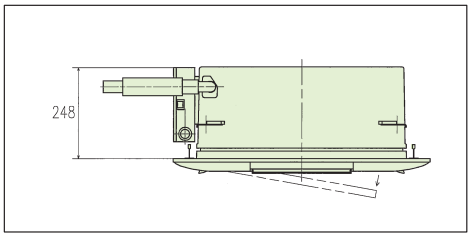



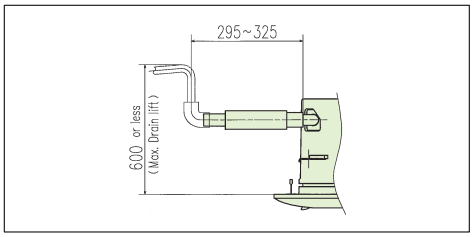

Make a space of 4000 or more between the units when installing more than one.

| Symbol | Content | | |
|---|---|---|---|
| | Model | FDTC22KXE6F, 28KXE6F | FDTC36KXE6F, 45KXE6F, 56KXE6F |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | |
| C | Drain piping | VP20 (I.D.20, O.D.26) Note (2) | |
| D | Hole for wiring | ø25 | |
| F | Suspension bolts | (M10 or M8) | |
| G | Air outlet opening for ducting | (Knock out) | |

Ultra slim design at just 248mm above the ceiling




Condensate drain pump included as standard



# Ceiling Cassette -2way- FDTW

NEW

**Model No.**

| | |
|---|---|
| FDTW28KXE6F | FDTW90KXE6F |
| FDTW45KXE6F | FDTW112KXE6F |
| FDTW56KXE6F | FDTW140KXE6F |
| FDTW71KXE6F | |

FDTW28~71

FDTW90~140

**Remote control (option)**

Wired

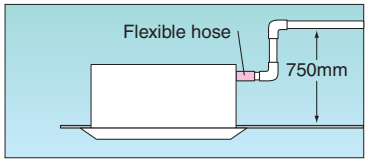
RC-EX1A RC-E5 RCH-E3

Wireless

RCN-TW-E

## 750mm Drain Pump

Drain can be discharged upward by 750mm from the ceiling surface close to the indoor unit.
It allows a piping layout with a high degree of freedom depending on the installation location.



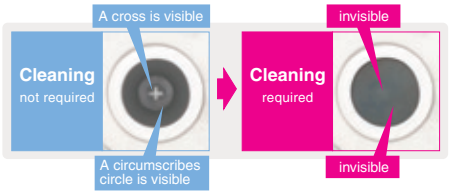

## Installation workability

### Drainage spout

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

### Transparent access hole to drain pan

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




# Specifications

| Item | | Model | FDTW28KXE6F | FDTW45KXE6F | FDTW56KXE6F | FDTW71KXE6F | FDTW90KXE6F | FDTW112KXE6F | FDTW140KXE6F |
|---|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 2.8 | 4.5 | 5.6 | 7.1 | 9.0 | 11.2 | 14.0 |
| Nominal heating capacity | | kW | 3.2 | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | | |
| Power consumption | Cooling | kW | 0.09-0.09 | 0.10-0.10 | | 0.14-0.14 | 0.19-0.19 | | |
| | Heating | | 0.09-0.09 | 0.10-0.10 | | 0.14-0.14 | 0.19-0.19 | | |
| Sound 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 ※ | | CMM | 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-EX1A, RC-E5, RCH-E3 wireless:RCN-TW-E | | | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") | | | |

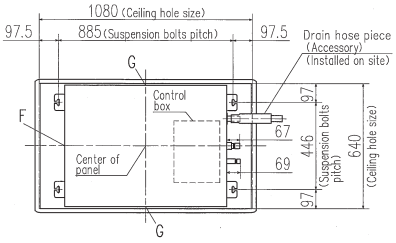
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

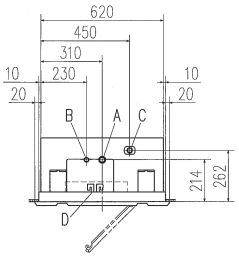
※ Powerful-Hi can be selected. Sound pressure level: FDTW28/45/56/71 42dB(A), FDTW90/112/140 48dB(A). Air flow: FDTW28/45/56/71 14.5CMM, FDTW90/112/140 31CMM.

# Dimensions

All measurements in mm.

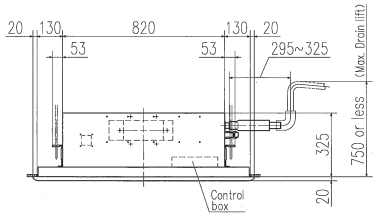
## FDTW28KXE6F, 45KXE6F, 56KXE6F, 71KXE6F

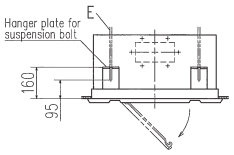


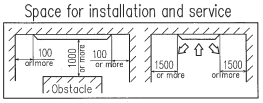

| Symbol | Content | | | |
|---|---|---|---|---|
| | Model | 28 | 45,56 | 71 |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | | ø9.52 (3/8") (Flare) |
| C | Drain piping | VP25 (I.D. 25, O.D. 32) Note(2) | | |
| D | Hole for wiring | | | |
| E | Suspension bolts | (M10) | | |
| F | Outside air opening for ducting | (Knock out) | | |
| G | Air outlet opening for ducting | (Knock out) | | |

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



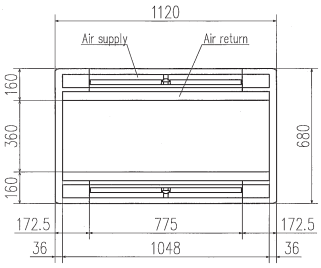




Space for installation and service

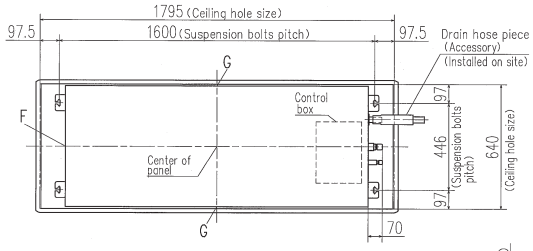


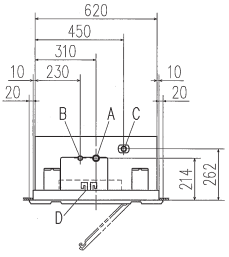

Make a space of 4000 or more between the units when installing more than one.

Decorative panel



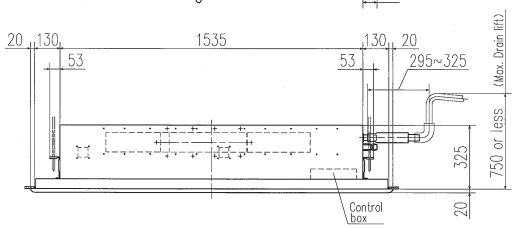

## FDTW90KXE6F, 112KXE6F, 140KXE6F

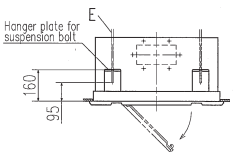


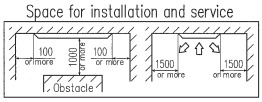

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C | Drain piping | VP25 (I.D. 25, O.D. 32) Note(2) |
| D | Hole for wiring | |
| E | Suspension bolts | (M10) |
| F | Outside air opening for ducting | (Knock out) |
| G | Air outlet opening for ducting | (Knock out) |

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



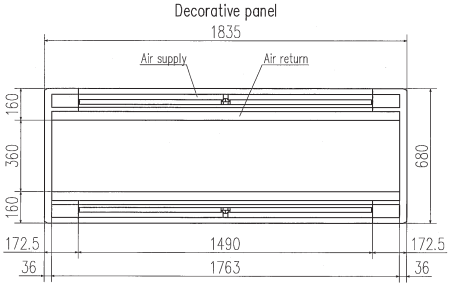




Space for installation and service




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

Decorative panel



# Ceiling Cassette -1way- FDTS

NEW

**Model No.**
FDTS45KXE6F
FDTS71KXE6F

**Remote control (option)**

Wired

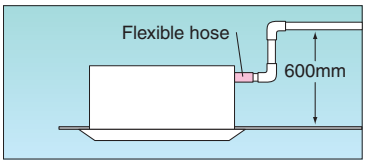
**RC-EX1A RC-E5 RCH-E3**

Wireless

**RCN-TS-E**

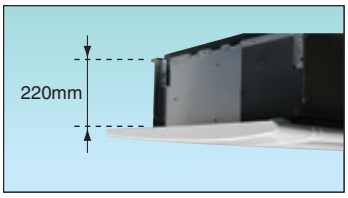
## 600mm Drain Pump

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.




## 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.




# Specifications

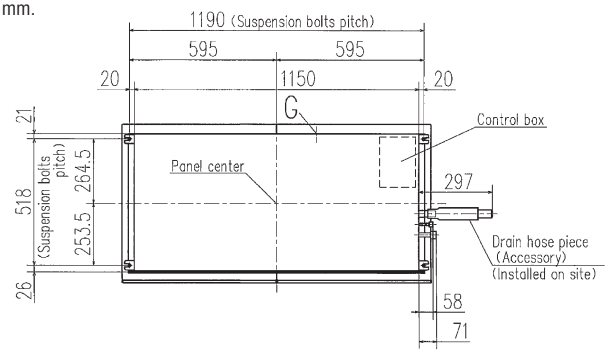
| Item | | Model | FDTS45KXE6F | FDTS71KXE6F |
|---|---|---|---|---|
| Nominal cooling capacity | | kW | 4.5 | 7.1 |
| Nominal heating capacity | | kW | 5.0 | 8.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | |
| Power consumption | Cooling | kW | 0.04 | 0.09 |
| | Heating | | 0.04 | 0.09 |
| Sound 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 ※ | | CMM | 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-EX1A, RC-E5, RCH-E3 wireless:RCN-TS-E | |
| 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") |

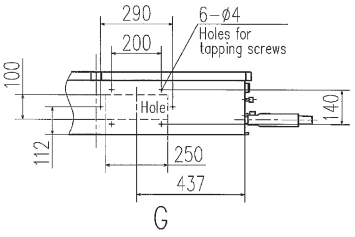
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

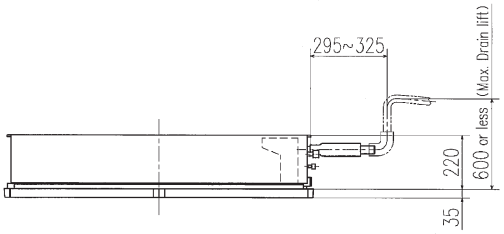
※ Powerful-Hi can be selected. Sound pressure level: FDTS45 42dB(A), FDTS71 49dB(A). Air flow: FDTS45 13CMM, FDTS71 17CMM.

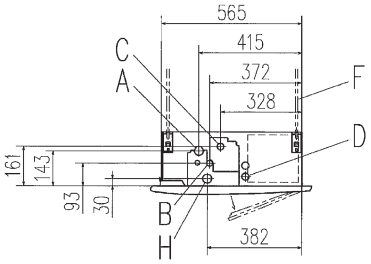
# Dimensions

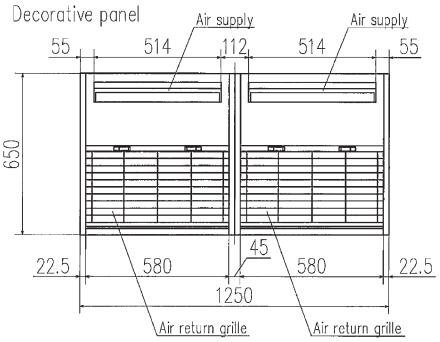
All measurements in mm.

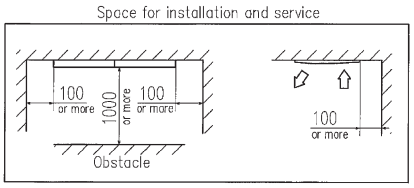



Make a space of 4000 or more between the units when installing more than one.

| Symbol | Content | | |
|---|---|---|---|
| | Model | 45 | 71 |
| A | Gas piping | 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 (I.D.25 , O.D.32) Note (2) | |
| D | Hole for wiring | | |
| F | Suspension bolts | (M10) | |
| G | Outside air opening for ducting | (Knock out) | |
| H | Drain piping (Gravity drainage) | VP25 (I.D.25 , O.D.32) | |

# Ceiling Cassette -1way Compact- FDTQ

**Model No.**
FDTQ22KXE6F
FDTQ28KXE6F
FDTQ36KXE6F

Fits into standard 600 x 600 ceiling

**Remote control (option)**

Wired

**RC-EX1A RC-E5 RCH-E3**

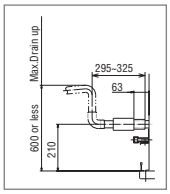
Wireless

**RCN-KIT3-E**

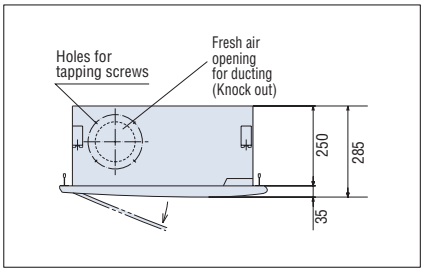
## Compact design

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

Optional wide panel shown for solid ceiling




Condensate drain pump included as standard




Ultra slim design at just 250mm above the ceiling

## Specifications

| Item | | Model | FDTQ22KXE6F | | | | FDTQ28KXE6F | | | | FDTQ36KXE6F | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Panel Name | | | Direct blow panel | | Duct panel | | Direct blow panel | | Duct panel | | Direct blow panel | | Duct panel | |
| Panel mode (Option) | | | TQ-PSA-15W-E | TQ-PSB-15W-E | QR-PNA-14W-ER | QR-PNB-14W-ER | TQ-PSA-15W-E | TQ-PSB-15W-E | QR-PNA-14W-ER | QR-PNB-14W-ER | TQ-PSA-15W-E | TQ-PSB-15W-E | QR-PNA-14W-ER | QR-PNB-14W-ER |
| Nominal cooling capacity | | kW | 2.2 | | | | 2.8 | | | | 3.6 | | | |
| Nominal heating capacity | | kW | 2.5 | | | | 3.2 | | | | 4.0 | | | |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | | | | | | | |
| Power consumption | Cooling | kW | 0.05-0.07 | | | | 0.05-0.07 | | | | 0.05-0.07 | | | |
| | Heating | | 0.05-0.07 | | | | 0.05-0.07 | | | | 0.05-0.07 | | | |
| Sound 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 ※ | | CMM | 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-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | | | | | | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | | | | | | | | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | | |

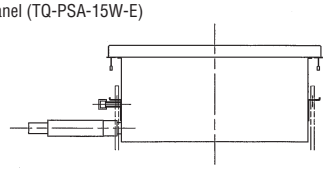
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values 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 8CMM.

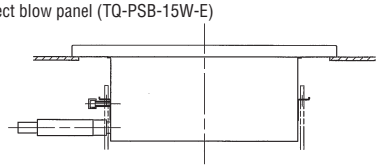
# Dimensions

All measurements in mm.

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

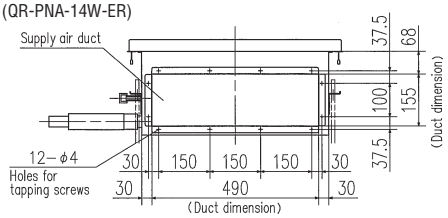


Direct blow panel (TQ-PSB-15W-E)

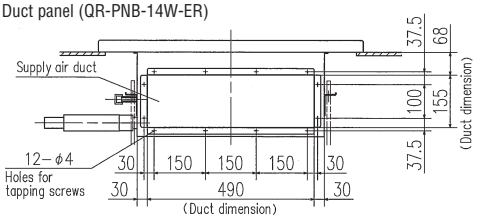


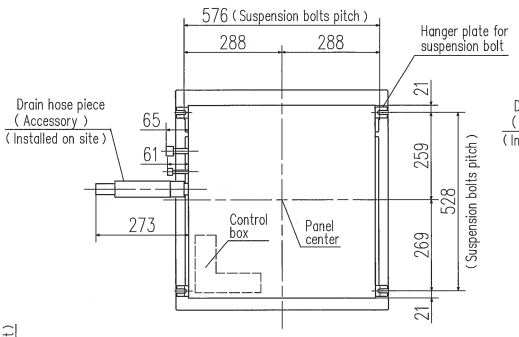
| Symbol | Content | | |
|---|---|---|---|
| | Model | FDTQ22KXE6F, 28KXE6F | FDTQ36KXE6F |
| A | Gas piping | ϕ9.52 (3/8") (Flare) | ϕ12.7 (1/2") (Flare) |
| B | Liquid piping | ϕ6.35 (1/4") (Flare) | |
| C | Drain piping | VP20 (I.D. 20, O.D. 26) Note (2) | |
| D | Hole for wiring | ϕ30 | |
| E | Suspension bolts | (M10) | |
| F1,2 | Outside air opening for ducting | (Knock out) | |

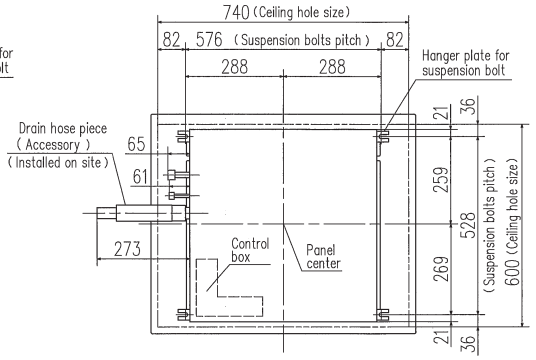
Duct panel (QR-PNA-14W-ER)

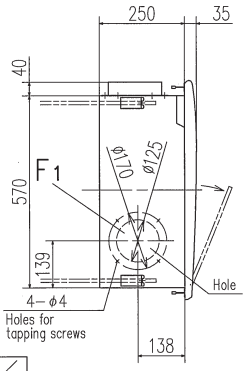


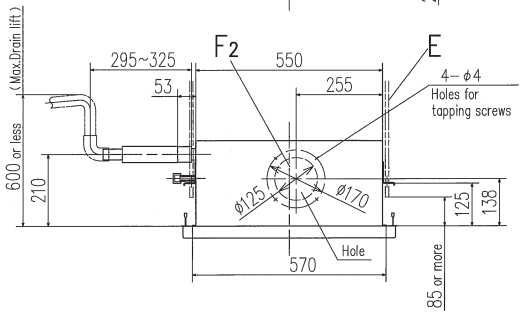

Duct panel (QR-PNB-14W-ER)

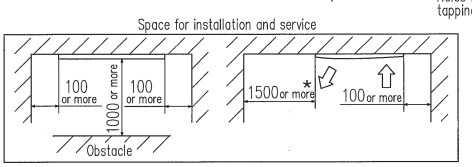


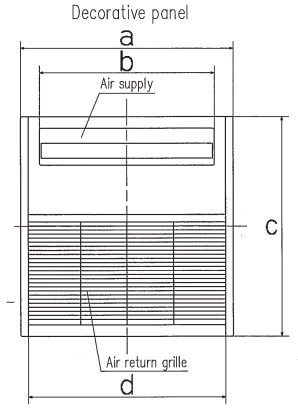




Make a space of 3000 or more between the units when installing more than one.

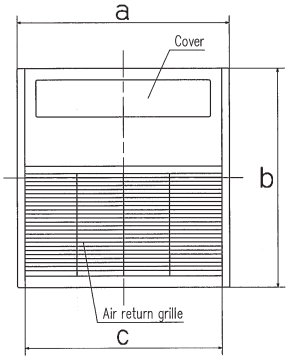
Notes

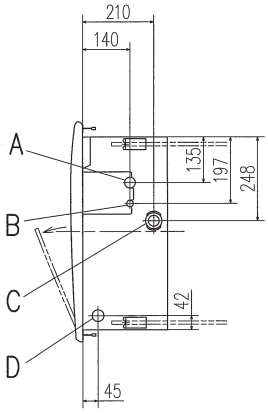
(1) The model name label is attached on the fan case inside the air return grille.
(2) Prepare the connecting socket (VP20) on site.
(3) This unit is designed for 2X2 grid ceiling.
★ In case of Direct blow panel

Decorative panel




Decorative panel




## Dimension Table

Unit:mm

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

## Dimension Table

Unit:mm

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

# Duct Connected -High Static Pressure- FDU

**Model No.**

FDU45KXE6F
FDU56KXE6F
FDU71KXE6F
FDU90KXE6F
FDU112KXE6F
FDU140KXE6F
FDU160KXE6F

NEW

**Remote control (option)**

Wired

RC-EX1A RC-E5 RCH-E3

Wireless

RCN-KIT3-E

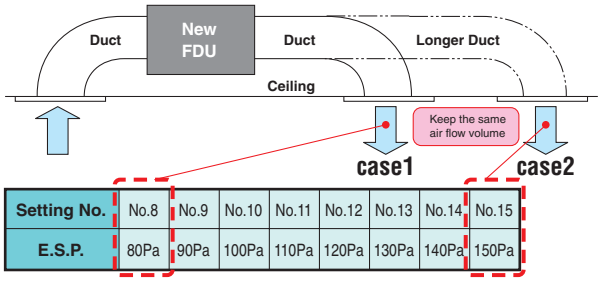
## External Static Pressure(E.S.P) control

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.

RC-E5

**E.S.P. button**

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



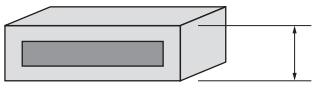

| Setting No. | No.8 | No.9 | No.10 | No.11 | No.12 | No.13 | No.14 | No.15 |
|---|---|---|---|---|---|---|---|---|
| E.S.P. | 80Pa | 90Pa | 100Pa | 110Pa | 120Pa | 130Pa | 140Pa | 150Pa |

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

**<Expansion of external static pressure range>**

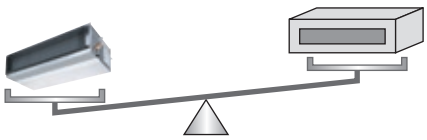
| Current | | New |
|---|---|---|
| 10~130Pa | ➡ | 10~200Pa |

## Thin design



| | Current | | New | |
|---|---|---|---|---|
| FDU71KXE6F | 297 | ➡ | 280 | 17mm less!! |
| FDU112/140KXE6F | 350 | ➡ | 280 | 70mm less!! |

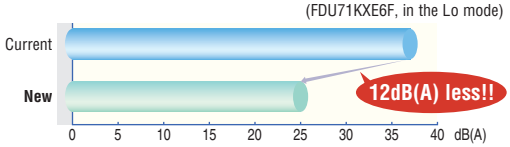
## Reduction of weight



| | Current | | New | |
|---|---|---|---|---|
| FDU71KXE6F | 40 | ➡ | 34 | 6kg less!! |
| FDU90KXE6F | 63 | ➡ | 34 | 29kg less!! |
| FDU112/140KXE6F | 63 | ➡ | 54 | 9kg less!! |

## Reduction of sound pressure level

(FDU71KXE6F, in the Lo mode)




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

# Specifications

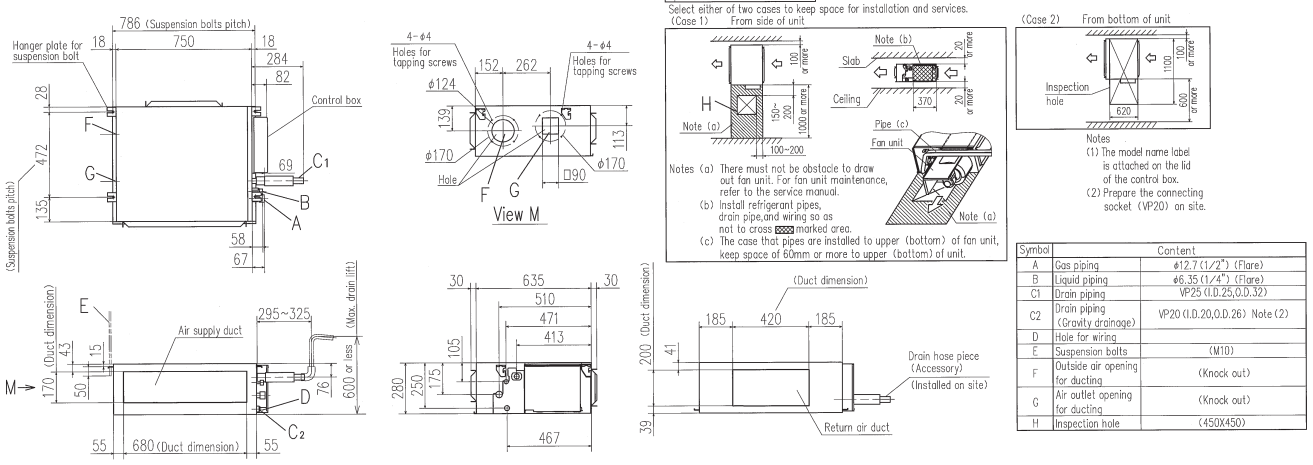
| Item | | Model | FDU45KXE6F | FDU56KXE6F | FDU71KXE6F | FDU90KXE6F | FDU112KXE6F | FDU140KXE6F | FDU160KXE6F |
|---|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 4.5 | 5.6 | 7.1 | 9.0 | 11.2 | 14.0 | 16.0 |
| Nominal heating capacity | | kW | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 18.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | | |
| Power consumption | Cooling | kW | 0.10-0.10/0.10 | | 0.24-0.25/0.24 | | 0.31-0.32/0.31 | 0.35-0.36/0.35 | 0.42-0.43/0.42 |
| | Heating | | 0.10-0.10/0.10 | | 0.24-0.25/0.24 | | 0.31-0.32/0.32 | 0.35-0.36/0.35 | 0.42-0.43/0.42 |
| Sound pressure level | | dB(A) | Hi:32 Me:29 Lo:26 | | Hi:33 Me:29 Lo:25 | | Hi:38 Me:36 Lo:30 | Hi:40 Me:34 Lo:29 | 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 (Standard) | | CMM | Hi:10 Me:9 Lo:8 | | Hi:19 Me:15 Lo:10 | | Hi:28 Me:25 Lo:19 | Hi:32 Me:26 Lo:20 | Hi:35 Me:28 Lo:22 |
| External Static pressure | | Pa | 200 (at 13CMM) | | 200 (at 24CMM) | | 200 (at 36CMM) | 200 (at 39CMM) | 200 (at 48CMM) |
| Outside air intake | | | Possible | | | | | | |
| Air filter, Q'ty | | | Procure locally | | | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | | | | |
| 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. 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.
3. Powerful-Hi can be selected. Sound pressure level: FDU45/56 37dB(A), FDU71/90 38dB(A), FDU112 44dB(A), FDU140 45dB(A),FDU160 47dB(A). Air flow: FDU45/56 13CMM, FDU71/90 24CMM, FDU112 36CMM, FDU140 39CMM, FDU160 48CMM.

