



IAPL GROUP



**MITSUBISHI**  
**HEAVY INDUSTRIES**

**AIR CONDITIONERS**

**HEAVY DUTY**

# High Performance Air-Conditioning



New

**KXX**

Hybrid VRF inverter multi-system Air-Conditioners

# State of an Art Air-Conditioning



NEW

## KX Series

### INSTALLATION FLEXIBILITY

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

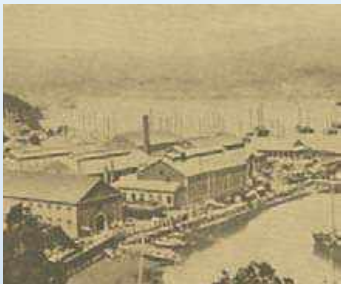


# Mitsubishi Heavy Industries Japan

## 139 years of technological innovations



Yataro Iwasaki, founder of Mitsubishi



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

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



Mitsubishi Heavy Industries - Mahajak Airconditioners Co. Ltd. has authorized IAPL Group, India for sales, marketing & service of Mitsubishi Heavy Ind. Heavy Duty Room, Commercial Airconditioners & VRF Systems in India.

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

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

# Mitsubishi Heavy Industries - Global Activity

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

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

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

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



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



- 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



- 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

Our Technologies, Your Tomorrow

Established Since - 1884



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



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



- Cable Layer
- Printing Machinery



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



INDUSTRIAL

LEISURE/LIFESTYLE

INFORMATION SYSTEM

DEVELOPMENT

DEFENCE



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

# Product Line Up

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

## Improved Hybrid Series

### Micro model



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

□ 1-phase 220-240V

□ 3-phase 380-415V

### KXZ Lite



NEW

8HP*	10HP*
FDC224KXZPE1	FDC280KXZPE1

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

### Standard Model



### KXZE1

NEW

12HP	14HP	16HP
FDC335KXZE1	FDC400KXZE1	FDC450KXZE1

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

22HP	24HP	26HP	28HP	30HP	32HP
FDC615KXZE1	FDC670KXZE1	FDC735KXZE1	FDC800KXZE1	FDC850KXZE1	FDC900KXZE1
12+10	12+12	12+14	14+14	14+16	16+16
FDC335KXZE1 FDC280KXZE1	FDC335KXZE1 FDC335KXZE1	FDC335KXZE1 FDC400KXZE1	FDC400KXZE1 FDC400KXZE1	FDC400KXZE1 FDC450KXZE1	FDC450KXZE1 FDC450KXZE1

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

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

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



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

## <Indoor units>

### Wide variety of 17 types 93 models

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



### Indoor units lineup

Type			Capacity	0.5HP	0.8HP	1HP	1.25 HP	1.6HP	2 HP	2.5HP	3.2HP	4 HP	5 HP	6 HP	8 HP	10HP
			Model Code : kW	15	22	28	36	45	56	71	90	112	140	160	224	280
Ceiling Cassette	4way	<b>NEW</b> FDT				●	●	●	●	●	●	●	●	●		
	4way Compact (600 x 600)	<b>NEW</b> FDTc		●	●	●	●	●	●							
	2way	FDTW				●		●	●	●	●	●	●			
	1way	FDTs						●		●						
	1way Compact	FDTQ			●	●	●									
Duct Connected	High Static Pressure	FDU						●	●	●	●	●	●	●	<b>NEW</b>	<b>NEW</b>
	Low/Middle Static Pressure	FDUM			●	●	●	●	●	●	●	●	●	●		
	Low Static Pressure (thin)	FDUT		<b>NEW</b>	●	●	●	●	●	●						
	Compact & Flexible	FDUH			●	●	●									
Wall Mounted		<b>NEW</b> FDK		<b>NEW</b>	●	●	●	●	●	●	<b>NEW</b>					
Ceiling Suspended		<b>NEW</b> FDE					●	●	●	●		●	●			
Floor Standing	2way	FDFW				●		●	●							
	with casing	FDFL								●						
	without casing	FDFU				●		●	●	●						
OA Processing unit		FDU-F			● FDU-F series are not connectable to Micro model (4~6HP), KXZ Lite.						<b>NEW</b>		<b>NEW</b>		<b>NEW</b>	<b>NEW</b>
Type			Air Flow M <sup>3</sup> /h	150	250	350	500	650	800	850	1000	1300	1800			
Fresh Air Ventilation and Heat Exchange unit		<b>NEW</b> SAF		●	●	●	●		●		●					
Fresh Air DX Assembly		SAF-DX			●	●	●		●		●					

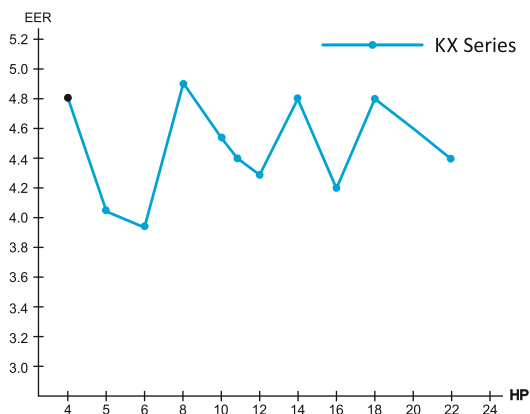
Power supply for outdoor and indoor units are 3 phase 380-415V, 50Hz and 1 phase 220-240V, 50Hz respectively.

# Energy Saving Technology