# Dimensions

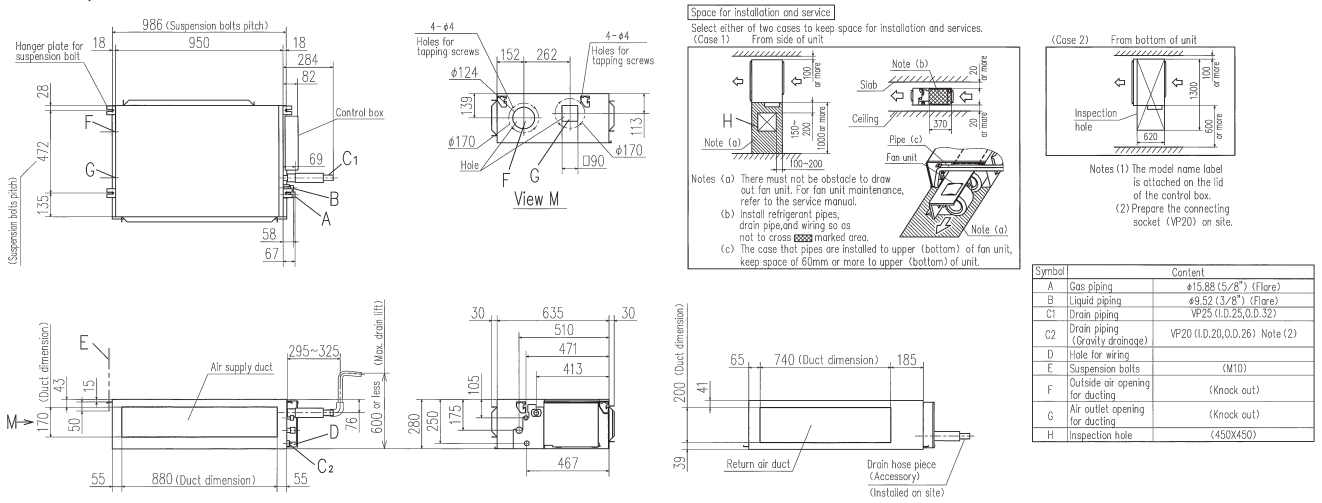
All measurements in mm.

## FDU45KXE6F, 56KXE6F



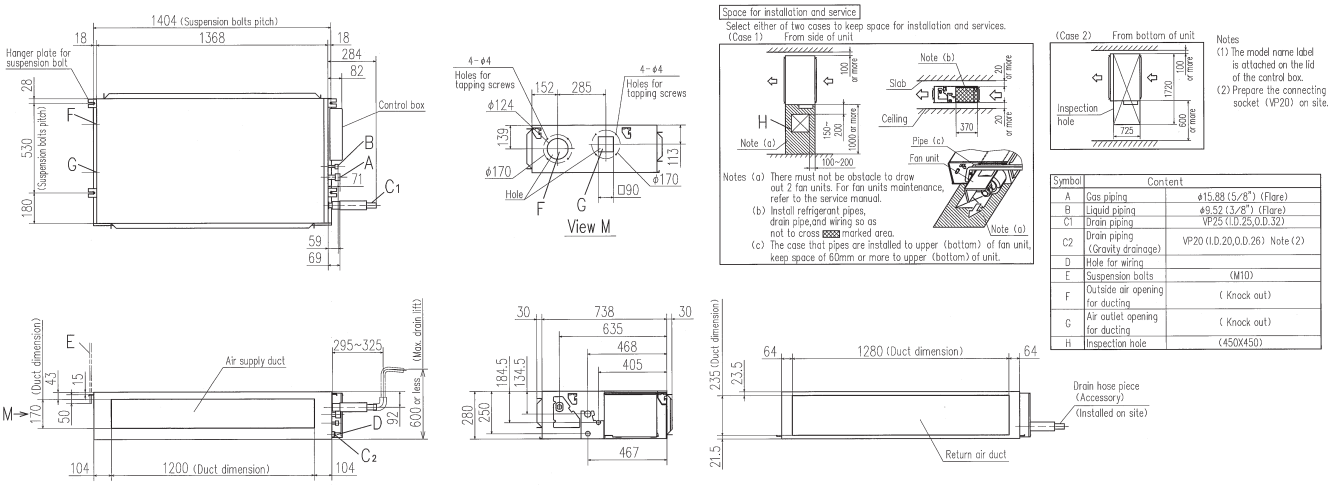

| Symbol | Content | |
|---|---|---|
| A | Gas piping | φ12.7 (1/2") (Flare) |
| B | Liquid piping | φ6.35 (1/4") (Flare) |
| C1 | Drain piping | VP25 (I.D.25,O.D.32) |
| C2 | Drain piping (Gravity drainage) | VP20 (I.D.20,O.D.26) Note (2) |
| D | Hole for wiring | |
| E | Suspension bolts | (M10) |
| F | Outside air opening for ducting | (Knock out) |
| G | Air outlet opening for ducting | (Knock out) |
| H | Inspection hole | (450X450) |

## FDU71KXE6F, 90KXE6F




| Symbol | Content | |
|---|---|---|
| A | Gas piping | φ15.88 (5/8") (Flare) |
| B | Liquid piping | φ9.52 (3/8") (Flare) |
| C1 | Drain piping | VP25 (I.D.25,O.D.32) |
| C2 | Drain piping (Gravity drainage) | VP20 (I.D.20,O.D.26) Note (2) |
| 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) |

## FDU112KXE6F, 140KXE6F, 160KXE6F




| Symbol | Content | |
|---|---|---|
| A | Gas piping | φ15.88 (5/8") (Flare) |
| B | Liquid piping | φ9.52 (3/8") (Flare) |
| C1 | Drain piping | VP25 (I.D.25,O.D.32) |
| C2 | Drain piping (Gravity drainage) | VP20 (I.D.20,O.D.26) Note (2) |
| 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) |

# Duct Connected -High Static Pressure- FDU

**Model No.**
FDU224KXE6F
FDU280KXE6F

**Remote control (option)**

Wired

**RC-EX1A** **RC-E5** **RCH-E3**

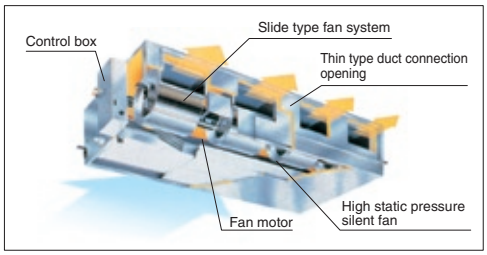
Wireless

**RCN-KIT3-E**

**Fan control kit (option)**
(100~200Pa)
**U-FCRA**

**Adaptability to higher static pressures**

High static pressure of 200Pa




# Specifications

| Item | | Model | FDU224KXE6F | FDU280KXE6F |
|---|---|---|---|---|
| Nominal cooling capacity | | kW | 22.4 | 28.0 |
| Nominal heating capacity | | kW | 25.0 | 31.5 |
| Power source | | | 1 Phase 220-240V, 50Hz | |
| Power consumption | Cooling | kW | 0.94-1.03 | 0.96-1.05 |
| | Heating | | 0.86-0.90 | 0.88-0.96 |
| Sound pressure level | | dB(A) | Hi:51 | Hi:52 |
| Exterior dimensions H x W x D | | mm | 360x1570x830 | |
| Net weight | | kg | 92 | |
| Air flow (Standard) | | CMM | Hi:51 | Hi:68 |
| External Static pressure | | Pa | 200 | |
| Outside air intake | | | Possible(on Return duct) | |
| Air filter, Q'ty | | | Procure locally | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø9.52(3/8") Gas line:ø19.05(3/4") | Liquid line:ø9.52(3/8") Gas line:ø22.22(7/8") |

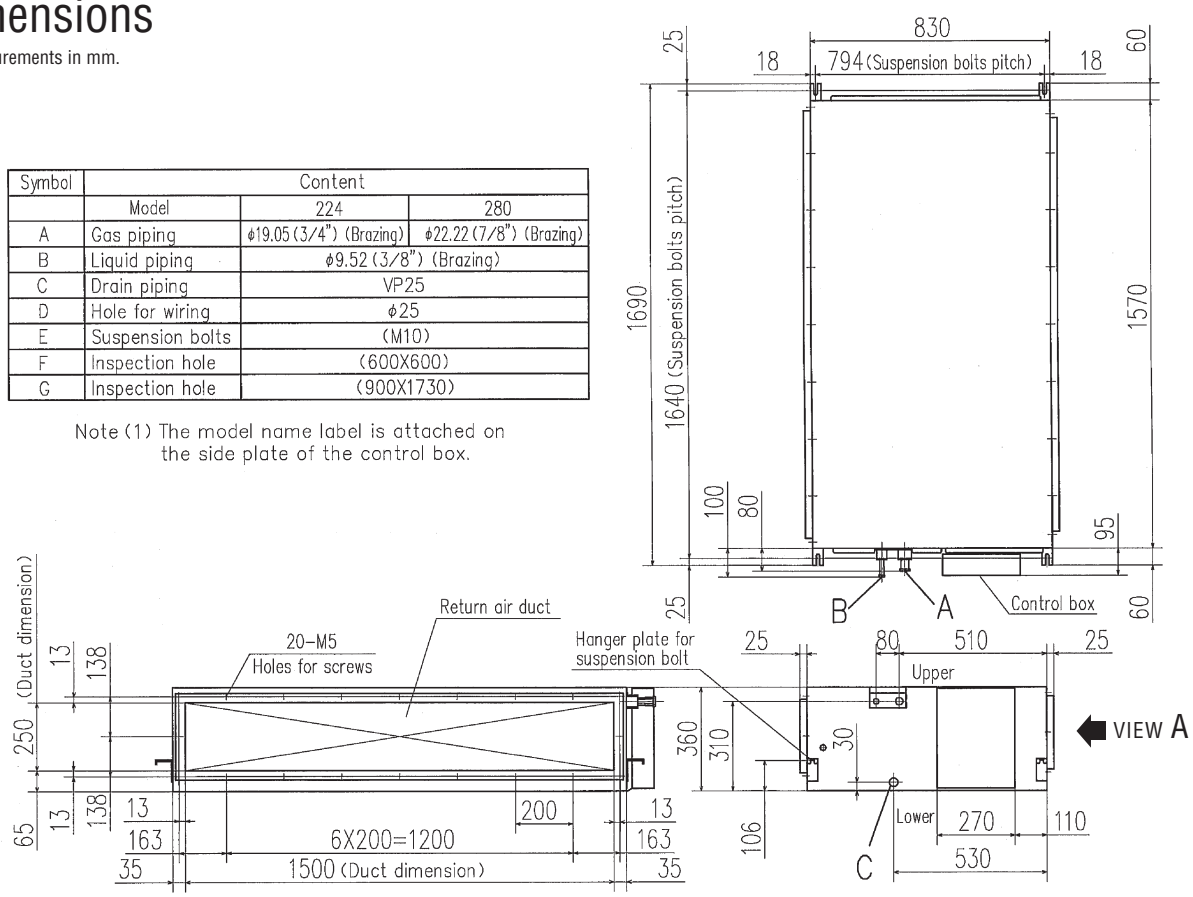
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB. External static pressure of indoor unit is 100Pa.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
3. Values of sound pressure level become increased 5dB(A), when external static pressure is 200Pa (factory setting).
4. Values of air flow volume are those at external static pressure 200Pa (factory setting).

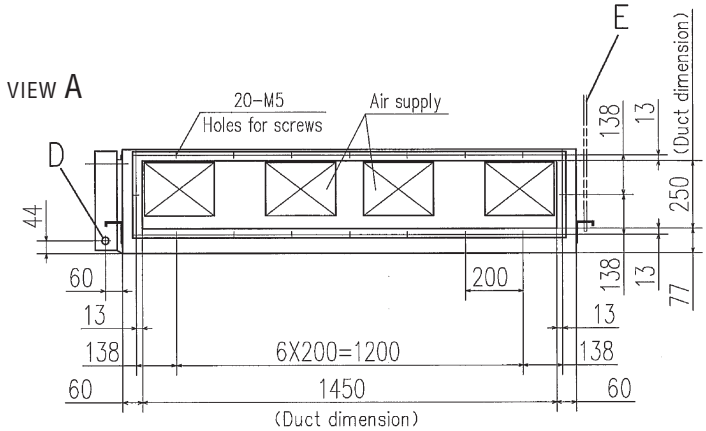
# Dimensions

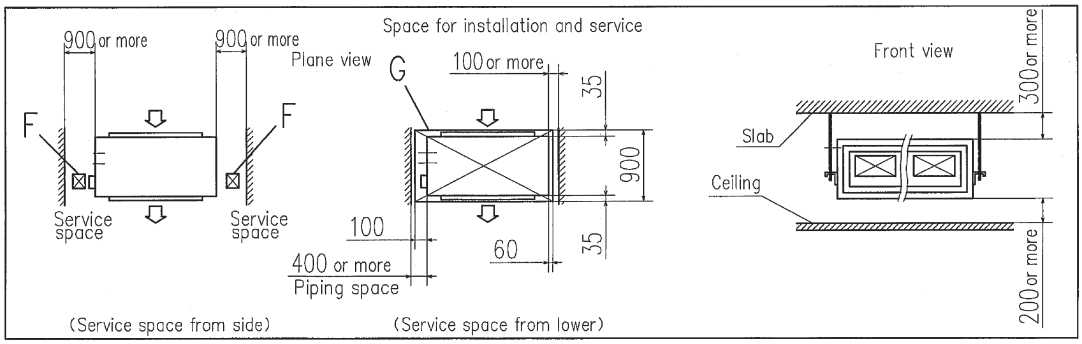
All measurements in mm.

| Symbol | Content | | |
|---|---|---|---|
| | Model | 224 | 280 |
| A | Gas piping | φ19.05 (3/4") (Brazing) | φ22.22 (7/8") (Brazing) |
| B | Liquid piping | φ9.52 (3/8") (Brazing) | |
| C | Drain piping | VP25 | |
| D | Hole for wiring | φ25 | |
| E | Suspension bolts | (M10) | |
| F | Inspection hole | (600X600) | |
| G | Inspection hole | (900X1730) | |

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



# Duct Connected -Low/Middle Static Pressure- FDUM

NEW

**Model No.**

FDUM22KXE6F FDUM71KXE6F
FDUM28KXE6F FDUM90KXE6F
FDUM36KXE6F FDUM112KXE6F
FDUM45KXE6F FDUM140KXE6F
FDUM56KXE6F FDUM160KXE6F

**Filter kit (option)**

**UM-FL1E : for 22~56**
**UM-FL2E : for 71, 90**
**UM-FL3E : for 112, 140, 160**

*Filter pressure loss:5pa

**Remote control (option)**

Wired Wireless

**RC-EX1A** **RC-E5** **RCH-E3** **RCN-KIT3-E**

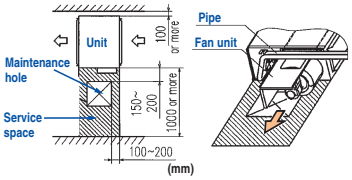
## Improvement of low tap noise dB(A)

Air flow sound was reduced by new fan and casing design.
Refrigerant flow sound was decreased by advanced refrigerant distributor design.

| Indoor model name | | 22/28/36 | 45/56 | 71 | 90 | 112 | 140 |
|---|---|---|---|---|---|---|---|
| NEW | dB(A) | 26 | 26 | 25 | 25 | 30 | 29 |
| Current FDUM | | 28 | 29 | 29 | 30 | 32 | 33 |
| Improvement | | 2 | 3 | 4 | 5 | 2 | 4 |

## Improvement of the serviceability

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




## Thin design

The height of all FDUM models is only 280mm.


**FDUM112/140KXE6F**


**FDUM22~90KXE6F**

# Specifications

| Item | Model | FDUM22KXE6F | FDUM28KXE6F | FDUM36KXE6F | FDUM45KXE6F | FDUM56KXE6F | FDUM71KXE6F | FDUM90KXE6F | FDUM112KXE6F | FDUM140KXE6F | FDUM160KXE6F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | kW | 2.2 | 2.8 | 3.6 | 4.5 | 5.6 | 7.1 | 9.0 | 11.2 | 14.0 | 16.0 |
| Nominal heating capacity | kW | 2.5 | 3.2 | 4.0 | 5.0 | 6.3 | 8.0 | 10.0 | 12.5 | 16.0 | 18.0 |
| Power source | | 1 Phase 220-240V, 50Hz | | | | | | | | | |
| Power consumption Cooling | kW | 0.10-0.10 | | | | | 0.20-0.20 | | 0.29-0.29 | 0.33-0.33 | 0.45-0.45 |
| Power consumption Heating | kW | 0.10-0.10 | | | | | 0.20-0.20 | | 0.29-0.29 | 0.33-0.33 | 0.45-0.45 |
| Sound pressure level※ | dB(A) | Hi:32 Me:29 Lo:26 | | | | | Hi:33 Me:29 Lo:25 | | Hi:38 Me:36 Lo:30 | Hi:40 Me:34 Lo:29 | Hi:40 Me:35 Lo:30 |
| Exterior dimensions H x W x D | mm | 280 x 750 x 635 | | | | | 280 x 950 x 635 | | 280 x 1370 x 740 | | |
| Net weight | kg | 29 | | | | | 34 | | 54 | | |
| Air flow ※ | CMM | Hi:10 Me:9 Lo:8 | | | | | Hi:19 Me:15 Lo:10 | | Hi:28 Me:25 Lo:19 | Hi:32 Me:26 Lo:20 | Hi:35 Me:28 Lo:22 |
| External Static pressure | Pa | 100(at 13CMM) | | | | | 100 (at 24CMM) | | 100 (at 36CMM) | 100 (at 39CMM) | 100 (at 48CMM) |
| Outside air intake | | Possible | | | | | | | | | |
| Air filter, Q'ty | | Procure locally | | | | | | | | | |
| Remote control(option) | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | | | | | | | |
| Installation data Refrigerant piping size | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") | | | | |

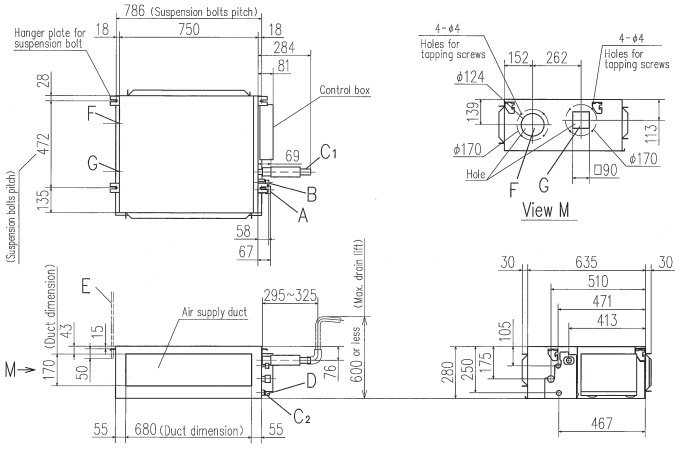
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27ºCDB, 19ºCWB, and outdoor temp. of 35ºCDB. Heating: Indoor temp. of 20ºCDB, and outdoor temp. of 7ºCDB, 6ºCWB. External static pressure of indoor unit is 35Pa(22/28/36/45/56/71/90), 60Pa(112/140/160).
2. Sound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

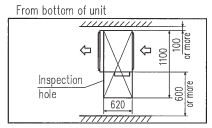
※ Powerful-Hi can be selected. Sound pressure level: FDUM22/28/36/45/56 37dB(A), FDUM71/90 38dB(A), FDUM112 44dB(A), FDUM140 45dB(A), FDUM160 47dB(A). Air flow: FDUM22/28/36/45/56 13CMM, FDUM71/90 24CMM, FDUM112 36CMM, FDUM140 39CMM, FDUM160 48CMM.

# Dimensions

All measurements in mm.

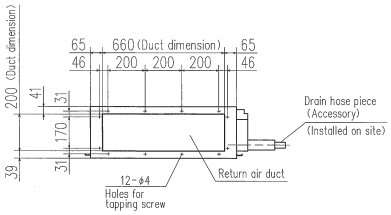
## FDUM22KXE6F, 28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F



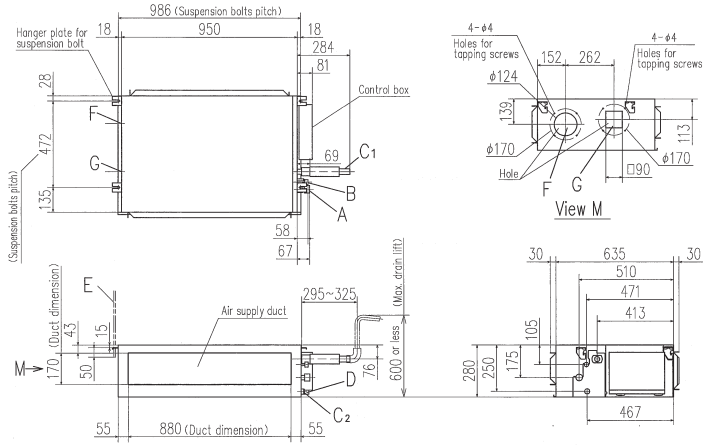



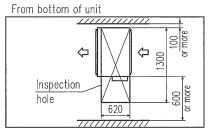

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

| Symbol | Content | | |
|---|---|---|---|
| | Model | 22,28 | 36,45,56 |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | |
| C1 | Drain piping | VP20 (Standard) or VP25 (Used with attached socket) Note (2) | |
| C2 | Drain piping (Gravity drainage) | VP20 (Standard) or VP25 (Used with attached socket) | |
| D | Hole for wiring | | |
| E | Suspension bolts | (M10) | |
| F | Outside air opening for ducting | (ø150) (Knock out) | |
| G | Air outlet opening for ducting | (ø125) (Knock out) | |
| H | Inspection hole | (450X450) | |



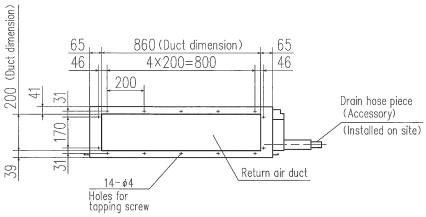

## FDUM71KXE6F, 90KXE6F



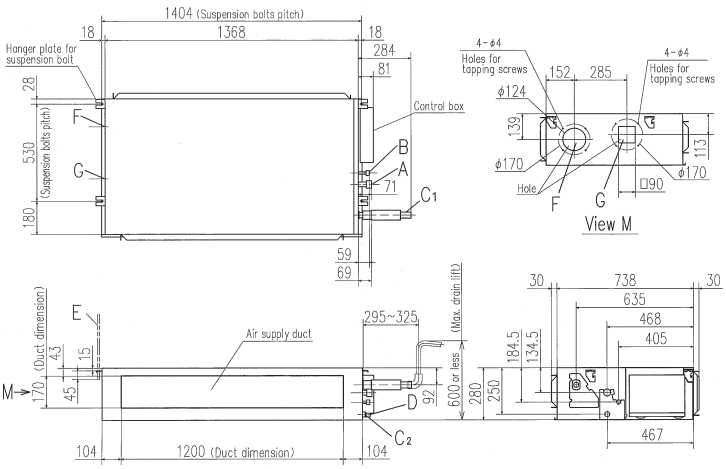



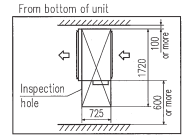

Notes (1) The model name label is attached on the lid of the control box.
(2) Prepare the connecting socket (VP20 or VP25) on site.

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C1 | Drain piping | VP20 (Standard) or VP25 (Used with attached socket) Note (2) |
| C2 | Drain piping (Gravity drainage) | VP20 (Standard) or VP25 (Used with attached socket) |
| D | Hole for wiring | |
| E | Suspension bolts | (M10) |
| F | Outside air opening for ducting | (ø150) (Knock out) |
| G | Air outlet opening for ducting | (ø125) (Knock out) |
| H | Inspection hole | (450X450) |



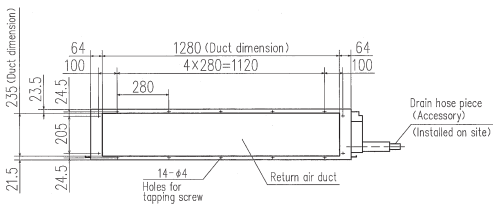

## FDUM112KXE6F, 140KXE6F, 160KXE6F




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

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C1 | Drain piping | VP20 (Standard) or VP25 (Used with attached socket) Note (2) |
| C2 | Drain piping (Gravity drainage) | VP20 (Standard) or VP25 (Used with attached socket) |
| D | Hole for wiring | |
| E | Suspension bolts | (M10) |
| F | Outside air opening for ducting | (ø150) ( Knock out) |
| G | Air outlet opening for ducting | (ø125) ( Knock out) |
| H | Inspection hole | (450X450) |

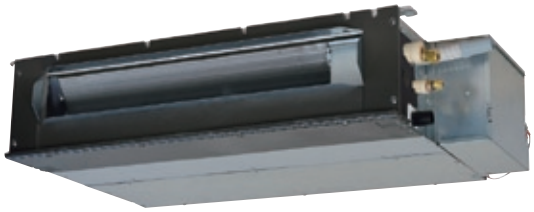


# Duct Connected (thin) -Low Static Pressure- FDUT

NEW

**Model No.**

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



**Remote control (option)**

Wired

RC-EX1A RC-E5 RCH-E3

Wireless

RCN-KIT3-E

## Expansion of lineup

| | 15KXE6F-E | 22KXE6F-E | 28KXE6F-E | 36KXE6F-E | 45KXE6F-E | 56KXE6F-E | 71KXE6F-E |
|---|---|---|---|---|---|---|---|
| Current | | ● | ● | ● | ● | ● | |
| New | ●* | ● | ● | ● | ● | ● | ● |

**FOUT15KXE6F-E:Suitable for small divided rooms**
**FOUT71KXE6F-E:Suitable for large rooms**

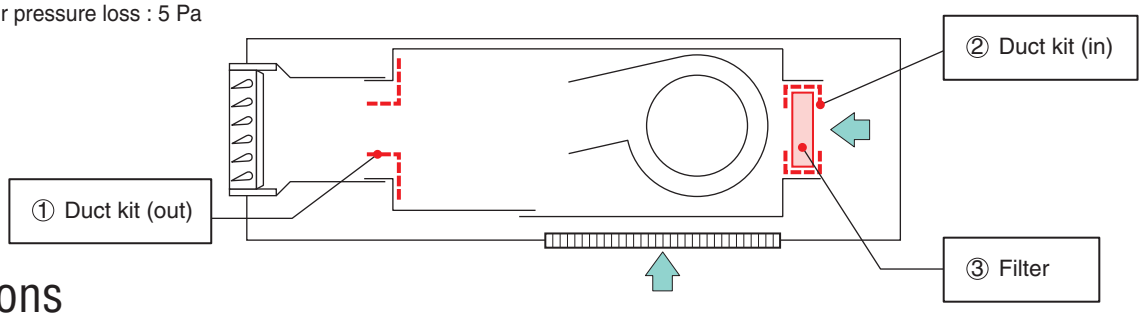
***Comming soon**

(1) Can not be connected to some KX outdoor units. Please consult your dealer for further details.
(2) Regarding pipe length (150m or more is required) and temperature condition (the lowest is 10°C) in the cooling operation etc. , please refer to our technical manual.

## Option

| Item | Contents | for FDUT15/22/28/36KXE6F-E | for FDUT45/56KXE6F-E | for FDUT71KXE6F-E |
|---|---|---|---|---|
| Duct kit (out) | ① | UT-SAT1EF | UT-SAT2EF | UT-SAT3EF |
| Filter set | ②+③ | UT-FL1EF | UT-FL2EF | UT-FL3EF |

Filter pressure loss : 5 Pa




# Specifications

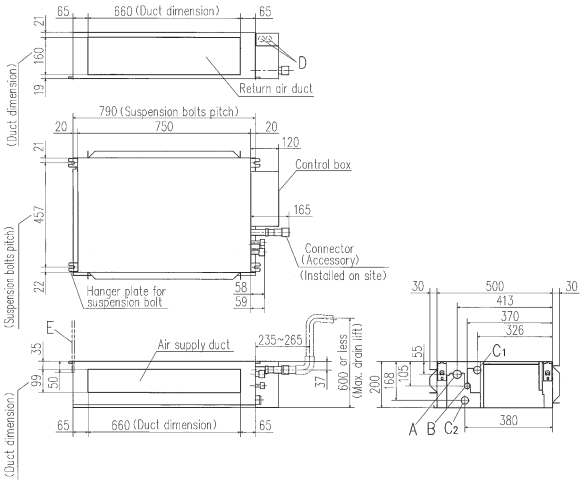
| Item | | Model | FDUT15KXE6F-E | FDUT22KXE6F-E | FDUT28KXE6F-E | FDUT36KXE6F-E | FDUT45KXE6F-E | FDUT56KXE6F-E | FDUT71KXE6F-E |
|---|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 1.5 | 2.2 | 2.8 | 3.6 | 4.5 | 5.6 | 7.1 |
| Nominal heating capacity | | kW | 1.7 | 2.5 | 3.2 | 4.0 | 5.0 | 6.0 | 8.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | | |
| Power consumption | Cooling | kW | 0.06-0.06/0.06 | 0.07-0.07 | | | 0.08-0.08 | | 0.08-0.08 |
| | Heating | | 0.06-0.06/0.06 | 0.07-0.07 | | | 0.08-0.08 | | 0.07-0.07 |
| Sound pressure level ① | | dB(A) | Hi:28 Me:26 Lo:22 | Hi:28 Me:26 Lo:22 | | Hi:33 Me:30 Lo:26 | Hi:34 Me:32 Lo:28 | Hi:35 Me:33 Lo:30 | Hi:35 Me:31 Lo:28 |
| Sound pressure level ② | | dB(A) | Hi:32 Me:29 Lo:25 | Hi:32 Me:29 Lo:26 | | Hi:37 Me:34 Lo:28 | Hi:36 Me:33 Lo:27 | Hi:38 Me:33 Lo:29 | Hi:41 Me:37 Lo:32 |
| Exterior dimensions H x W x D | | mm | 200x750x500 | | | | 200x950x500 | | 220x1150x565 |
| Net weight | | kg | 21 | | | 22 | 25 | | 31 |
| Air flow (Standard) | | CMM | 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 | | | Not possible | | | | | | |
| Suction guard(Air filter) | | | Procure locally | | | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | | | | |
| 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. External static pressure of indoor unit is 10Pa.
2. The data of nominal cooling and heating capacity and sound pressure level are measured with 10Pa of external static pressure.
3. The sound level indicates the value of rear-intake type with duct in anechoic chamber. During operation these values are somewhat higher due to ambient conditions.
4. Sound pressure levels are values when 2m supply duct and 1m return duct are connected.
① : Mike position is 1.5m below unit, ② : Mike position is 1m in front and 1m below the air supply duct.

# Dimensions

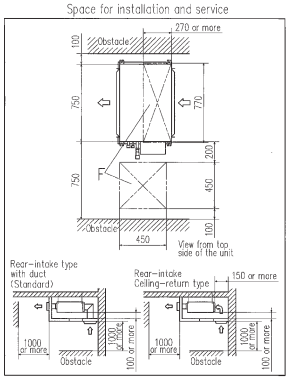
All measurements in mm.

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

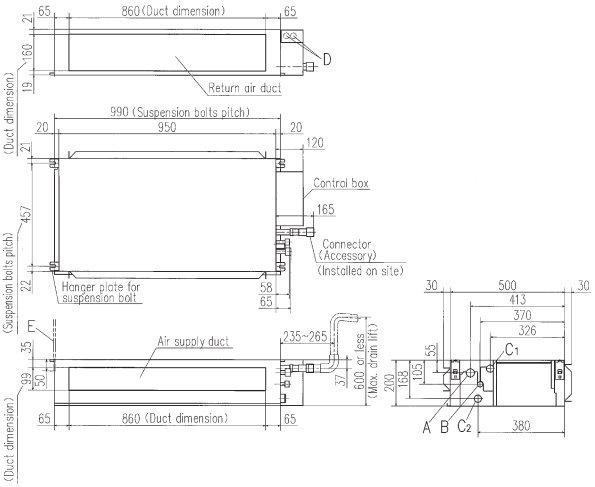



| Symbol | Content | | |
|---|---|---|---|
| | Model | 15,22,28 | 36 |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | |
| C1 | Drain piping | VP25 (I.D.25 , O.D.32) (Used with attached connector) | |
| C2 | Drain piping (Gravity drainage) | VP25 (I.D.25 , O.D.32) (Used with attached connector) | |
| D | Hole for wiring | ø25 x 2 | |
| E | Suspension bolts | (M10) | |
| F | Inspection hole | (450X450) , (270X770) | |

Space for installation and service

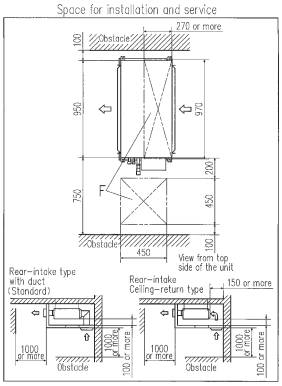



## FDUT45KXE6F-E, 56KXE6F-E

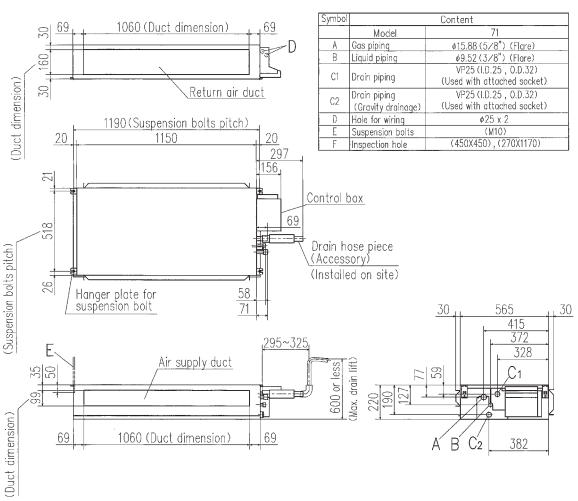



| Symbol | Content | |
|---|---|---|
| | Model | 45,56 |
| A | Gas piping | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) |
| C1 | Drain piping | VP25 (I.D.25 , O.D.32) (Used with attached connector) |
| C2 | Drain piping (Gravity drainage) | VP25 (I.D.25 , O.D.32) (Used with attached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

Space for installation and service

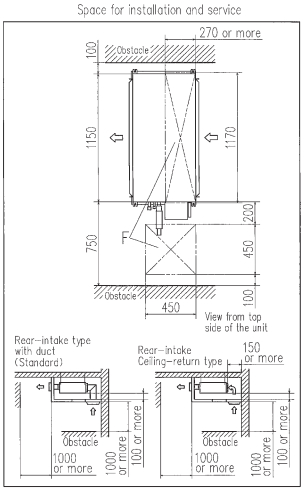



## FDUT71KXE6F-E




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

Space for installation and service



# Duct Connected (Compact & Flexible)
# FDUH

**Model No.**
FDUH22KXE6F
FDUH28KXE6F
FDUH36KXE6F

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

**Filter kit (option)**
**UH-FL1E**

*Filter pressure loss:5pa

**Remote control (option)**

Wired

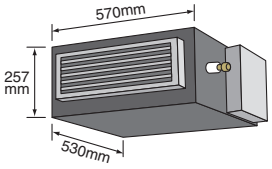
**RC-EX1A** **RC-E5** **RCH-E3**

Wireless

**RCN-KIT3-E**

## 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.

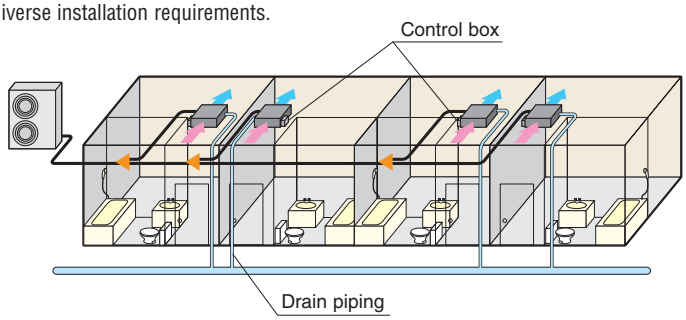



## Quiet operation

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

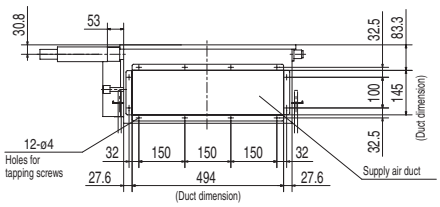
| Item | Model | FDUH22KXE6F | FDUH28KXE6F | FDUH36KXE6F |
|---|---|---|---|---|
| Nominal cooling capacity | kW | 2.2 | 2.8 | 3.6 |
| Nominal heating capacity | kW | 2.5 | 3.2 | 4.0 |
| Power source | | 1 Phase 220-240V, 50Hz | | |
| Power consumption Cooling | kW | 0.05-0.07 | | |
| Power consumption Heating | kW | 0.05-0.07 | | |
| Sound pressure level※ | dB(A) | HI: 33 Me: 30 Lo: 27 | | |
| Exterior dimensions HxWxD | mm | 257x570x530 | | |
| Net weight | kg | 22 | | |
| Air flow ※ | CMM | HI: 7 Me: 6.5 Lo: 6 | | |
| External static pressure | Pa | 30 | | |
| Outside air intake | | Not possible | | |
| Air filter, Q'ty | | Procure locally | | |
| Remote control(option) | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | |
| Installation data Refrigerant piping size | mm(in) | Liquid line:ø6.35(1/4") | | Liquid line:ø6.35(1/4") |
| | | Gas line:ø9.52(3/8") | | Gas line:ø12.7(1/2") |

1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 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.

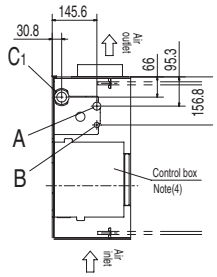
※ Powerful-Hi can be selected. Sound pressure level: FDUH22/28/36 39dB(A). Air flow: FDUH22/28/36 8.5CMM.

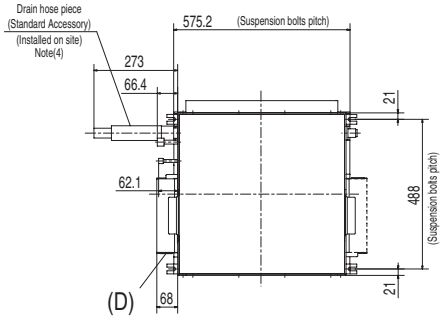
# Dimensions

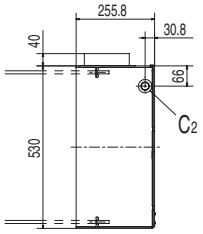
All measurements in mm.

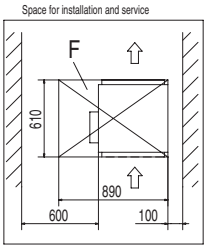



| Symbol | Content | | |
|---|---|---|---|
| | Model | FDUH22KXE6F,28KXE6F | FDUH36KXE6F |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | |
| $C_1$,$C_2$ | Drain piping | VP20(I.D.20, O.D.26) Note (2) | |
| D | Hole for wiring | ø30 | |
|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

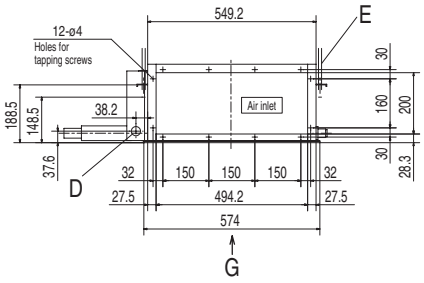


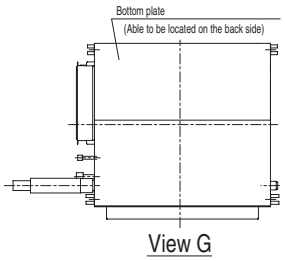




Unit:mm

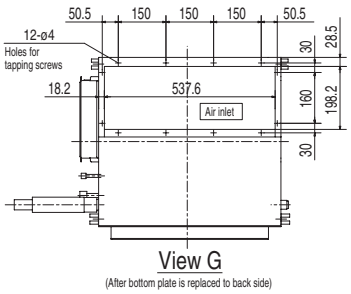



Notes

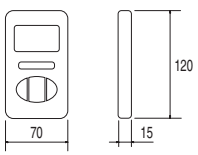
( 1 ) The model name label is attached on the fan case inside the air return grille.
( 2 ) Prepare the connecting socket (VP20) on site. (As for drain piping, it is possible to choose $C_1$ or $C_2$)
( 3 ) When control box is located on the reverse side, Installation space should be modified to new location.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




## In case of Bottom air intake




## Simple remote control



# Wall Mounted
# FDK

**Model No.**

FDK22KXE6F
FDK28KXE6F
FDK36KXE6F
FDK45KXE6F
FDK56KXE6F
FDK71KXE6F

FDK22~56

FDK71

## Remote control (option)

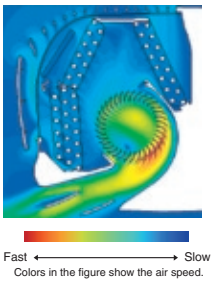
Wired

**RC-EX1A** **RC-E5** **RCH-E3**

Wireless

**RCN-K-E : FDK22~56**
**RCN-K71-E : FDK71**

## Innovative Design



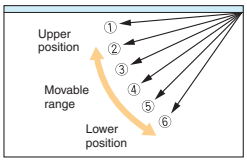
Fast ⟷ Slow
Colors in the figure show the air speed.

New 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.

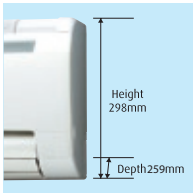
## Flap control system

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

*RCH-E3 is not applicable to the Flap control system.




## Installation Workability




The new slimmer design allows easy & neat installation even in tight spaces.

## Improved Maintainability

Also included is a new easy clean mechanism where the front panel is opened/closed simply from the bottom to easily access the detachable filters.

# Specifications

| Item | | Model | FDK22KXE6F | FDK28KXE6F | FDK36KXE6F | FDK45KXE6F | FDK56KXE6F | FDK71KXE6F |
|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 2.2 | 2.8 | 3.6 | 4.5 | 5.6 | 7.1 |
| Nominal heating capacity | | kW | 2.5 | 3.2 | 4.0 | 5.0 | 6.3 | 8.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | |
| Power consumption | Cooling | kW | 0.05 | | | 0.05 | | 0.09 |
| | Heating | | 0.04 | | | 0.05 | | 0.09 |
| Sound pressure level ※ | Cooling | dB(A) | Hi:35 Me:33 Lo:31 | | Hi:41 Me:35 Lo:31 | Hi:42 Me:37 Lo:33 | Hi:46 Me:42 Lo:37 | Hi:47 Me:43 Lo:39 |
| | Heating | | Hi:35 Me:33 Lo:31 | | Hi:39 Me:35 Lo:31 | Hi:42 Me:37 Lo:33 | Hi:46 Me:42 Lo:37 | Hi:47 Me:43 Lo:39 |
| Exterior dimensions H x W x D | | mm | 298 x 840 x 259 | | | | | 318 x 1098 x 248 |
| Net weight | | kg | 12 | | | 12.5 | 13 | 15.5 |
| Air flow ※ | | CMM | Hi:8 Me:7 Lo:6 | | Hi:10 Me:9 Lo:7 | Hi:11 Me:9 Lo:7 | Hi:14 Me:12 Lo:10 | Hi:21 Me:18 Lo:15 |
| Outside air intake | | | Not possible | | | | | |
| Air filter, Q'ty | | | Polypropylene net x2 (Washable) | | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-K-E (for FDK22~56), RCN-K71-E (for FDK71) | | | | | |
| 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") |

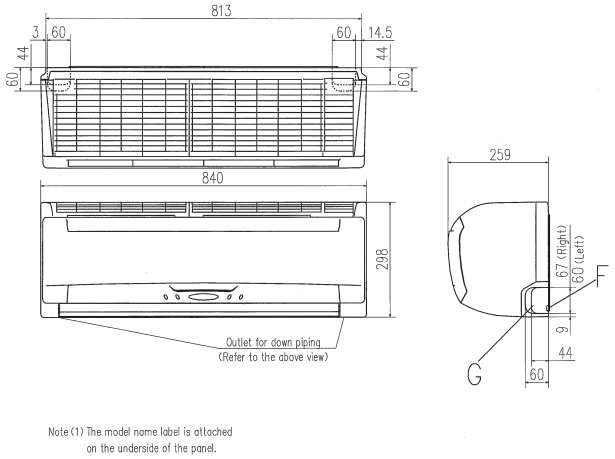
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

※ Powerful-Hi can be selected. Sound pressure level: FDK22/28 38dB(A), FDK36 48dB(A)(Cooling)&42dB(A)(Heating), FDK45 48dB(A)(Cooling)&43dB(A)(Heating), FDK56 48dB(A)(Cooling)&47dB(A)(Heating), FDK71 48dB(A).
Air flow: FDK22/28 11CMM, FDK36/45 15CMM, FDK56 16CMM, FDK71 24CMM.

# Dimensions

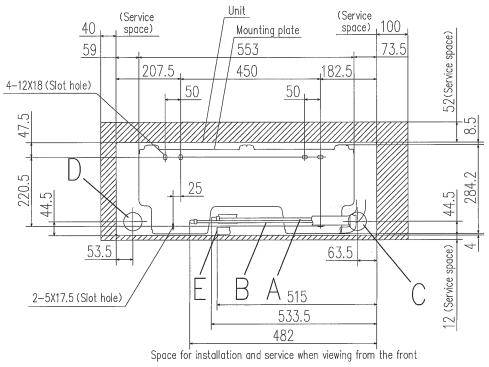
All measurements in mm.

## FDK22KXE6F, 28KXE6F, 36KXE6F, 45KXE6F, 56KXE6F



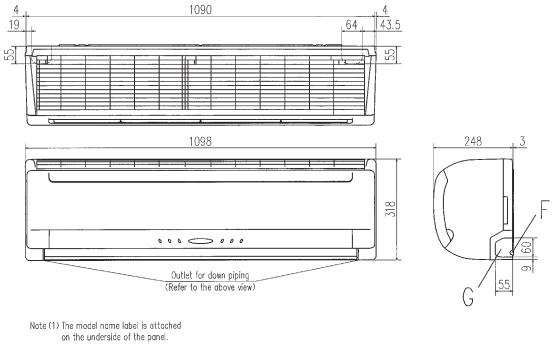

Note (1) The model name label is attached on the underside of the panel.

| Symbol | Content | | |
|---|---|---|---|
| | Model | FDK22KXE6F,28KXE6F | FDK36KXE6F,45KXE6F,56KXE6F |
| A | Gas piping | ø9.52 (3/8") (Flare) | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) | |
| C | Hole on wall for right rear piping | (ø65) | |
| D | Hole on wall for left rear piping | (ø65) | |
| E | Drain piping | VP16 (I.D.16) | |
| F | Outlet for wiring | | |
| G | Outlet for piping (on both side) | | |



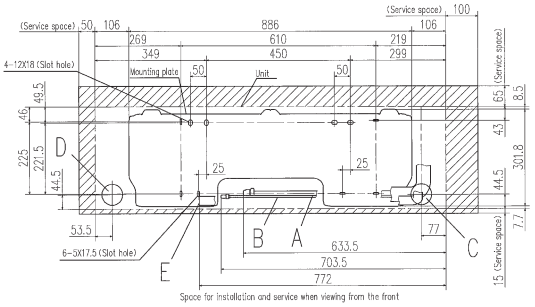

Space for installation and service when viewing from the front

## FDK71KXE6F




Note (1) The model name label is attached on the underside of the panel.

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C | Hole on wall for right rear piping | (ø65) |
| D | Hole on wall for left rear piping | (ø65) |
| E | Drain piping | VP16 (I.D.16) |
| F | Outlet for wiring | |
| G | Outlet for piping (on both side) | |




Space for installation and service when viewing from the front

# Ceiling Suspended FDE

**Model No.**

FDE36KXE6F
FDE45KXE6F
FDE56KXE6F
FDE71KXE6F
FDE112KXE6F
FDE140KXE6F

**Remote control (option)**

Wired

RC-EX1A RC-E5 RCH-E3

Wireless

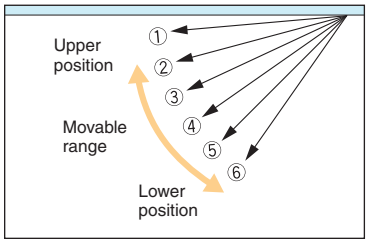
RCN-E-E

- **Small**
- **Light-weight**
- **Quiet**
- **Sleek, intelligent design**

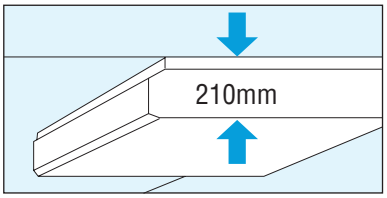
## Flap control system

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

*RCH-E3 is not applicable to the Flap control system.

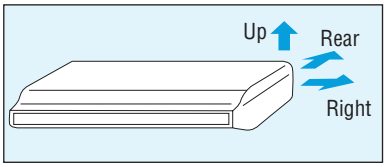



## New Slim Design




Slim and sleek design starting at just 28kgs in weight means quick, easy & neat installation.

## Installation Workability




Refrigerant piping can be routed in three directions (rear, up, right) & drain piping in left or right directions, allowing free layout to meet installation conditions.

# Specifications

| Item | | Model | FDE36KXE6F | FDE45KXE6F | FDE56KXE6F | FDE71KXE6F | FDE112KXE6F | FDE140KXE6F |
|---|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 3.6 | 4.5 | 5.6 | 7.1 | 11.2 | 14.0 |
| Nominal heating capacity | | kW | 4.0 | 5.0 | 6.3 | 8.0 | 12.5 | 16.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | | |
| Power consumption | Cooling | kW | 0.05-0.06 | | | 0.10-0.11 | 0.14-0.16 | 0.16-0.18 |
| | Heating | | 0.05-0.06 | | | 0.09-0.10 | 0.13-0.15 | 0.15-0.17 |
| Sound pressure level ※ | | dB(A) | Hi:39 Me:38 Lo:36 | | | Hi:41 Me:39 Lo:37 | Hi:44 Me:41 Lo:39 | Hi:46 Me:44 Lo:43 |
| 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 | | | 37 | 49 | |
| Air flow ※ | | CMM | Hi:10 Me:9 Lo:7 | | | Hi:16 Me:14 Lo:12 | Hi:26 Me:23 Lo:21 | Hi:29 Me:26 Lo:23 |
| Outside air intake | | | Not possible | | | | | |
| Air filter, Q'ty | | | Pocket Plastic net x2 (Washable) | | | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-E-E | | | | | |
| 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") | | |

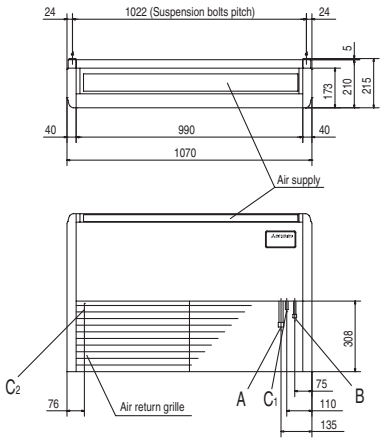
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

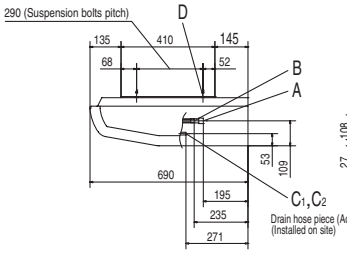
※ Powerful-Hi can be selected. Sound pressure level: FDE36/45/56 46dB(A), FDE71 50dB(A), FDE112 46dB(A), FDE140 50dB(A). Air flow: FDE36/45/56 11CMM, FDE71 18CMM, FDE112 28CMM, FDE140 32CMM.

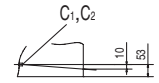
# Dimensions

All measurements in mm.

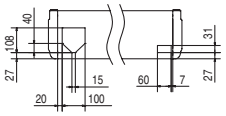
## FDE36KXE6F, 45KXE6F, 56KXE6F



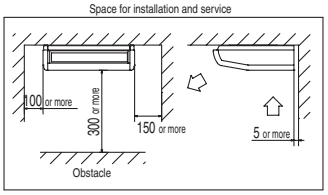




Note) The slope of drain piping inside the unit must take decline of 10mm.



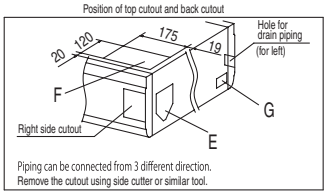

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø12.7 (1/2") (Flare) |
| B | Liquid piping | ø6.35 (1/4") (Flare) |
| C 1,2 | Drain piping | VP20 (I.D.20) |
| D | Hole for suspension bolt | (M10 or M8) |
| E | Back cutout | PE cover |
| F | Top cutout | Plate cover |
| G | Hole for drain piping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

Space for installation and service




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

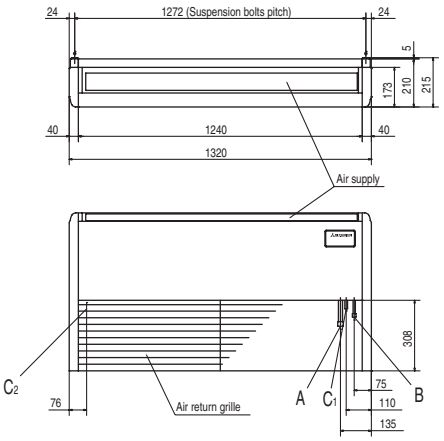
Position of top cutout and back cutout

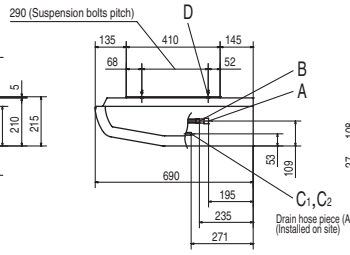


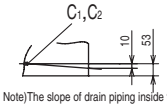

Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

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

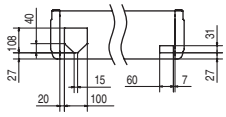
## FDE71KXE6F



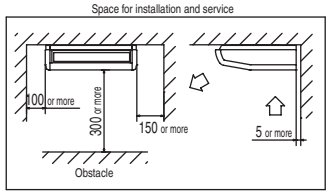




Note)The slope of drain piping inside the unit must take decline of 10mm.



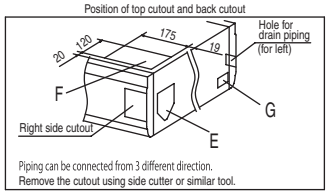

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C 1,2 | Drain piping | VP20 (I.D.20) |
| D | Hole for suspension bolt | (M10 or M8) |
| E | Back cutout | PE cover |
| F | Top cutout | Plate cover |
| G | Hole for drain piping(for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

Space for installation and service




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

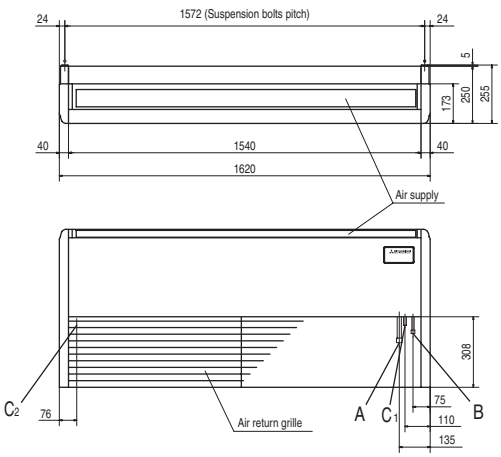
Position of top cutout and back cutout

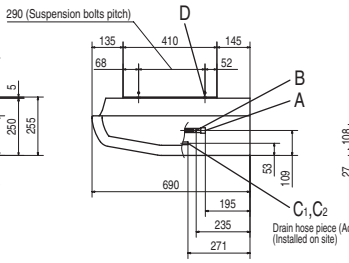


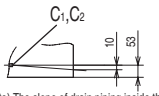

Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

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

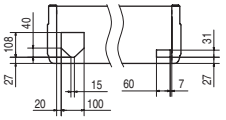
## FDE112KXE6F, 140KXE6F



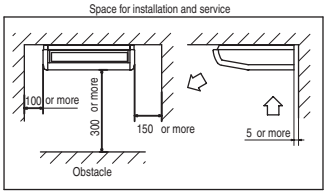




Note) The slope of drain piping inside the unit must take decline of 10mm.



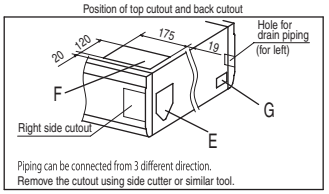

| Symbol | Content | |
|---|---|---|
| A | Gas piping | ø15.88 (5/8") (Flare) |
| B | Liquid piping | ø9.52 (3/8") (Flare) |
| C 1,2 | Drain piping | VP20 (I.D.20) |
| D | Hole for suspension bolt | (M10 or M8) |
| E | Back cutout | PE cover |
| F | Top cutout | Plate cover |
| G | Hole for drain piping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

Space for installation and service




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

Position of top cutout and back cutout




Piping can be connected from 3 different direction.
Remove the cutout using side cutter or similar tool.

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

# Floor Standing -2way- FDFW

**Model No.**

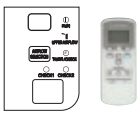
FDFW28KXE6F
FDFW45KXE6F
FDFW56KXE6F

**Remote control (option)**

Wired

RC-EX1A RC-E5 RCH-E3

Wireless



RCN-FW-E

## 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.

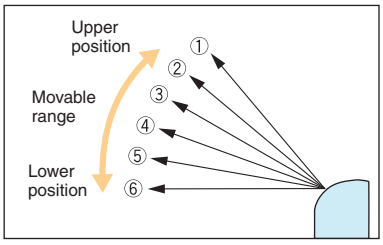
## Quiet Operation

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

## Flap control system

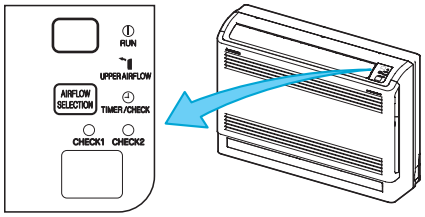
Selection of flap position is possible. A flap can be set at different angles.

*RCH-E3 is not applicable to the Flap control system.




## Convenient to use operation

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




(In case of use of wireless remote control)

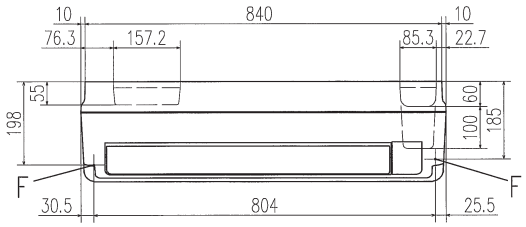
# Specifications

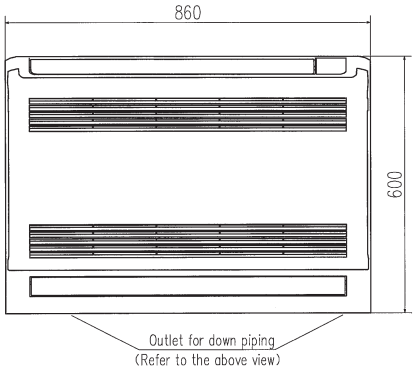
| Item | | Model | FDFW28KXE6F | FDFW45KXE6F | FDFW56KXE6F |
|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 2.8 | 4.5 | 5.6 |
| Nominal heating capacity | | kW | 3.2 | 5.0 | 6.3 |
| Power source | | | 1 Phase 220-240V, 50Hz | | |
| Power consumption | Cooling | kW | 0.02-0.02 | 0.02-0.02 | 0.03-0.03 |
| | Heating | | 0.02-0.02 | 0.02-0.02 | 0.03-0.03 |
| Sound 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) | | CMM | 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-EX1A, RC-E5, RCH-E3 wireless:RCN-FW-E | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | |

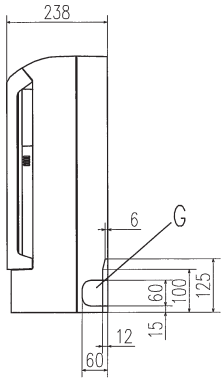
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB.
2. Sound pressure level indicates the value in an anechoic chamber. During operation these values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

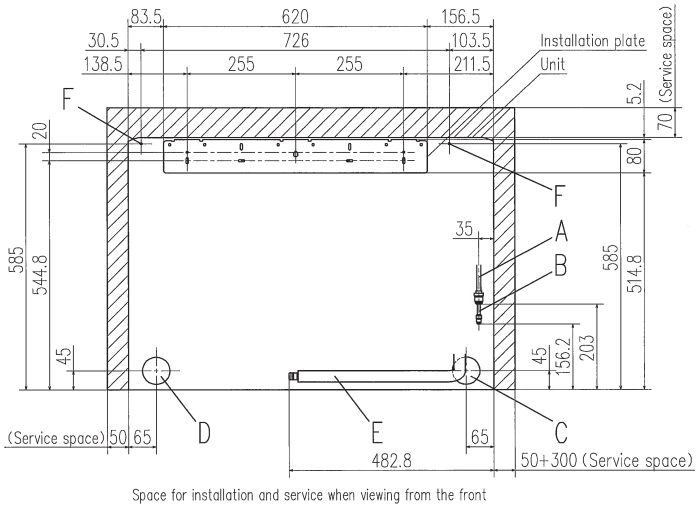
# Dimensions

All measurements in mm.




Space for installation and service when viewing from the front

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

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

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

**Remote control (option)**

Wired

RC-EX1A

RC-E5

RCH-E3

Wireless

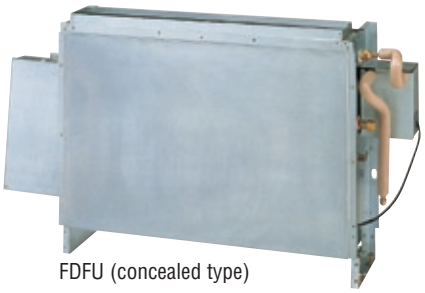
RCN-KIT3-E

**Model No.**

FDFL71KXE6F

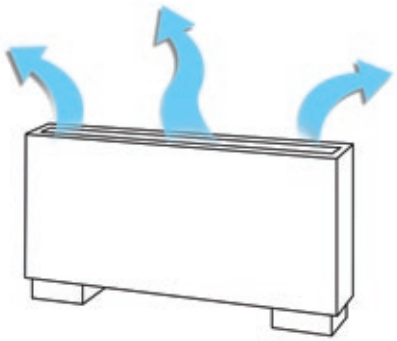
FDFU28KXE6F
FDFU45KXE6F
FDFU56KXE6F
FDFU71KXE6F

FDFL



FDFU (concealed type)

Compact design at 630mm height



Wider airflow for optimum comfort

## Specifications

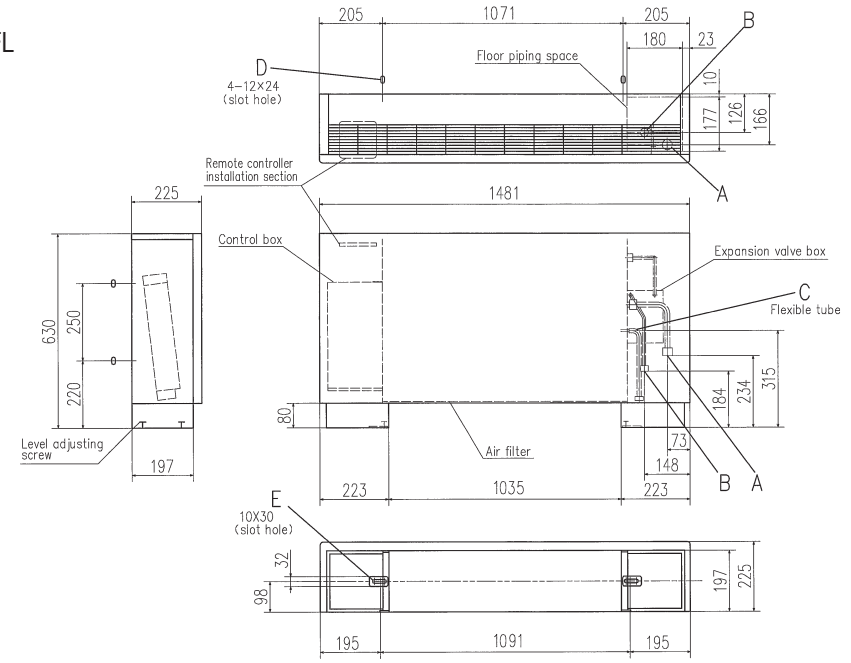
| Item | | Model | FDFL71KXE6F | FDFU28KXE6F | FDFU45KXE6F | FDFU56KXE6F | FDFU71KXE6F |
|---|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 7.1 | 2.8 | 4.5 | 5.6 | 7.1 |
| Nominal heating capacity | | kW | 8.0 | 3.2 | 5.0 | 6.3 | 8.0 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | |
| Power consumption | Cooling | kW | 0.09-0.10 | 0.09-0.10 | | | |
| | Heating | | 0.09-0.10 | 0.09-0.10 | | | |
| Sound 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) | | CMM | 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-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") |

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

# Dimensions

All measurements in mm.

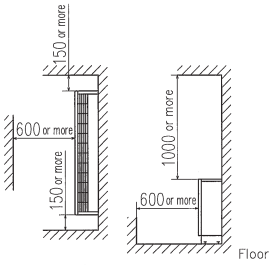
## FDFL



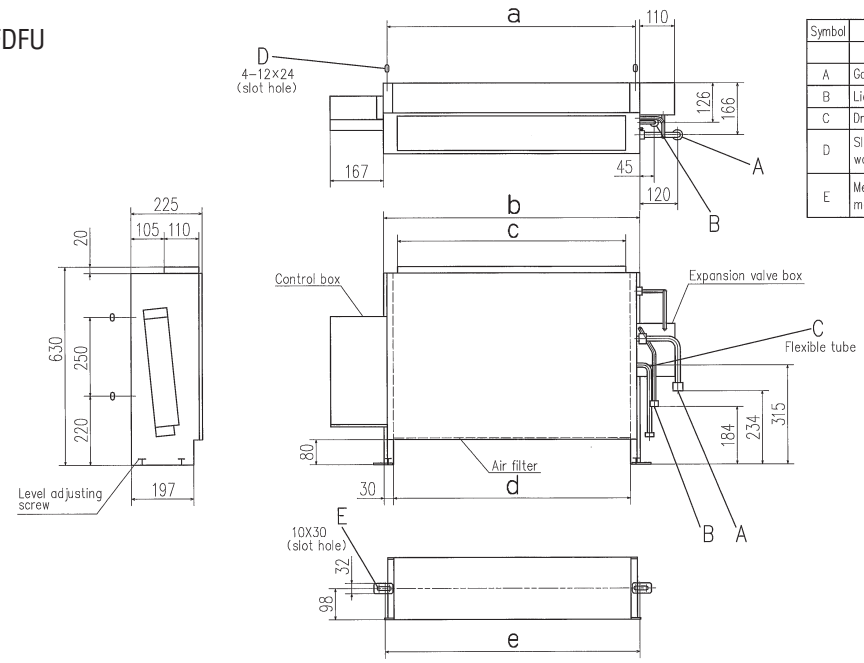

| Symbol | Content | |
|---|---|---|
| | Model | FDFL71KXE6F |
| A | Gas piping (Accessory) | ϕ15.88 (5/8") (Flare) |
| B | Liquid piping | ϕ9.52 (3/8") (Flare) |
| C | Drain piping (Accessory) | PT20A female screw, 360mm |
| D | Slot hole for wall mounting | (M10) |
| E | Metal plate for floor mounting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

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

Space for installation and service



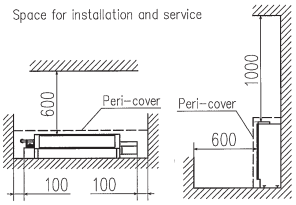

## FDFU




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

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

Space for installation and service




## Dimension Table

Unit:mm

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

# Outdoor Air Processing unit
# FDU-F

**Model No.**
FDU500FKXE6F
FDU850FKXE6F
FDU1300FKXE6F
FDU1800FKXE6F

Fan control kit (option)
(100~200Pa)
**U-FCRB**

**Remote control (option)**

Wired

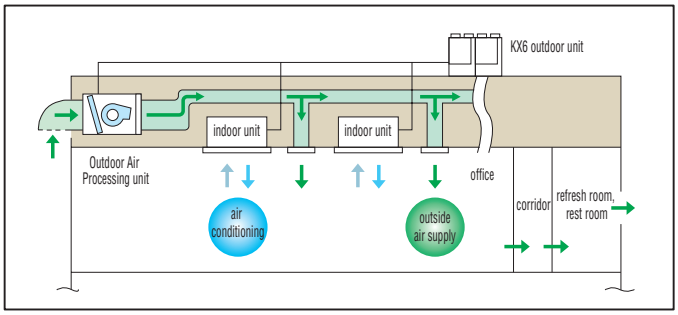
**RC-EX1A** **RC-E5** **RCH-E3**

Wireless

**RCN-KIT3-E**

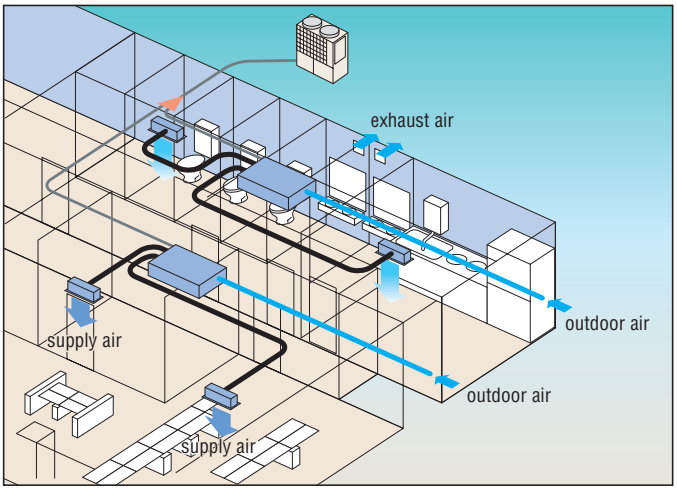
## Air conditioning and intake of outdoor air are in the same system

Outdoor Air processing unit can be connected in a KX6 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 360mm 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.



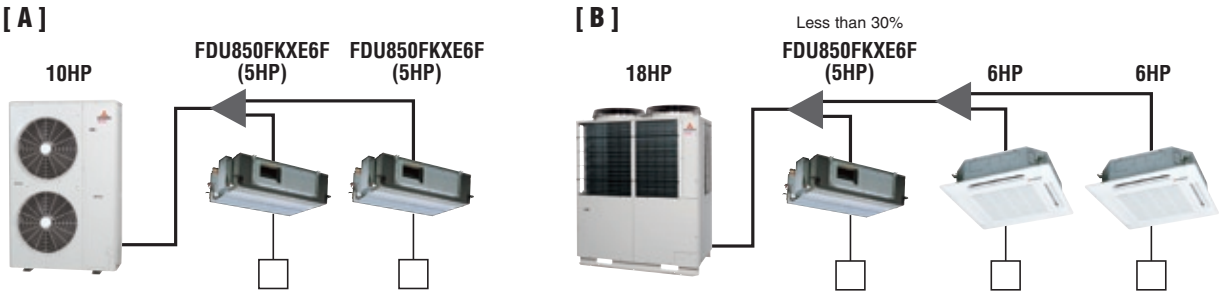

(1) This unit is the specific unit for processing the outdoor air temperature closer to the room temperature. For conditioning the room temperature a dedicated air-conditioner is required additionally.
(2) This unit monitors the outdoor air temperature and controls thermostat ON/OFF at the setting temperature 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 KX6 series

FDU-F series are connectable to 8~48HP KX6 outdoor units, not connectable to 4~6HP.
8 ~ 48 HP : Yes , 4 ~ 6 HP : No

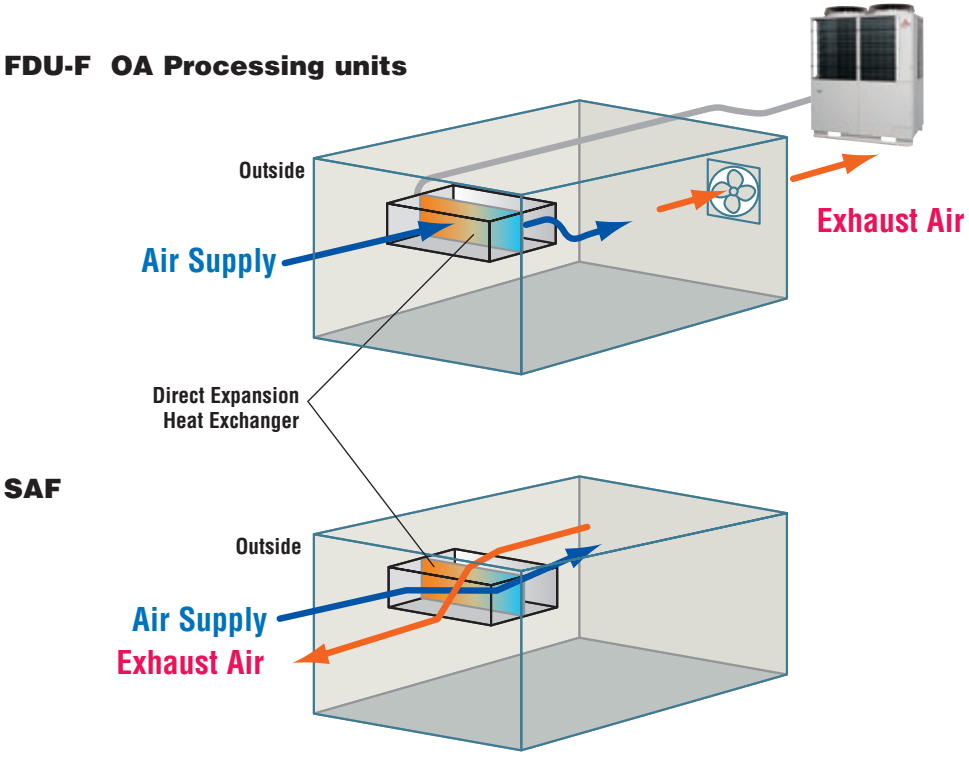
## Combination with KX6 series

| | case | Combination |
|---|---|---|
| A | In case OA processing units only are connected with KX6 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 KX6 outdoor unit. | 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. |




## 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 KX6 refrigerant system and exhaust air is discharged to outside of the room.



# Specifications

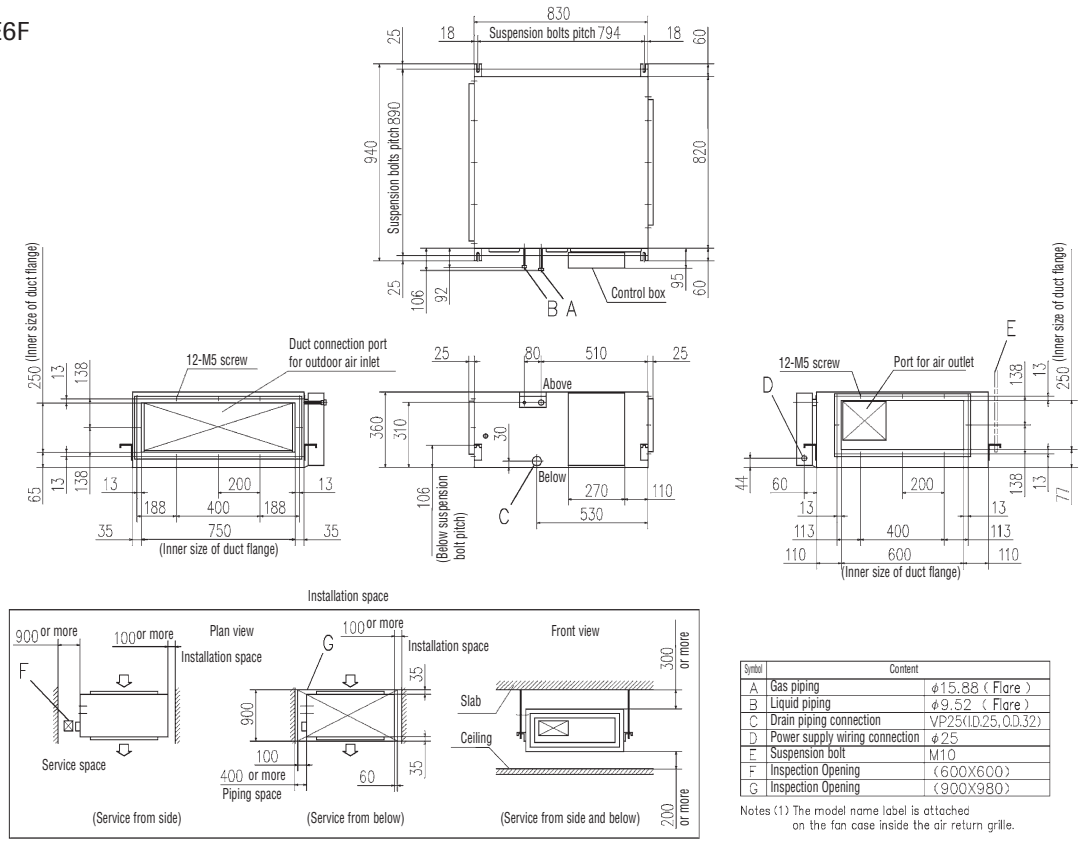
| Item | | Model | FDU500FKXE6F | FDU850FKXE6F | FDU1300FKXE6F | FDU1800FKXE6F |
|---|---|---|---|---|---|---|
| Nominal cooling capacity | | kW | 9.0 | 14.0 | 22.4 | 28.0 |
| Nominal heating capacity | | kW | 4.2 | 7.0 | 10.9 | 14.8 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | |
| Power consumption | Cooling | kW | 0.11 | 0.16 | 0.27 | 0.31 |
| | Heating | | 0.11 | 0.16 | 0.27 | 0.31 |
| Sound pressure level | | dB(A) | 38 | 41 | 43 | 46 |
| Exterior dimension HxWxD | | mm | 360x820x830 | 360x1200x830 | 360x1570x830 | |
| Net weight | | kg | 48 | 62 | 82 | 84 |
| Air flow (Standard) | | CMM | 8.5 | 14 | 22 | 30 |
| | | CMH | 510 | 840 | 1320 | 1800 |
| External static pressure | | Pa | 200 | | | |
| Air filter, Q'ty | | | Procure locally | | | |
| Remote control(option) | | | wired:RC-EX1A, RC-E5, RCH-E3 wireless:RCN-KIT3-E | | | |
| Installation data Refrigerating piping size | | mm (in) | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") | | Liquid line:ø9.52(3/8") Gas line:ø19.05(3/4") | Liquid line:ø9.52(3/8") Gas line:ø22.22(7/8") |

1. The data are measured at 33ºCDB 28ºCWB (68%RH) during cooling and 0ºCDB-2.9ºCWB (50%RH) during heating (no frost). External static pressure of indoor unit with optional fan controlling kit "U-FCRB" is 100Pa.
2. Temperature range of outdoor air must be 20~40ºCDB (32ºCWB) during cooling and -10~24ºCDB during heating.
3. Operation sound is measured in an anechoic room based on JIS standard. In case of actual room installation, it usually becomes higher than the displayed value due to the surrounding noise and echo.
4. The total connection capacity of the other standard air conditioning units and the outdoor air processing units must be from 50% to 100% (the total includes the outdoor air processing unit). The connection capacity of the outdoor air processing unit must not exceed 30% of the capacity of the outdoor unit.
5. Single outdoor air processing unit can be used alone. The connection capacity of the outdoor air processing unit must be from 50% to 100% of the total capacity of the outdoor unit.
6. Single outdoor air processing unit can be used alone. Maximum number of outdoor air processing units that can be connected to the outdoor unit is 2units.
7. Values of sound pressure level become increased 5dB(A), when external static pressure is 200Pa (factory setting).
8. Values of air flow volume are those at external static pressure 200Pa (factory setting).

# Dimensions

All measurements in mm.

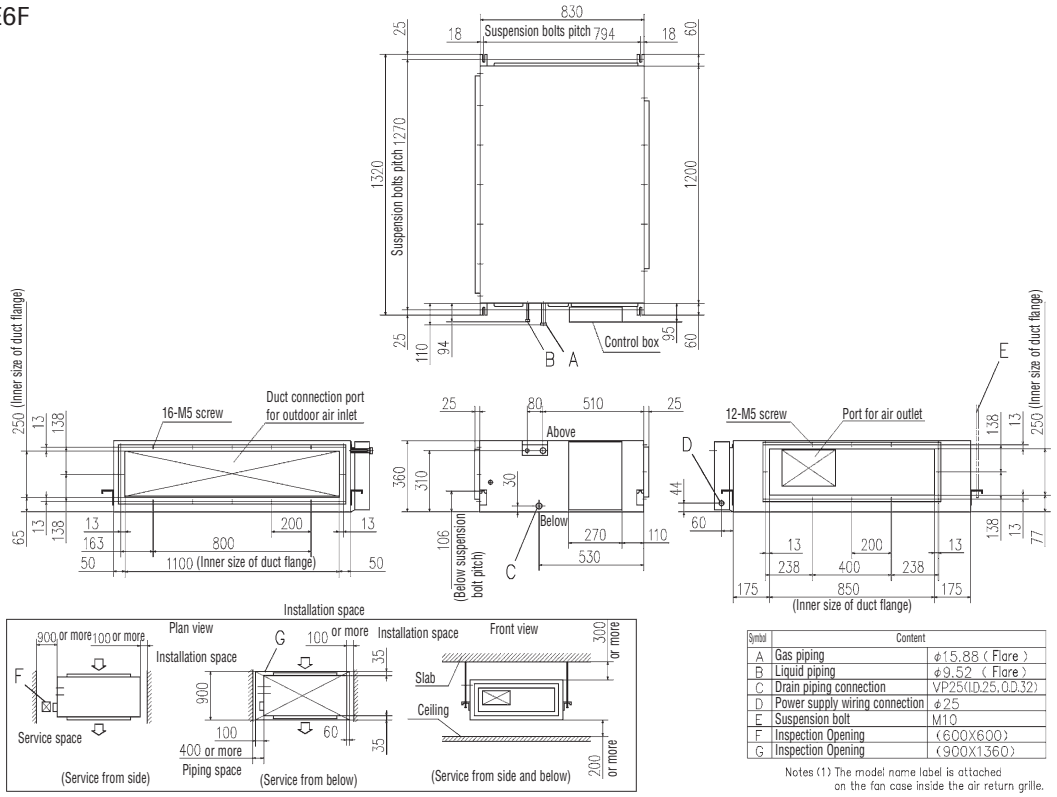
FDU500FKXE6F




| Symbol | Content | |
|---|---|---|
| A | Gas piping | ϕ15.88 ( Flare ) |
| B | Liquid piping | ϕ9.52 ( Flare ) |
| C | Drain piping connection | VP25(I.D.25, O.D.32) |
| D | Power supply wiring connection | ϕ25 |
| E | Suspension bolt | M10 |
| F | Inspection Opening | (600X600) |
| G | Inspection Opening | (900X980) |

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

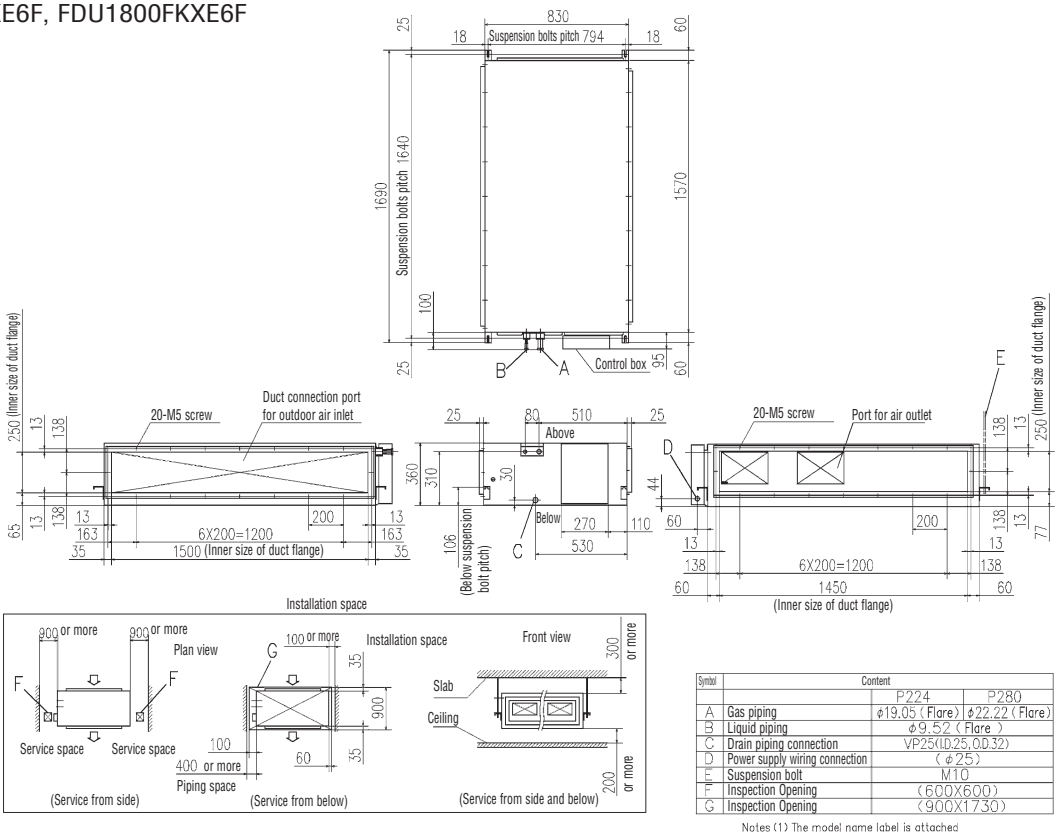
## FDU850FKXE6F




| Symbol | Content | |
|---|---|---|
| A | Gas piping | φ15.88 (Flare) |
| B | Liquid piping | φ9.52 (Flare) |
| C | Drain piping connection | VP25(ID.25,OD.32) |
| D | Power supply wiring connection | φ25 |
| E | Suspension bolt | M10 |
| F | Inspection Opening | (600X600) |
| G | Inspection Opening | (900X1360) |

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

## FDU1300FKXE6F, FDU1800FKXE6F




| Symbol | Content | | |
|---|---|---|---|
| | | P224 | P280 |
| A | Gas piping | φ19.05 (Flare) | φ22.22 (Flare) |
| B | Liquid piping | φ9.52 (Flare) | |
| C | Drain piping connection | VP25(ID.25,OD.32) | |
| D | Power supply wiring connection | (φ25) | |
| E | Suspension bolt | M10 | |
| F | Inspection Opening | (600X600) | |
| G | Inspection Opening | (900X1730) | |

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

# Fresh Air Ventilation and Heat Exchange unit SAF-E4

**Model No.**
SAF250E4
SAF350E4
SAF500E4
SAF800E4
SAF1000E4

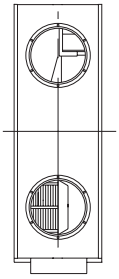
## Re; Building Regulations Part L2

The Part L2 (April 2006) regulations limit the amount of electrical/gas power to be used to provide heating or cooling in commercial buildings. Therefore the building designer needs to select energy efficient heating/cooling equipment, and to minimise energy losses through ventilation systems.

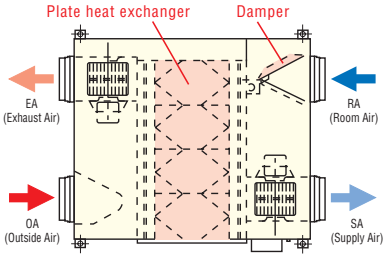
The SAF recovers heat energy which would otherwise be exhausted to atmosphere, and uses this energy to warm the air entering the building. The reverse happens in warmer climates, where the exhausted cool air is used to partially cool the incoming air.

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

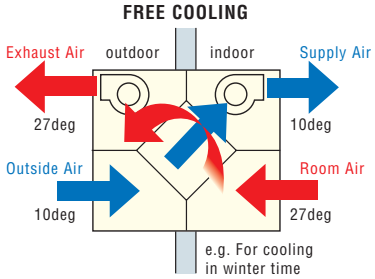
The inclusion of the SAF energy recovery ventilation units in the building design, will reduce the total amount of carbon emissions.



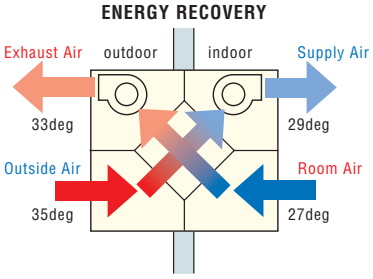
Structure (SAF1000E4)




Principle of operation (simple ventilation)




Principle of operation (heat exchanging)



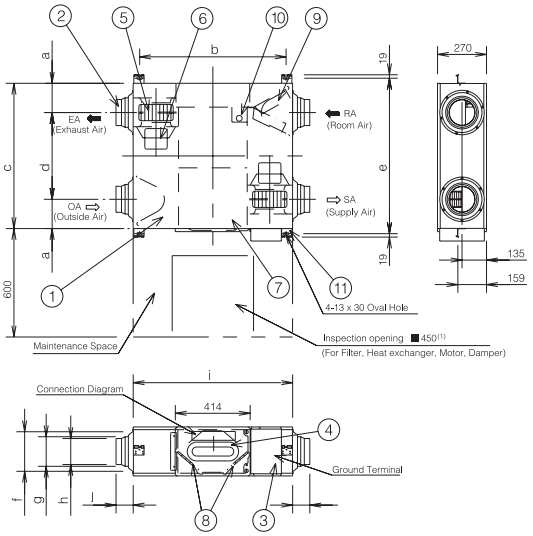

## Specifications

| Item | | | Model | SAF250E4 | SAF350E4 | SAF500E4 | SAF800E4 | SAF1000E4 |
|---|---|---|---|---|---|---|---|---|
| Power source | | | | 1 Phase 220-240V, 50Hz | | | | |
| Exterior dimensions Height x Width x Depth | | | mm | 270x882x599 | 270x882x804 | 270x962x904 | 388x1322x884 | 388x1322x1135 |
| Exterior appearance | | | | Galvanised steel sheet | | | | |
| | Power input | | W | 99-114 | 124-137 | 169-188 | 309-359 | 360-399 |
| | Running current | | A | 0.46-0.48 | 0.59-0.60 | 0.79-0.81 | 1.48-1.50 | 1.85-1.93 |
| Capacity | UHi | Enthalpy exchange efficiency Cooling | % | 63 | 66 | 62 | 65 | |
| | | Enthalpy exchange efficiency Heating | | 70 | 69 | 67 | 71 | |
| | | Temperature exchange efficiency | | 75 | | | | |
| | Hi | Enthalpy exchange efficiency Cooling | | 63 | 66 | 62 | 65 | |
| | | Enthalpy exchange efficiency Heating | | 70 | 69 | 67 | 71 | |
| | | Temperature exchange efficiency | | 75 | | | | |
| | Lo | Enthalpy exchange efficiency Cooling | | 66 | 69 | 77 | 68 | 68 |
| | | Enthalpy exchange efficiency Heating | | 73 | 71 | 67 | 74 | 73 |
| | | Temperature exchange efficiency | | 77 | 77 | 75 | 76 | 76 |
| Motor & Q'ty | | | kW | 0.02x2 | 0.044x2 | 0.062x2 | 0.117x2 | 0.137x2 |
| Air handling equipment Fan type & Q'ty | | | | Sirocco fan x 2 | | | | |
| Air flow | | UHi | $m^3/h$ | 250 | 350 | 500 | 800 | 1000 |
| | | Hi | | 250 | 350 | 500 | 800 | 1000 |
| | | Lo | | 170 | 280 | 370 | 650 | 810 |
| Available static pressure | | UHi | Pa | 90 | 95 | 105 | 140 | 90 |
| | | Hi | | 80 | 65 | 70 | 110 | 55 |
| | | Lo | | 37 | 42 | 38 | 70 | 35 |
| Remote control | | | | Standard equipment | | | | |
| Air filter | Out take intake air | | | Protection for element (Washable) PS400 | | | | |
| | Exhaust air | | | | | | | |

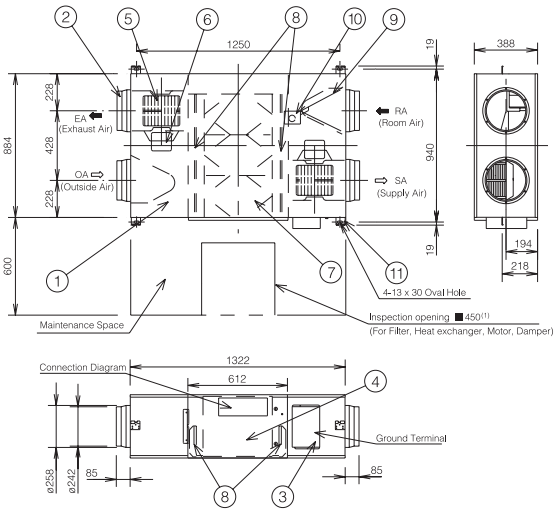
# Dimensions

All measurements in mm.

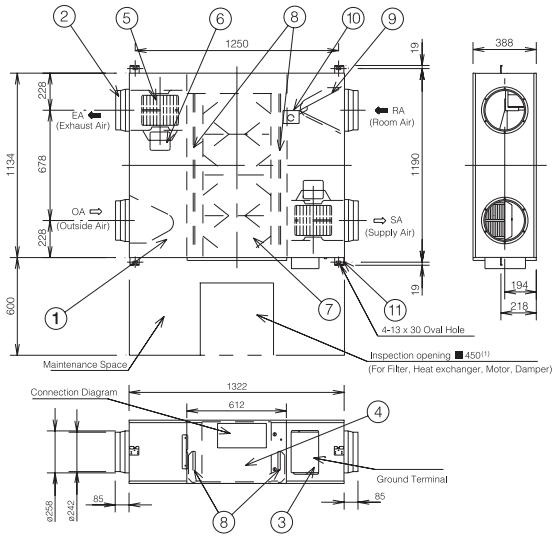
## SAF250E4,350E4,500E4



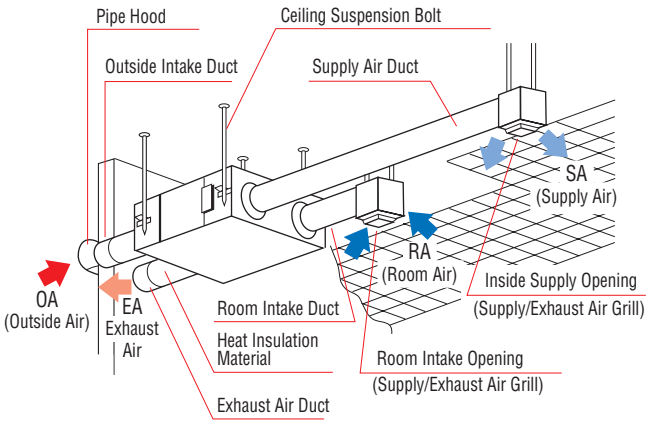

## SAF800E4




## SAF1000E4




## Installation reference




| NO. | Name | Quantity | Material | Remarks |
|---|---|---|---|---|
| 1 | Frame | 1 | Zinc-plated steel | |
| 2 | Adaptor | 4 | ABS Resin | |
| 3 | Electrical Equipment Box | 1 | | |
| 4 | Inspection Cover | 1 | Zinc-plated steel | |
| 5 | Fan | 2 | ABS Resin | |
| 6 | Motor | 2 | | |
| 7 | Heat Exchange Element | 2 | Flame Retardant Paper + Plastic | Air to air Heat Exchanger |
| 8 | Filter | 2 | Non-woven Cloth | Collection Efficiency Gravimetric Method 82% |
| 9 | Damper | 1 | | |
| 10 | Damper Motor | 1 | | |
| 11 | Ceiling Suspension Fixture | 4 | Zinc-plated Steel | |

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

### Dimension table

Unit:mm

| Model | a | b | c | d | e |
|---|---|---|---|---|---|
| SAF250E4 | 142 | 810 | 599 | 315 | 655 |
| SAF350E4 | 162 | 810 | 804 | 480 | 860 |
| SAF500E4 | 202 | 890 | 904 | 500 | 960 |

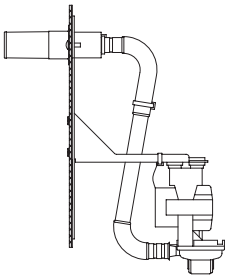
| Model | f | g | h | i | j |
|---|---|---|---|---|---|
| SAF250E4 | ø219 | ø164 | ø144 | 882 | 95 |
| SAF350E4 | ø219 | ø164 | ø144 | 882 | 95 |
| SAF500E4 | ø246 | ø210 | ø194 | 962 | 107 |

# 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)**

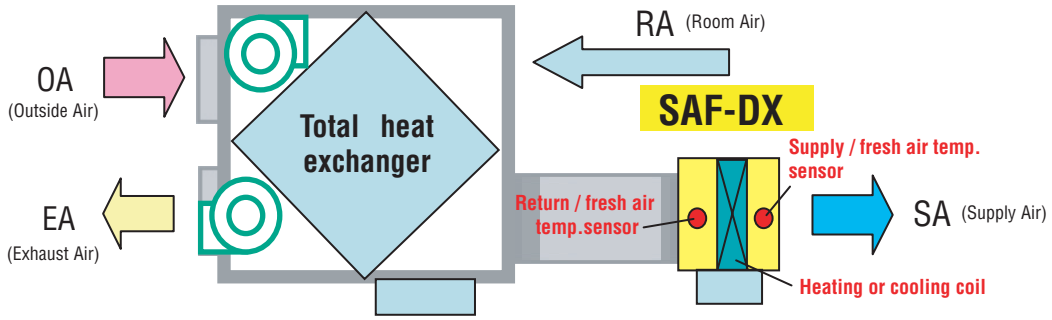
Wired

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

Wireless

**RCN-KIT3-E**

- SAF-DX is a heating or cooling coil incorporating MHI KX6 series controls. It can be used in combination with our SAF series of total heat exchanger.
- Combination of SAF-DX together with other KX6 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 KX6 indoor units (see above). Connection to all superlink controls is also possible.
- Optional condensate lift mechanism is also available (600mm height).
- Return air temp. control or supply air temp. control can be selectable.




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

# Specifications

| Item | | Model | SAF-DX250E6 | SAF-DX350E6 | SAF-DX500E6 | SAF-DX800E6 | SAF-DX1000E6 |
|---|---|---|---|---|---|---|---|
| Nominal cooling capacity *1 | | kW | 2.0 | 2.8 | 3.6 | 5.6 | 6.3 |
| Nominal heating capacity *2 | | kW | 1.8 | 2.2 | 2.8 | 4.5 | 5.6 |
| Capacity code | | | 22 | 28 | 36 | 56 | 71 |
| Power source | | | 1 Phase 220-240V, 50Hz | | | | |
| Power consumption | Cooling | W | 7.2 | | | | |
| | Heating | | 7.2 | | | | |
| Running current | Cooling | A | 0.05 | | | | |
| | Heating | | 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) | | CMH | 250 | 350 | 500 | 800 | 1000 |
| Internal resistance | | Pa | 38 | 66 | | | |
| Remote control(option) | | | wired: RC-E5, RCH-E3 wireless: RCN-KIT3-E | | | | |
| Installation data Refrigerant piping size | | mm(in) | Liquid line:ø6.35(1/4") Gas line:ø9.52(3/8") | | Liquid line:ø6.35(1/4") Gas line:ø12.7(1/2") | | Liquid line:ø9.52(3/8") Gas line:ø15.88(5/8") |

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

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

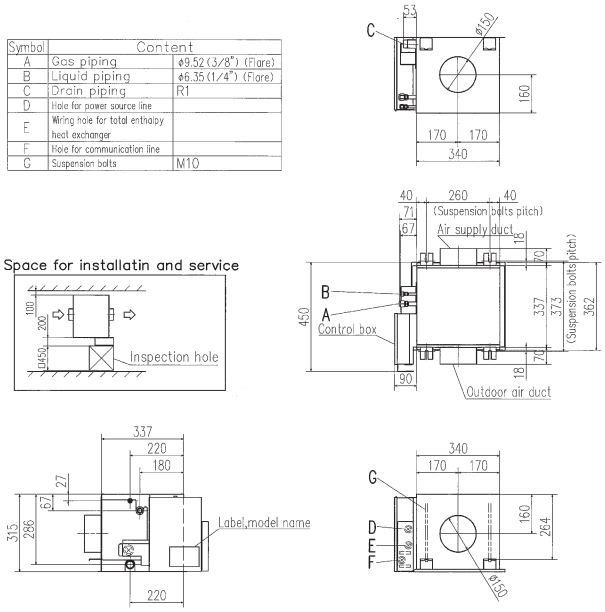
(2) This air-conditioner is manufactured and tested in conformity with ISO-T1 "UNITARY AIR-CONDITIONERS".

# Dimensions

All measurements in mm.

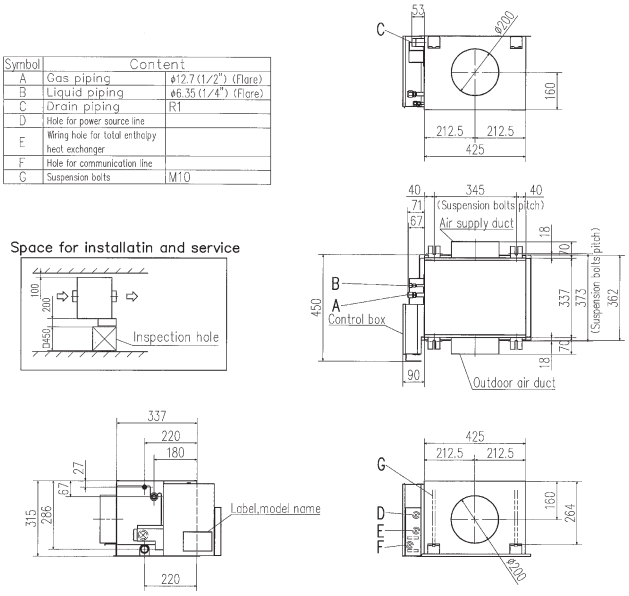
## SAF-DX250E6,350E6

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



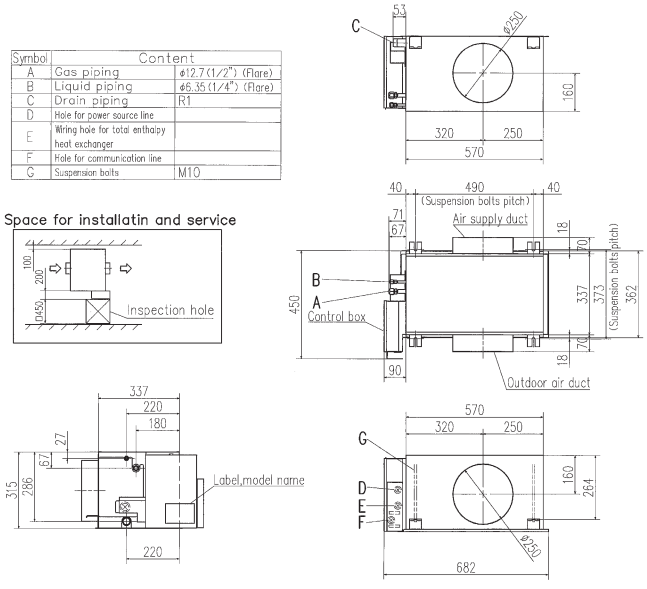

## SAF-DX500E6

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



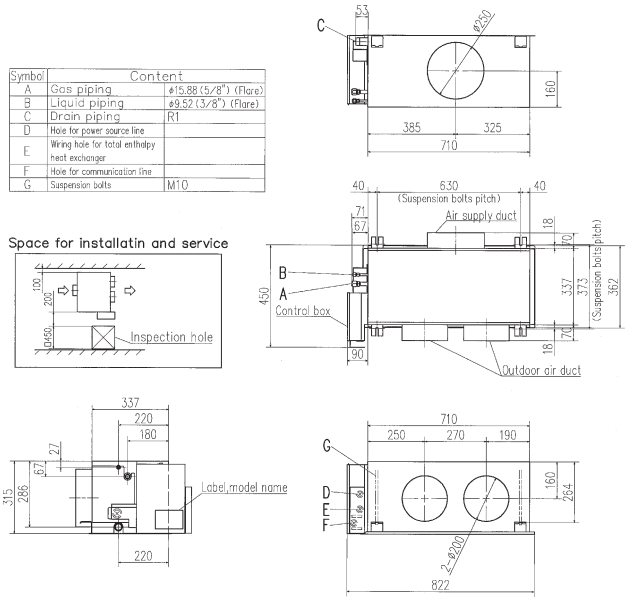

## SAF-DX800E6

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




## SAF-DX1000E6

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



# Control Systems <Individual control>

## Remote Control line up (except SAF)

| | indoor unit | remote control |
|---|---|---|
| wired | all models | RC-EX1A |
| | | RC-E5 |
| | | RCH-E3 |

| | indoor unit | remote control | indoor unit | remote control | indoor unit | remote control |
|---|---|---|---|---|---|---|
| wireless | FDT | RCN-T-36W-E | FDTS | RCN-TS-E | FDE | RCN-E-E |
| | FDTC | RCN-TC-24W-ER | FDK22~56 | RCN-K-E | FDFW | RCN-FW-E |
| | FDTW | RCN-TW-E | FDK71 | RCN-K71-E | others* | RCN-KIT3-E |

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

## Wired remote control with weekly timer (option)

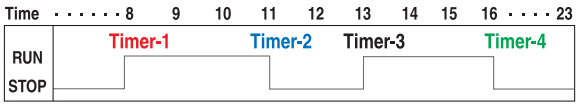
### RC-E5

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 and the 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

## Wireless remote control (option)

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

**RCN-T-36W-E, RCN-TC-24W-ER**

**RCN-TW-E**

**RCN-TS-E**

**RCN-K-E, RCN-K71-E**

**RCN-E-E**

**RCN-FW-E**

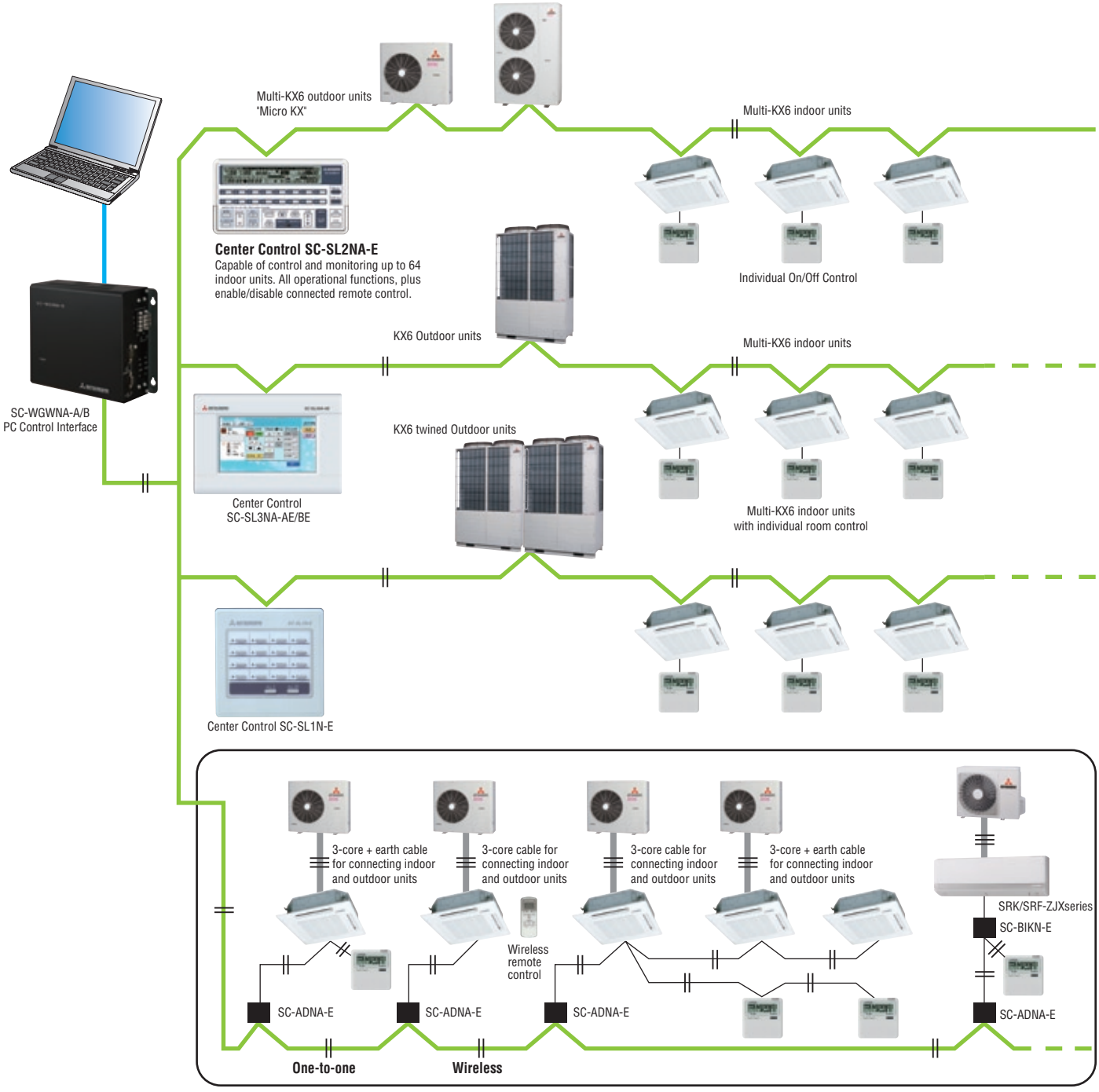
**RCN-KIT3-E**

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

# <Control System>
## SUPERLINK-Ⅱ

MHI has now combined simplicity of installation with our highly sophisticated Superlink-Ⅱ control system, to offer building owners and occupiers a comprehensive control and management system, while providing complete commissioning and service maintenance assistance for installers and service engineers. The Superlink-Ⅱ network utilises two wire, non-polar cable - for further details of wiring.

Superlink-Ⅱ is an advanced high speed data transmission system that can connect up to 128 indoor units and 32 outdoor units as a network. MHI offers a wide range of control options for the Superlink-Ⅱ network to suit any application large or small, as well as connection to new or existing building management systems. Individual MHI split systems can also be integrated on to the Superlink-Ⅱ network using SC-ADNA-E.



# <Central Control>

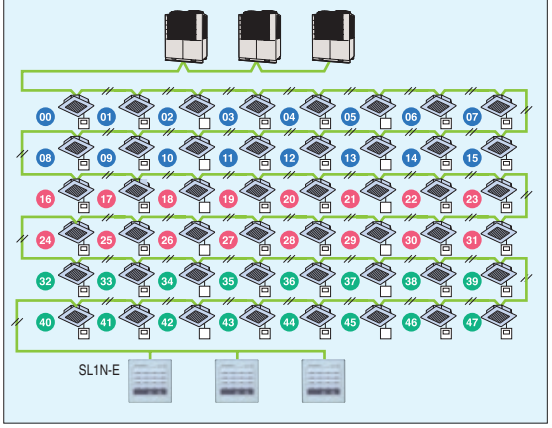
## SC-SL1N-E

**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.

**Example of control by a centre control SC-SL1N-E**

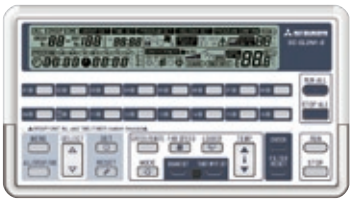



More than one unit (up to 16) can be controlled for individual or collective start/stop operation and indication of unit statuses such as in operation or in need of service.

• Outer dimensions: H120 x W120 x D15+62*mm.
62* is the measurement including the part contained in a recess.

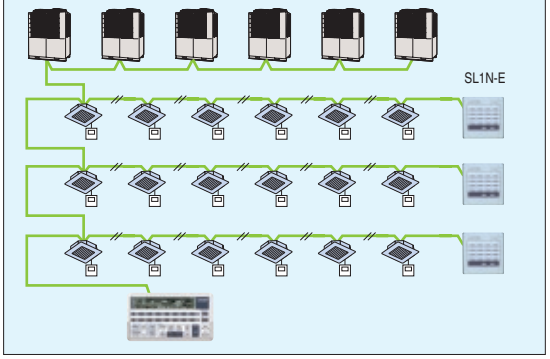
## SC-SL2NA-E

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



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

**Example of control by a centre control SC-SL2NA-E**




An SC-SL2NA-E performs the start/stop control, monitoring and mode setting of up to 64 units. It is a high quality air conditioner control system that allows up to 64 indoor units to be freely grouped into 1 to 16 groups. It allows not only the start/stop control but also the monitoring, display of operation statuses such as in operation or in need of service and mode setting such as switching of operation modes of connected units collectively, by group or individually.

• Outer dimensions: H120 x W215 x D25+35*mm.
35* is the measurement including the part contained in a recess.

### Combination of Center Control and BMS interface unit

Yes:connectable No:not connectable

| | SC-SL1N-E | SC-SL2NA-E | SC-SL3NA-AE/BE | SC-WGWNA-A/B | SC-BGWNA-A/B | SC-LGWNA-A |
|---|---|---|---|---|---|---|
| SC-SL1N-E | Yes(∗1) | Yes(∗1) | Yes(∗1) | Yes(∗2) | Yes(∗2) | Yes(∗2) |
| SC-SL2NA-E | Yes(∗1) | Yes(∗1) | Yes(∗1) | Yes(∗2) | Yes(∗2) | Yes(∗2) |
| SC-SL3NA-AE/BE | Yes(∗1) | Yes(∗1) | Yes(∗1) | Yes(∗2) | Yes(∗2) | Yes(∗2) |
| SC-WGWNA-A/B | Yes(∗2) | Yes(∗2) | Yes(∗2) | No | No | No |
| SC-BGWNA-A/B | Yes(∗2) | Yes(∗2) | Yes(∗2) | No | No | No |
| SC-LGWNA-A | Yes(∗2) | Yes(∗2) | Yes(∗2) | No | No | No |

(∗1) Number of units in combination of SC-SL1N-E, SC-SL2NA-E and SC-SL3NA-AE/BE

| | Connectable number of controls in one superlink-Ⅱ network | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| SC-SL3NA-AE/BE | 0 | | | | 1 | | | 2 | | |
| SC-SL2NA-E | 0 | 1-2 | 3-4 | 5-8 | 0-2 | 3-4 | 5-8 | 0-2 | 3-4 | 5-8 |
| SC-SL1N-E | 12 | 8 | 4 | 0 | 8 | 4 | 0 | 8 | 4 | 0 |

Regarding previous Superlink, refer to Technical Manual '06 SC-T-111, '08 SC-T-119.

(∗2) Number of units in combination of SC-WGWNA-A/B, SC-BGWNA-A/B, SC-LGWNA-A, SC-SL3NA-AE/BE, SC-SL2NA-E and SC-SL1N-E

| Connectable number of controls in one superlink-Ⅱ network | | | |
|---|---|---|---|
| SC-WGWNA-A/B or SC-BGWNA-A/B or SC-LGWNA-A | SC-SL1N-E | SC-SL2NA-E | SC-SL3NA-E-AE/BE |
| 1 | 0-4 | 0-1 | 0-1 |

Regarding previous Superlink, refer to Technical Manual '06 SC-T-111, '08 SC-T-119.

# SC-SL3NA-AE/BE

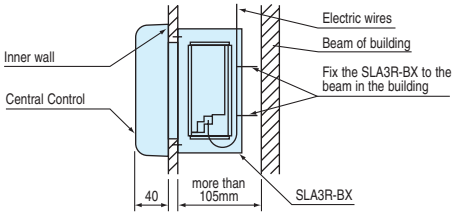
MHI introduces the full colour touch screen central control SC-SL3NA-AE/BE, with 7 inch interactive LCD display. Offers control, monitoring, scheduling and service/maintenance functions for up to 128 indoor units.

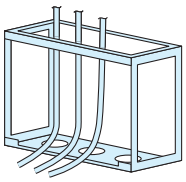
Indoor units can be controlled, scheduled, monitored and interrogated either individually, as groups or as blocks of groups with the following functions:


| Control | Monitoring | Scheduling | Administration/Service |
|---|---|---|---|
| Run/Stop | Operating state | Yearly schedule | Block definition |
| Mode (cool/heat/fan) | Mode | Today's schedule | Group definition |
| Set temperature | Set temperature | Special day schedule | Unit definition |
| Operation permitted/prohibited | Room temperature | | Time and date setting |
| Fan speeds | Operation enabled | | Alarm history |
| Air direction | Fan speed | | Energy consumption calculation period |
| Filter reset | Air direction | | Energy consumption cumulative operation time |
| Filter sign | | | |
| Maintenance (1, 2 or back-up) | | | Demand control |
| Breakdown | | | Emergency stop |
| | | | Power failure recovery control |

## SLA3R-BX Control Box (option)

In case SC-SL3NA-AE/BE is fixed in the wall, use SLA3R-BX as optional parts.

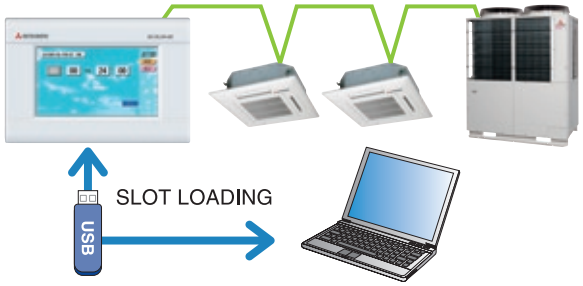


## Electric power calculation function:

(for SC-SL3NA-BE only)

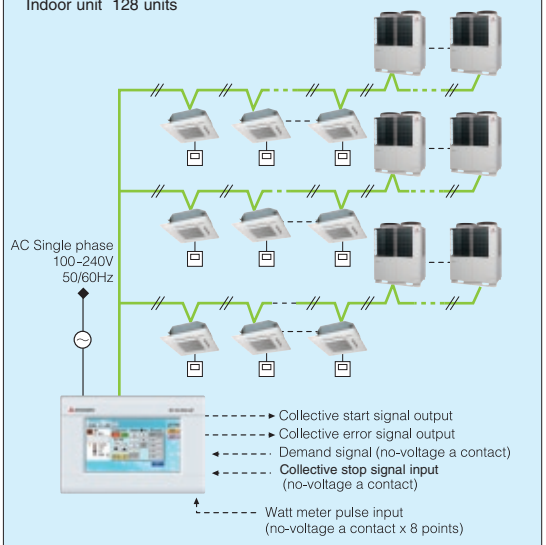
SC-SL3NA-BE gives outputs as "electric power consumption kW data -each indoor unit, each group, each SUPERLINK-Ⅱ system and each power pulse system-" and uses USB memory.
The data can be edited by using the software that comes with the unit.




| | SC-SL3NA-BE |
|---|---|
| Method of data saving | USB |
| Calculation software | Standard |
| Air-conditioner power proportional distribution pulse input | 8 systems |
| Connecting indoor units number (Maximum) | 128 |

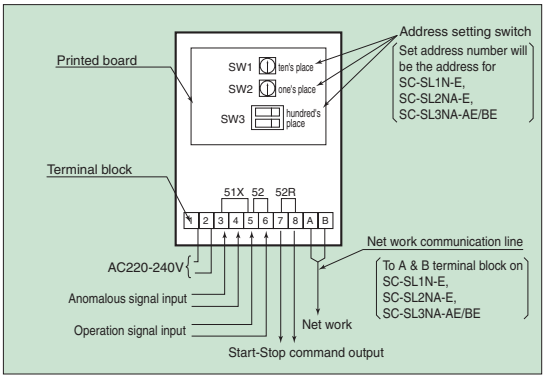
## System diagram

Indoor unit 128 units




## SC-GIFN-E Interface kit NEW

- 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-SL3NA-AE/BE, you can start-stop, operate & monitor the operation of applicable products.




| Item / Model | | SC-SL3NA-AE/SC-SL3NA-BE |
|---|---|---|
| Ambient temperature during use | | 0 ~ 40℃ |
| Power supply | | 1 Phase 100-240V 50/60Hz |
| Power consumption | | 18W |
| External dimensions (Height x Width x Depth) | | 162mm x 240mm x 108mm |
| Net weight | | 2.0kg |
| Number of connectable units (indoor units) | | up to 128 units |
| LCD touch panel | | Colour LCD, 7 inches wide |
| Inputs | SL (Superlink) signal inputs | 3 systems |
| | Gas, Power pulse input* | 8-point pulse width 100ms or more |
| | Emergency stop signal input* | 1 point non-voltage a contact input continuous input (closed, forced stop) |
| | Demand signal input* | 1 point non-voltage a contact input continuous input (closed, demand control) |
| Outputs | Simultaneous operation output | 1 point maximum rated current 40mA, 24 V During full stop; Open. If even one unit is operating; Closed |
| | Simultaneous error output | 1 point maximum rated current 40mA, 24 V Normal; closed. If even one unit is abnormal; Open |

* The receiving side power supply is DC 12V (10mA).
The air conditioning charges calculations of this unit are based on OIML, the international standard.
* In case embodying in a wall, please be sure to special box SLA3R-BX (option).

# <PC windows central control>

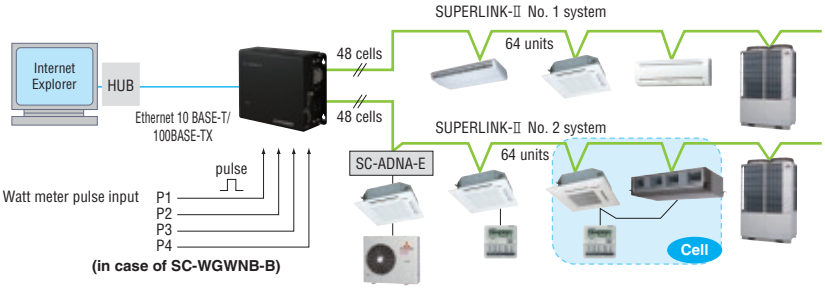
## SC-WGWNB-A/SC-WGWNB-B (Web gateway)

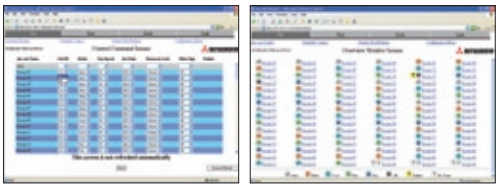
(SC-WGWNB-B is with electric power calculation function)

**Production by order**

Control and monitoring of up to 96 cells (some cells can have two or more indoor units and total number of indoor units can be up to 128 units) centralised to a network PC using the Superlink-Ⅱ web gateway. Simple installation is assured with no special software requirements, operation is via Internet Explorer. A low power embedded CPU and compact flash ROM ensure a large storage capacity with high reliability (no moving parts such as a PC fan, etc). An IP address filter function combined with three-level user authentication check also ensures security.

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



PC requirements: Windows XP or Windows Vista or Windows 7.
Monitor resolution 1024 x 768.
Web browser requirements: Internet Explorer 6.0 or 7.0.

# <BMS interface unit>

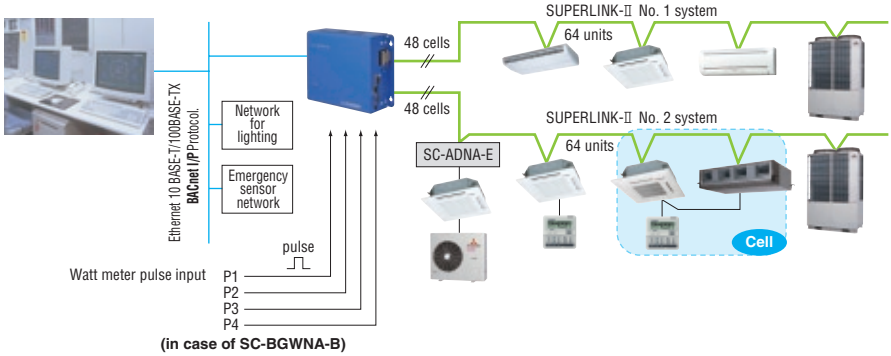
## SC-BGWNA-A/A1, SC-BGWNA-B (BACnet gateway)

**Production by order**

(SC-BGWNA-A1 is with BLT Certification, SC-BGWNA-B is with electric power calculation function)

SC-BGWNA-A/B is an interface device that converts MHI's Superlink-Ⅱ communication data to BACnet code. Control and monitoring functions of the a/c system for up to 96 cells (some cells can have two or more indoor units and total number of indoor units can be up to 128 units) can be integrated to a central control point via the building management system network.

Additional engineering service cost etc. is required.
In case of SC-BGWNA-B, communication test by qualified person regarding electric cost calculation function is required before commissioning.
Please consult your dealer when using this gateway.

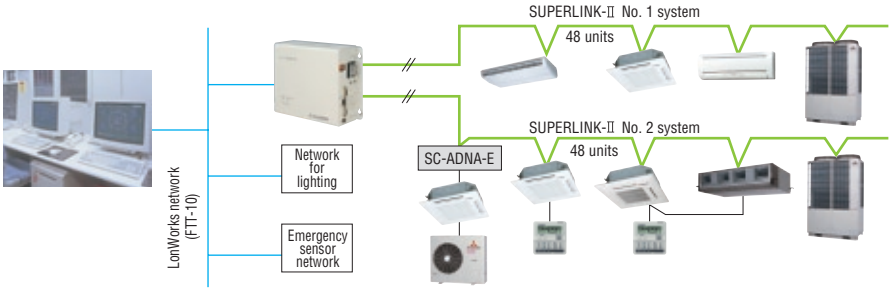



## SC-LGWNA-A (LonWorks gateway)

**Production by order**

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

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



# KX6 Service/maintenance and monitoring

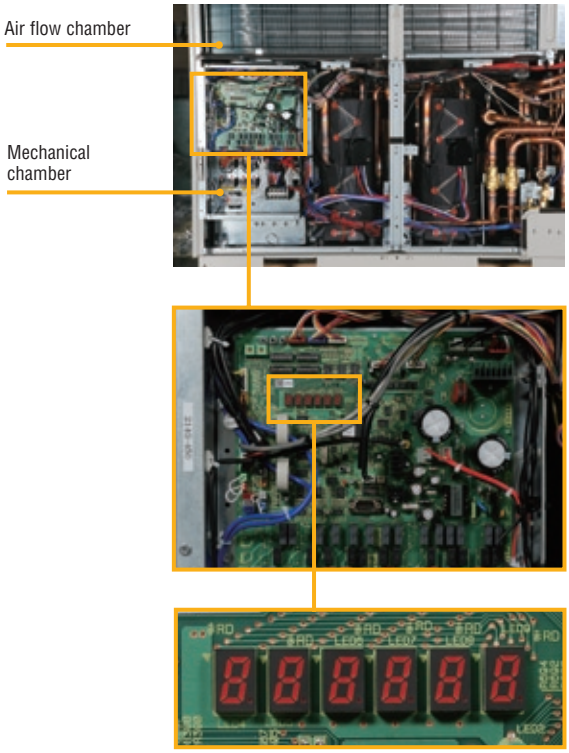
The design of the outdoor units separates the air flow compartment from the mechanical compartment, allowing easy access to serviceable parts by simply removing the panel.

This design also means that the base plate of the air flow compartment acts as a drain tray connected to a drain pipe that runs through the mechanical compartment, so a simple connection of a drain hose to the base of the unit is all that is required, no need for a separate drain tray to be installed.

Service maintenance and trouble shooting tasks can be carried out easily via the wired remote controller, as well as a cooling test operation to assist commissioning.

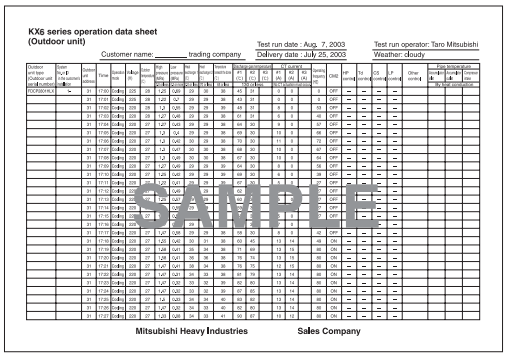
The outdoor unit control box is also equipped with a switch to invoke a 'test-run' mode. This function can be used to help detect any installation errors, indoor/outdoor unit matching errors, EEV and valve operation. A 'pump-down' switch on the PCB allows refrigerant to be recovered with the compressor protected.

All outdoor unit PCBs are also equipped with a 7-segment digital display for detailed operation history and fault finding. Operation data is stored for the 30 minute period preceding a fault occurring and details are displayed on the 7-segment reading.




Outdoor unit PCB 7-segment display

**Automatically produced test-run report**


KX6 series operation data sheet
(Outdoor unit)

Customer name: _____ trading company

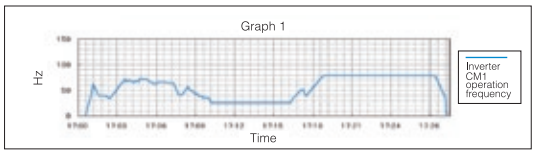
Test run date : Aug. 7, 2003
Delivery date : July 25, 2003

Test run operator: Taro Mitsubishi
Weather: cloudy

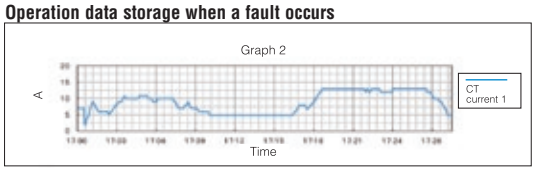


Mitsubishi Heavy Industries Sales Company

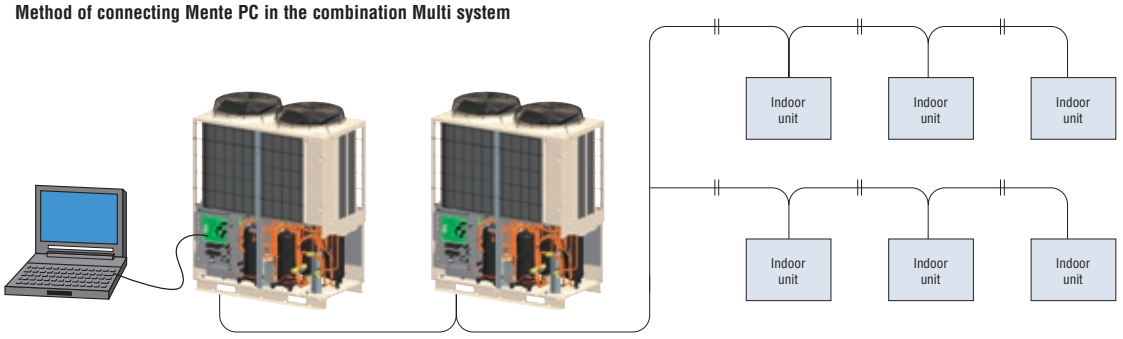
**Operation data storage during servicing**




**Operation data storage when a fault occurs**




**Method of connecting Mente PC in the combination Multi system**



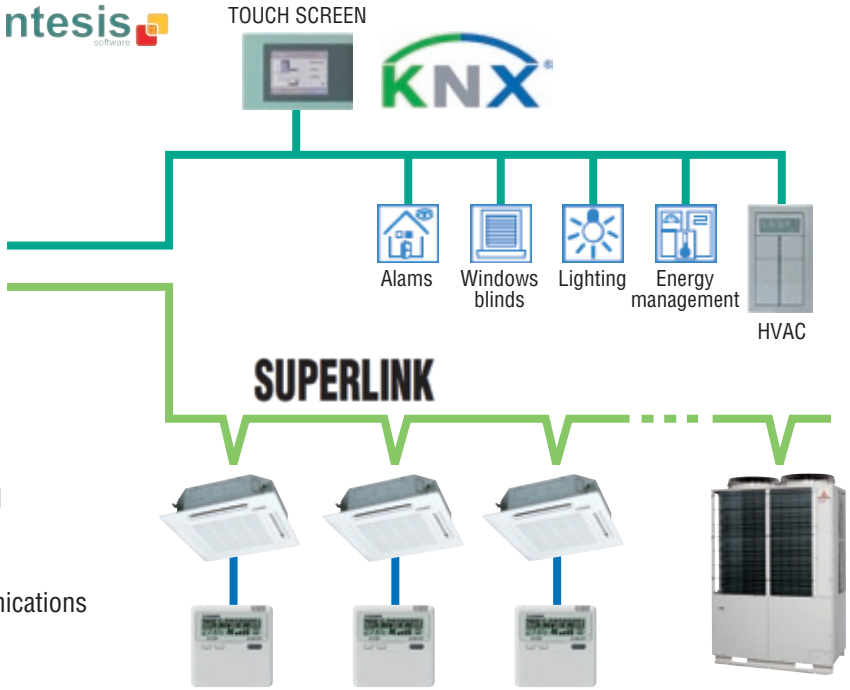
# *INTESIS BMS Interface for MHI air conditioners*

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 MHI KX in your KNX installation by Superlink

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

INTEGRATED GATEWAY

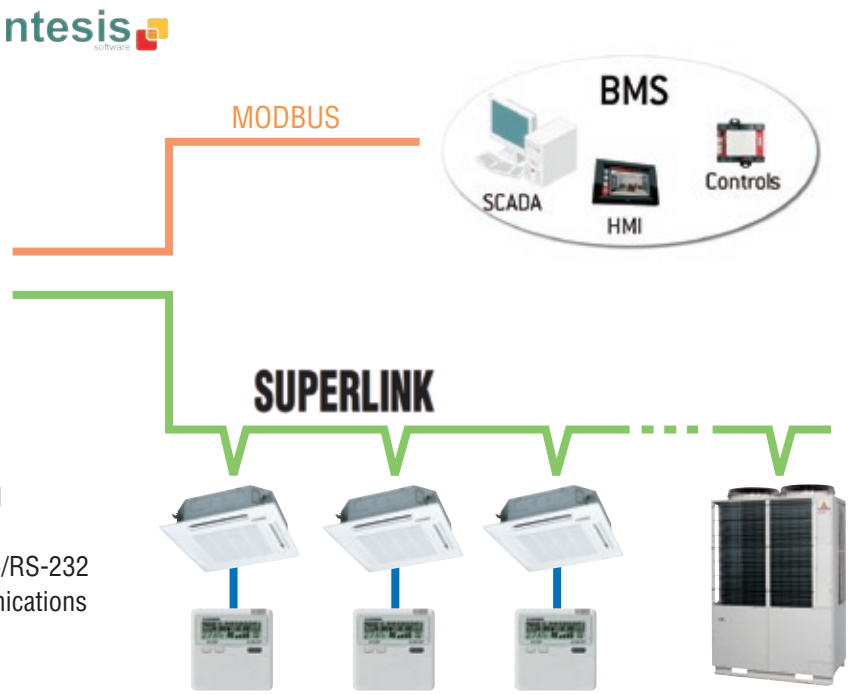



- Bidirectional: Supervision and Control
- Robust and reliable hardware
- Direct connection to KNX TP-1 BUS
- Independent management of communications
- Power supply: 230 VAC 50/60Hz
- Wall mounting case

## Integration of MHI KX in your Modbus installation by Superlink

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

INTEGRATED GATEWAY



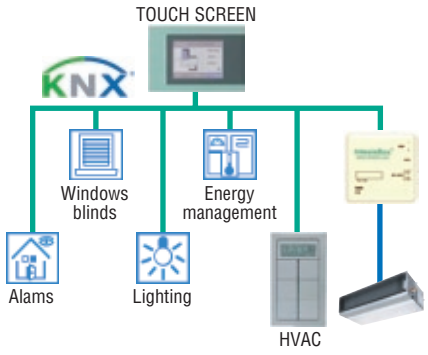

- Bidirectional: Supervision and Control
- Robust and reliable hardware
- Modbus TCP or Modbus RTU RS-485/RS-232
- Independent management of communications
- Power supply: 230 VAC 50/60Hz
- Wall mounting case

## Integration of MHI PAC in your KNX installation by Remote control line

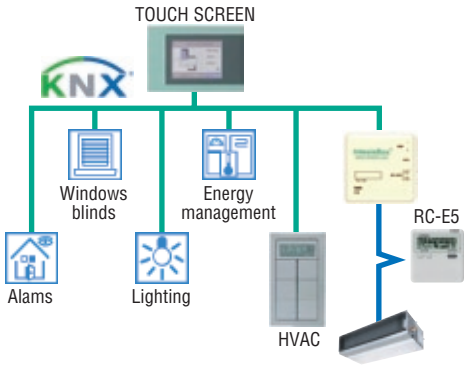
### MH-RC-KNX-1i


- 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**

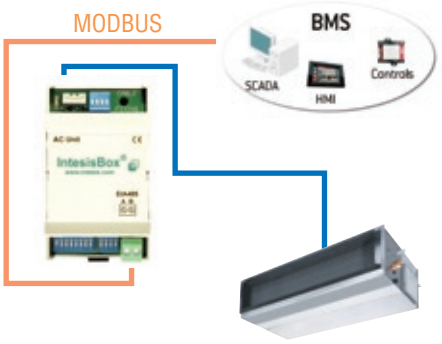



## Integration of MHI PAC in your Modbus installation by Remote control line

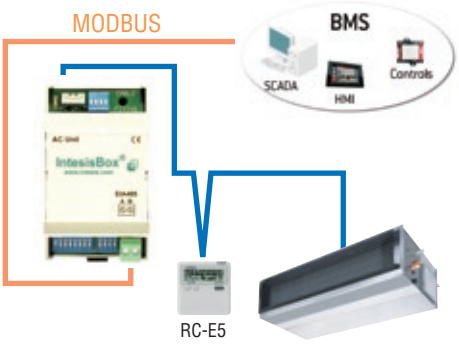
### MH-RC-MBS-1


- 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**

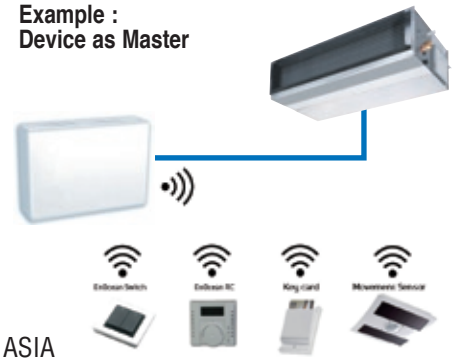



## Integration of MHI PAC in your EnOcean installation by Remote control line

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


- 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**

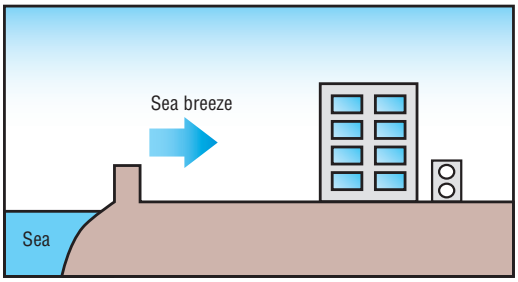


**Example :**
**Device as Slave**

# KX6 Outdoor units
# Corrosion Protection Treatment series
# 4~48hp (11.2kW~136.0kW)

Production by order

All KX6 outdoor 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 |
|---|---|
| FDCS112KXEN6 | 11.2kW |
| FDCS112KXES6 | 11.2kW |
| FDCS140KXEN6 | 14.0kW |
| FDCS140KXES6 | 14.0kW |
| FDCS155KXEN6 | 15.5kW |
| FDCS155KXES6 | 15.5kW |
| FDCS224KXE6G | 22.4kW |
| FDCS280KXE6G | 28.0kW |
| FDCS335KXE6G | 33.5kW |

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDCS335KXE6-K | 33.5kW |
| FDCS400KXE6 | 40.0kW |
| FDCS450KXE6 | 45.0kW |
| FDCS504KXE6 | 50.4kW |
| FDCS560KXE6 | 56.0kW |
| FDCS560KXE6-K | 56.0kW |
| FDCS615KXE6 | 61.5kW |
| FDCS680KXE6 | 68.0kW |

- Combination systems:26~48hp (73.5kW~136.0kW) are the same as that of the standard KX6 series shown on previous pages.
- Specifications and Dimensions are the same as that of the standard KX6 series shown on previous pages.
- Non-CE Marking models.




For outside sheet metals, Cation electrodeposition coating is used for undercoat plus polyester powder coating or acrylic backed 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 KX6 series longer while its exterior appearance has been greatly improved.
Durability of KX6 series for anticorrosion is about two times that of standard outdoor units under the same conditions.

# Additional treatment from the standard series showed on previous pages

*FDCS335KXE6-K / 560KXE6-K (For combination)

| | | 4~12HP | | 12·20*·14~24HP |
|---|---|---|---|---|
| Exterior panel | | undercoat: Cation electrodeposition coating<br>topcoat: polyester powder coating or acrylic baked coating | | undercoat: Cation electrodeposition coating<br>topcoat: acrylic baked coating |
| Base plate | | undercoat: Cation electrodeposition coating<br>topcoat: polyester powder coating or acrylic baked coating | | undercoat: Cation electrodeposition coating<br>topcoat: acrylic baked coating |
| Drain pan | | ———— | | undercoat: Cation electrodeposition coating<br>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 | application of anticorrosion compound | |
| Heat exchanger | Fin | Precoated Aluminum Blue Fins in high anticorrosion specification | | Precoated Aluminum Blue Fins in high anticorrosion specification |
| | pipe | application of anticorrosion compound | | application of anticorrosion compound |
| | Side plate | application of anticorrosion compound | | 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 electrodeposition coating + topcoat: acrylic baked finish |
| | | 8~12HP | application of anticorrosion compound | |
| Baffle plate | | 4~6HP | ———— | ———— |
| | | 8~12HP | application of anticorrosion compound | ———— |
| Service valve bracket | | 4~6HP | ———— | galvanized steel sheet + undercoat: Cation electrodeposition coating + topcoat: acrylic baking finish |
| | | 8~12HP | application of anticorrosion compound | |
| Screw tap 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.

# KX6 Outdoor units
# High Head series (100m) cooling only
# 14~48hp (40.0~136.0kW)

Production by order

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDCH335CKXE6G-K※ | 33.5 kW |
| FDCH400CKXE6G | 40.0 kW |
| FDCH450CKXE6G | 45.0 kW |
| FDCH504CKXE6G | 50.4 kW |
| FDCH560CKXE6G | 56.0 kW |
| FDCH560CKXE6G-K※ | 56.0 kW |
| FDCH615CKXE6G | 61.5 kW |
| FDCH680CKXE6G | 68.0 kW |

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

| Model No. | Nominal Cooling Capacity |
|---|---|
| FDCH735CKXE6G (FDCH335-K+FDCH400) | 73.5 kW |
| FDCH800CKXE6G (FDCH400x2) | 80.0 kW |
| FDCH850CKXE6G (FDCH400+FDCH450) | 85.0 kW |
| FDCH900CKXE6G (FDCH450x2) | 90.0 kW |
| FDCH960CKXE6G (FDCH450+FDCH504) | 96.0 kW |
| FDCH1010CKXE6G (FDCH504x2) | 101.0 kW |
| FDCH1065CKXE6G (FDCH504+FDCH560) | 106.5 kW |
| FDCH1130CKXE6G (FDCH560x2) | 113.0 kW |
| FDCH1180CKXE6G (FDCH560-K+FDCH615) | 118.0 kW |
| FDCH1235CKXE6G (FDCH615x2) | 123.5 kW |
| FDCH1300CKXE6G (FDCH615+FDCH680) | 130.0 kW |
| FDCH1360CKXE6G (FDCH680x2) | 136.0 kW |

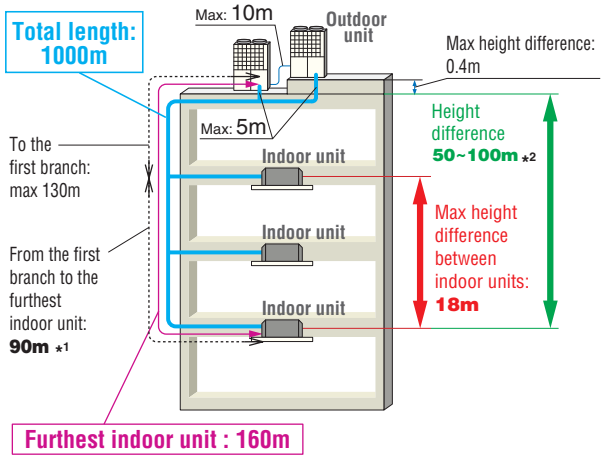
- Maximum allowable height difference between the outdoor and the indoor unit located at the lowest height position has been increased from 50m to 100m.
  (When the outdoor unit is located at higher position than the indoor unit)
- Non-CE Marking models.

Blue Fin

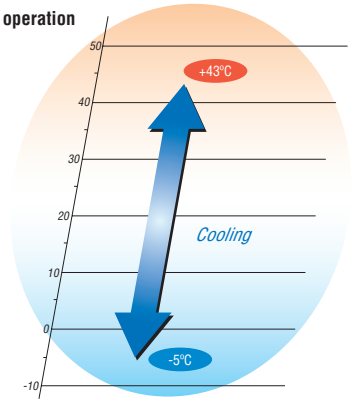
**FDCH335CKXE6G-K**
**FDCH400CKXE6G**
**FDCH450CKXE6G**

Blue Fin

**FDCH504~680CKXE6G**




**Range of operation**




*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 | | | | | |
| | Power consumption | Cooling | kW | 11.27 | 12.97 | 14.73 | 16.79 | 20.37 | 24.98 |
| | Running current | Cooling | A | 18.4-16.9 | 21.1-19.3 | 24.1-22.0 | 27.4-25.1 | 33.1-30.3 | 40.3-36.9 |
| Exterior dimensions | HxWxD | | mm | 1690x1350x720 | | 2048x1350x720 | | | |
| Net weight | | | kg | 319 | | 343 | | 357 | |
| 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 | | | |
| | Power consumption | Cooling | kW | 20.21 | 22.54 | 24.24 | 25.94 |
| | Running current | Cooling | A | 32.9-30.2 | 36.8-33.8 | 39.5-36.2 | 42.2-38.6 |
| Exterior dimensions | HxWxD | | mm | 1690x2700x720 | | | |
| Net weight | | | kg | 319x2 | | | |
| 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 | | | |
| | Power consumption | Cooling | kW | 27.70 | 29.46 | 31.52 | 33.58 |
| | Running current | Cooling | A | 45.2-41.3 | 48.2-44.0 | 51.5-47.1 | 54.8-50.2 |
| Exterior dimensions | HxWxD | | mm | 2048x2700x720 | | | |
| Net weight | | | kg | 319+343 | 343x2 | | |
| 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 |

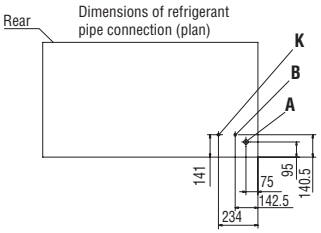
| Item | | | Model | FDCH1180CKXE6G | FDCH1235CKXE6G | FDCH1300CKXE6G | FDCH1360CKXE6G |
|---|---|---|---|---|---|---|---|
| Combination (FDCH) | | | | 560CKXE6G-K | 615CKXE6G | 615CKXE6G | 680CKXE6G |
| | | | | 615CKXE6G | 615CKXE6G | 680CKXE6G | 680CKXE6G |
| Nominal horse power | | | | 42HP | 44HP | 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 | | | |
| | Power consumption | Cooling | kW | 37.16 | 40.74 | 45.35 | 49.96 |
| | Running current | Cooling | A | 60.5-55.4 | 66.2-60.6 | 73.4-67.2 | 80.6-73.8 |
| Exterior dimensions | HxWxD | | mm | 2048x2700x720 | | | |
| Net weight | | | kg | 357x2 | | | |
| 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 |

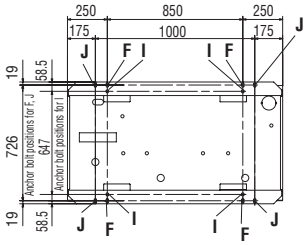
1. The data are measured under the following conditions(ISO-T1). Cooling: Indoor temp. of 27°CDB, 19°CWB, and outdoor temp. of 35°CDB. Heating: Indoor temp. of 20°CDB, and outdoor temp. of 7°CDB, 6°CWB. Piping length is 7.5m.
2. Sound pressure level indicates the value in an anechoic chamber. During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

# Dimensions

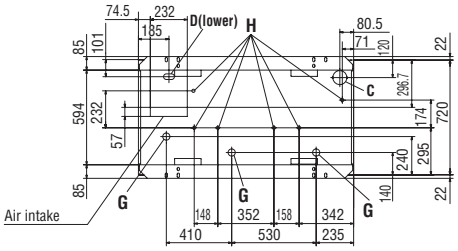
All measurements in mm.

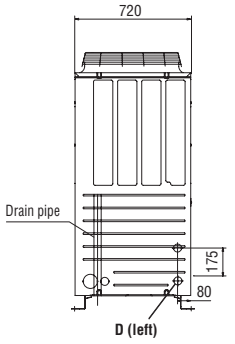
## FDCH335CKXE6G-K, 400CKXE6G, 450CKXE6G

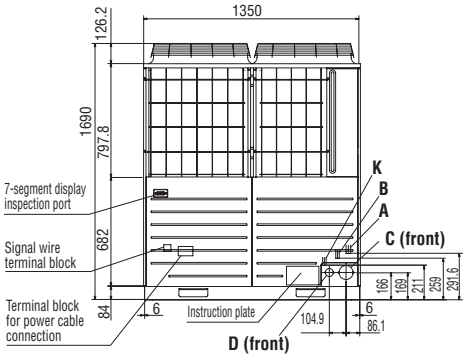


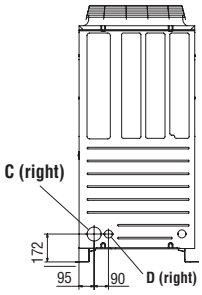



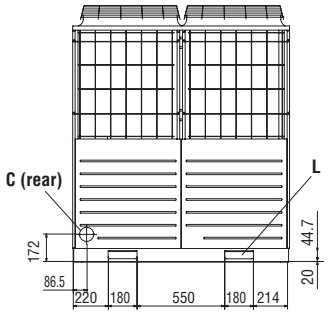

For dimensions of anchor bolt hole



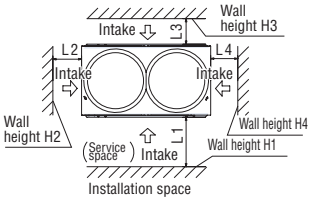




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø88 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K* | Oil-equalising pipe joint | ø3/8" flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

*14, 16HP models only

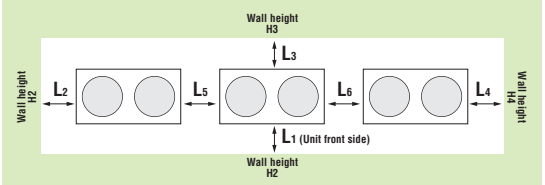
| Installation example | | |
|---|---|---|
| Dimensions | 1 | 2 |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $H_1$ | 1500 | – |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | – |




2m overhead clearance required

Notes:
(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked "L J" (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination. (For 14,16Hp only)

**When more than one unit is installed**

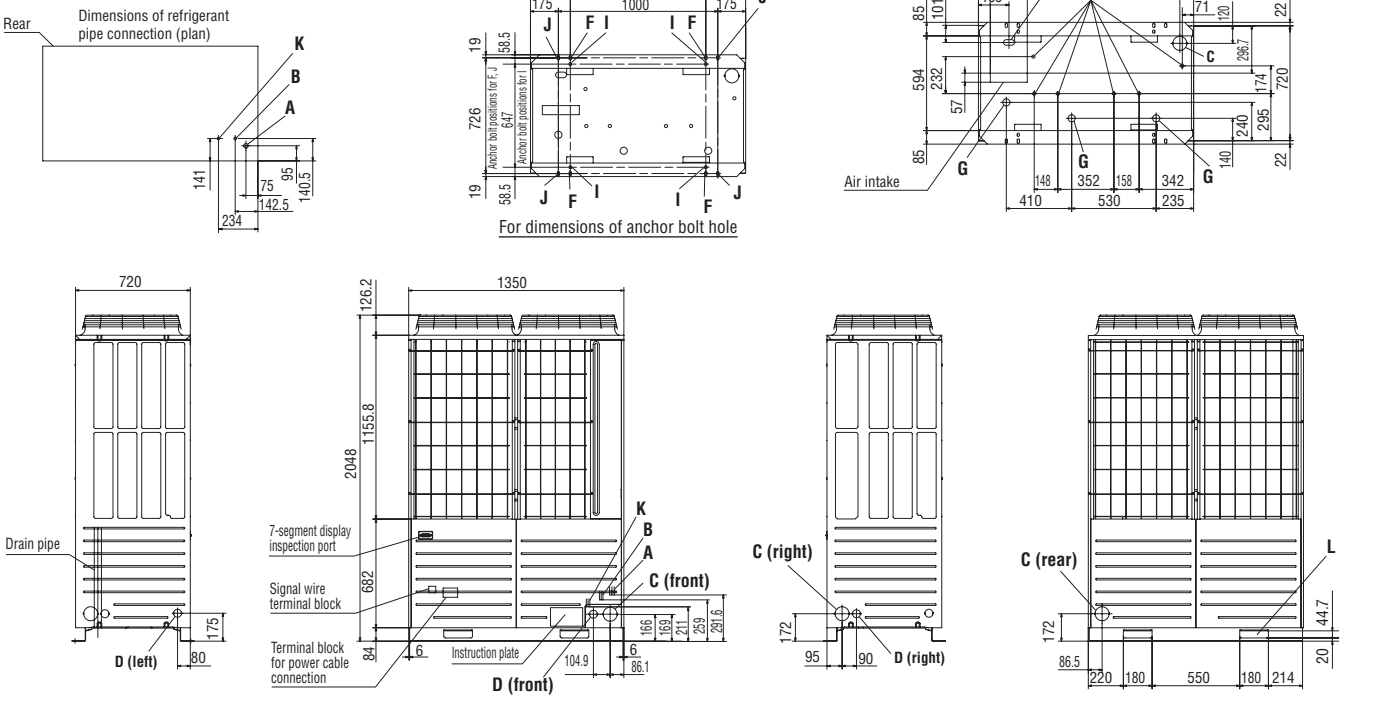



| Installation example | | |
|---|---|---|
| Dimensions | A | B |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $L_5$ | 0 | 400 |
| $L_6$ | 0 | 400 |
| $H_1$ | 1500 | No restrictions |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | No restrictions |

# Dimensions

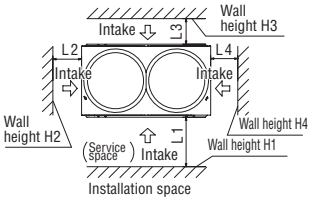
All measurements in mm.

## FDCH504CKXE6G, 560CKXE6G, 560CKXE6G-K, 615CKXE6G, 680CKXE6G




| Mark | Item | |
|---|---|---|
| A | Service valve connection (gas side) | For refrigerant piping, please refer to the unit specifications. |
| B | Service valve connection (liquid line) | |
| C | Refrigerant pipe draw-out port | ø100 |
| D | Power cable draw-in port | ø50 |
| F | Anchor bolt hole | M10 x 4 places |
| G | Drain hose hole | ø45 x 3 places |
| H | Drain discharge port | ø20 x 6 places |
| K | Oil-equalising pipe joint | ø9.52 flare |
| L | Sling holes for haulage or hoisting | 180 x 44.7 |

| Installation example | | |
|---|---|---|
| Dimensions | 1 | 2 |
| $L_1$ | 500 | Open |
| $L_2$ | 10 | 200 |
| $L_3$ | 100 | 300 |
| $L_4$ | 10 | Open |
| $H_1$ | 1500 | – |
| $H_2$ | No restrictions | No restrictions |
| $H_3$ | 1000 | No restrictions |
| $H_4$ | No restrictions | – |




2m overhead clearance required

Notes:
(1) The unit must be fixed with anchor bolts.
(2) Leave a 2m or larger space above the unit.
(3) The unit name plate is attached on the lower right corner of the front panel.
(4) The ports for refrigerant pipe and power cable penetrations are covered with half-blanks. Please cut off a half-blank with nippers in using these ports.
(5) Use a ø88 port for refrigerant pipe connection.
(6) Anchor holes marked “L J” (four holes for M10) are for a renewal installation.
(7) The oil-equalising pipe K should be used when outdoor units are used in combination.

# Refresh KX outdoor units

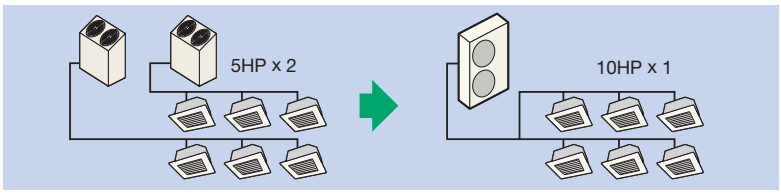
## If replacing a used unit with a new one, Refresh KX can reuse existing piping.

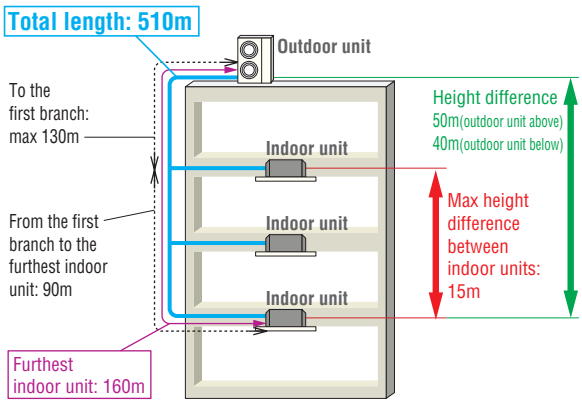
| Model No. | Nominal Cooling Capacity |
|---|---|
| FDCR224KXE6 | 22.4kW |
| FDCR280KXE6 | 28.0kW |

**<Option>**

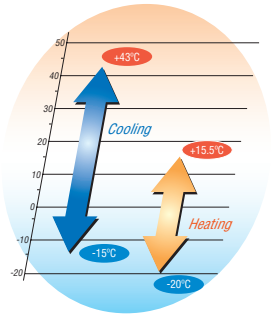
FDCR-V-KIT-E : Service valve kit

- 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.




**Range of operation**




# Specifications

| Item | | | Model | FDCR224KXE6 | FDCR280KXE6 |
|---|---|---|---|---|---|
| Nominal horse power | | | | 8HP | 10HP |
| Power source | | | | 3 Phase 380-415V, 50Hz | |
| Nominal capacity | Cooling | | kW | 22.4 | 28.0 |
| | Heating | | | 25.0 | 31.5 |
| Electrical characteristics | Starting current | | A | 5 | |
| | Power consumption | Cooling | kW | 5.60 | 8.09 |
| | | Heating | | 6.03 | 8.21 |
| | Running current | Cooling | A | 9.25-8.47 | 13.22-12.10 |
| | | Heating | | 9.85-9.02 | 13.41-12.28 |
| Exterior dimensions | HxWxD | | mm | 1675x1080x480 | |
| Net weight | | | kg | 224 | |
| Refrigerant charge | R410A | | kg | 11.5 | |
| Sound pressure level | Cooling/Heating | | dB(A) | 58/58 | 59/60 |
| Refrigerant piping size | Liquid line | | mm(in) | 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.**

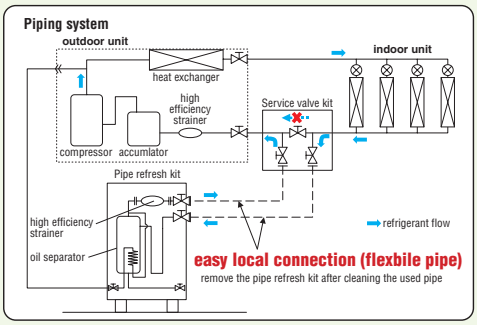
1.Implement cooling operation of all indoor units for more than 30 minutes.
2.Implement pump-down after cooling operation.
3.Recover refrigerant and remove the existing outdoor unit and indoor unit.

### ◆When the existing unit is not operable

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

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

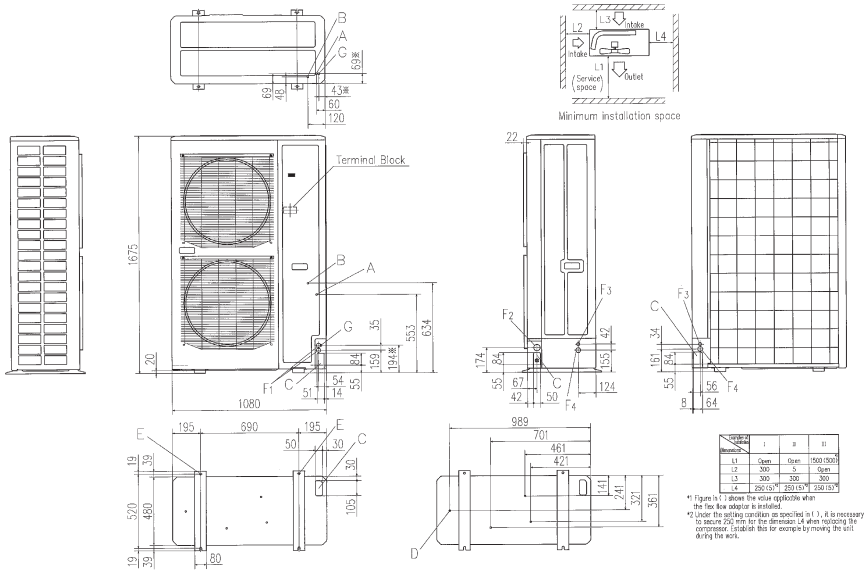
7-segment display



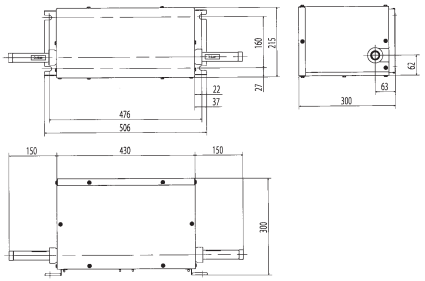

Pipe refresh kit (FDCR-KIT-E)

# Dimensions

All measurements in mm.




Service valve kit



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

# Mitsubishi Heavy Industries KX6/further information

Mitsubishi Heavy Industries operates a continuous CSR (Corporate Social Responsibility) policy, with a role to realise a sustainable society through it's various areas of business.

## Creed

- We strongly believe that the customer comes first and that we are obliged to be an innovative partner to society.
- We base our activities on honesty, harmony, and a clear distinction between public and private life.
- We shall strive for innovative management and technological development from an international perspective.

## Reason for Instituting the Creed

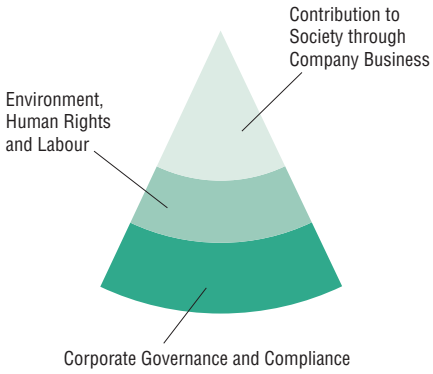
In Japan there are many enterprises with their own "creeds" which simply represent their management concept.

Mitsubishi Heavy Industries, Ltd. has a creed of this type, also. It was instituted in 1970 on the basis of the policy advocated by Koyata Iwasaki, president of Mitsubishi Goshi Kaisha in the 1920's, to indicate the essential attitude of the company, the mental attitude of the employees, and the future directions of the company.

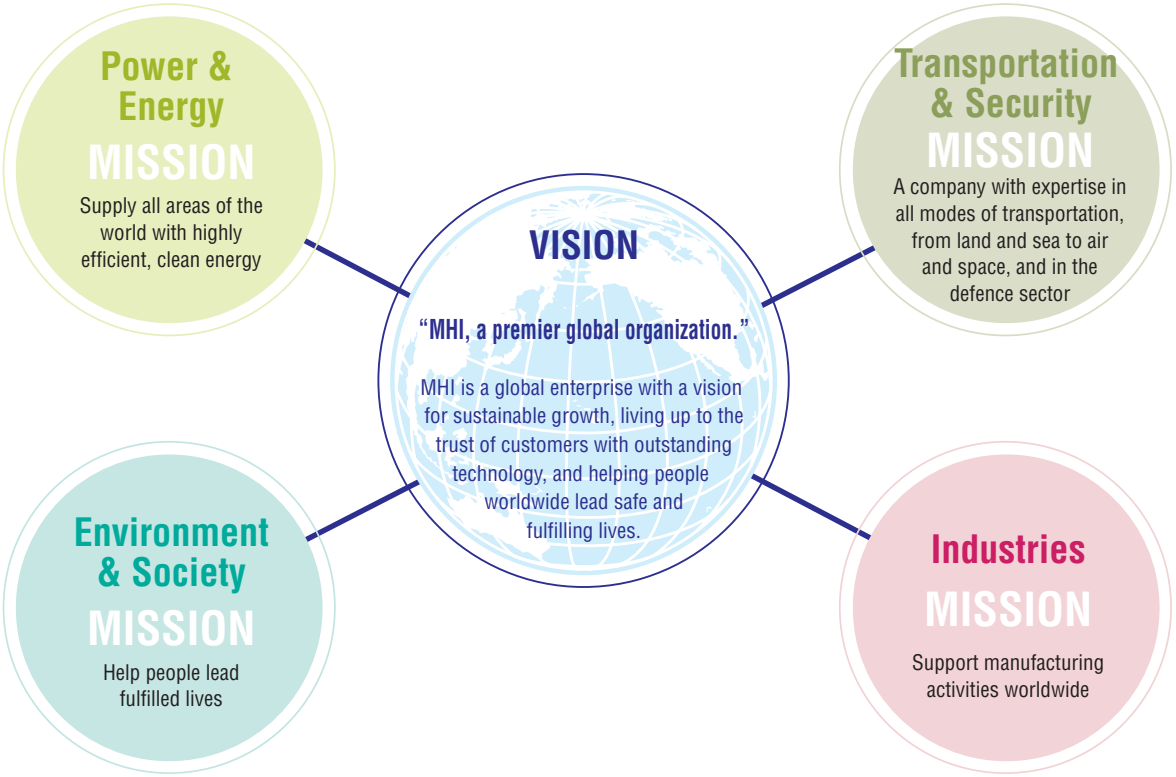
The reason for instituting the present creed is so that all of us can call to mind our one hundred years of tradition, and strive for further development in the future.

*Issued 1 June 1970*

MHI's creed was established based on "The Three Corporate Principles" shared by the Mitsubishi Group from the company's beginnings. In the spirit of this creed, MHI continues its efforts to fulfil its three corporate social responsibilities (CSRs): "corporate governance and compliance," "the environment, human rights and labour," and "contribution to society through business activities."




## Contribution to Society through Company Business



The KX6 product range has been developed in compliance with the Mitsubishi Heavy Industries Policy on the Environment.

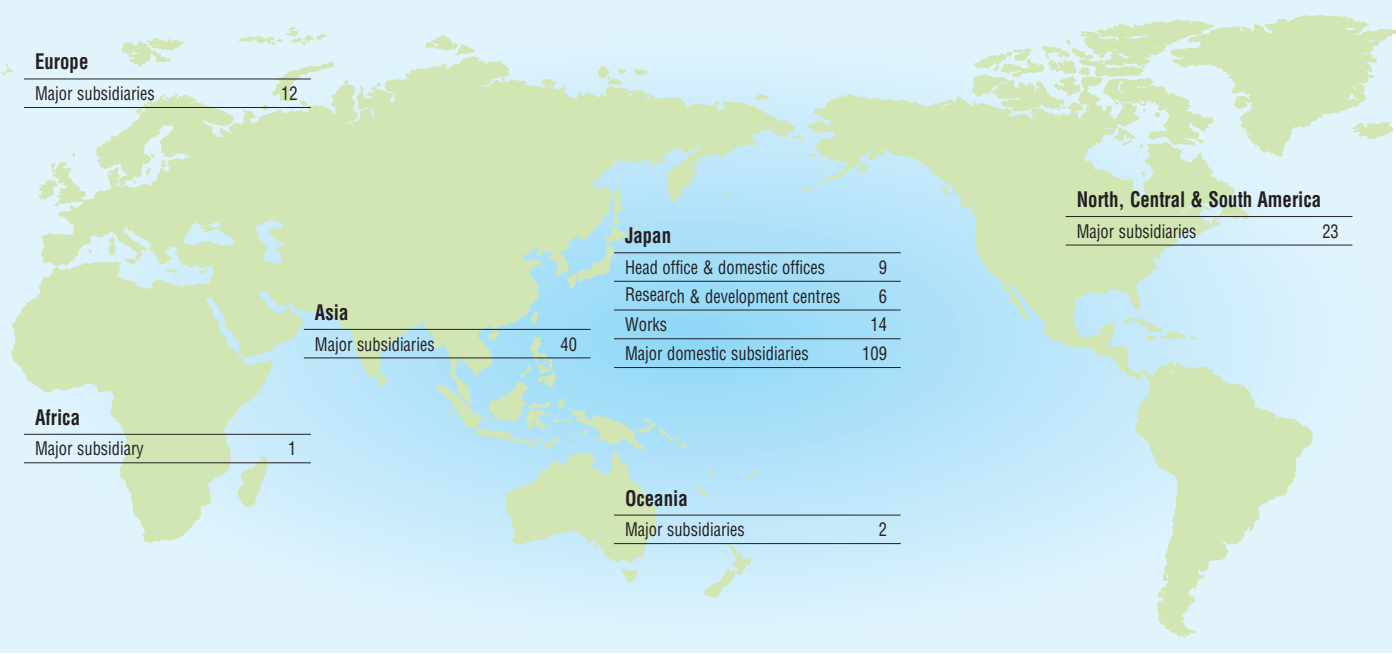
**In order to make the sustainable development of society possible, a basic policy on environmental matters has been established.**

Pursuant to the express provision of Section 1 of its creed that “We strongly believe that customers come first and that we are obligated to be an innovative partner to society,” MHI shall, as a matter of primary importance, strive, through its R&D, manufacturing and other business activities, to play a useful role in the development of society. To this end, while remaining aware that a business enterprise is a member of society, MHI shall endeavour, in all aspects of its business activities, to reduce the burden on the environment and shall concentrate and fully utilise its technological capabilities for the development of technologies and products that will protect the environment, thus contributing to the establishment of a society in which sustainable development is possible.

**In order to realise its basic policy, MHI has set the following seven conduct guidelines.**

1. Recognise that environmental protection is top priority in the companyís operations, and encourage the entire company in its endeavours to protect and improve the environment.
2. Define roles and responsibilities regarding environmental protection by developing and maintaining a corporate organisation designated for environmental protection, and create and implement corporate policies and procedures on environmental matters.
3. Endeavour to reduce the burden on the environment by preventing pollution, saving resources, saving energy, reducing waste, reusing materials, and recycling in all aspects of the companyís business activities in R&D, designing, procurement of materials, manufacturing, transportation, use, service and disposal.
4. Endeavour to develop and provide advanced, highly reliable, unique technologies and products that contribute to solving environmental and energy problems.
5. Comply with national and local environmental laws and regulations, beyond mere compliance by enacting, implementing and evaluating voluntary standards where necessary, and to endeavour to continuously improve and promote environmental protection activities by establishing environmental goals and targets.
6. Endeavour to protect the environments of foreign countries by carefully examining the consequences of the companyís overseas business operations and the exportation of its products, and to become actively involved in technological co-operation overseas in areas of environmental protection.
7. Provide environmental training and other programs to enhance the environmental awareness of all company employees, and take steps to expand public relations activities, such as providing environment-related information to the public and social contribution activities.

**Number of offices/plants by region (Consolidated)** as of March, 2011



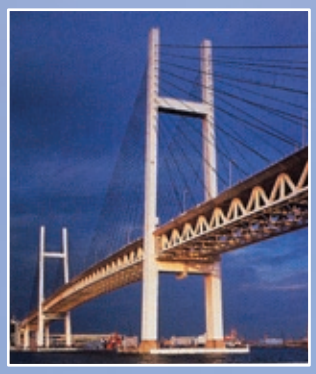
# global activity

On the land and sea, in the sky and even in space, MHIís 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 MHIís 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



- Ultra-High Steel Stacks
- Refuse Incineration Plants
- Night Soil Treatment Plants
- Electrostatic Precipitators
- Flue Gas Desulfurization System
- Fluidized Incinerators
- CFC Collecting Equipment

- 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

TRANSPORTATION
LOCAL DEVELOPMENT
ENVIRONMENT
RESOURCES/ENERGY

MITSUBISHI HEAVY INDUSTRIES, LTD.

Our Technologies, Your Tomorrow

## INDUSTRIAL

- 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

## LEISURE/LIFESTYLE

- 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

## INFORMATION SYSTEM

- Cable Layer
- Printing Machinery

## DEVELOPMENT

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

## DEFENCE

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

# Before starting use

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

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

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

### Use in acidic or alkaline atmosphere
If this unit is used in 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 catalog is a dedicated cooling/heating device for human use.
Do not use it for special applications such as the storage of foodstuffs, animals or plants, precision devices or valuable art, etc.
This could cause the quality of the items to drop, etc.
Do not use this for cooling vehicles or ships. Water leakage or current leaks could occur.

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

### Installation
Always commission the installation to a dealer or specialist. Improper installation will lead to water leakage, electric shocks and fires.
Make sure that the outdoor unit is stable in installation. Fix the unit to stable base.

### Usage place
Do not install in places where combustible gas could leak or where there are sparks.
Installation in a place where combustible gas could be generated, flow or accumulate, or places containing carbon fibers could lead to fires.

MITSUBISHI HEAVY INDUSTRIES, LTD.

Mitsubishi Heavy Industries, Ltd.
Air-Conditioning & Refrigeration Systems
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**http://www.mhi.co.jp**

**Our factories are ISO9001 and ISO14001 certified.**

**Certified ISO 9001**

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

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


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

**Certified ISO 14001**

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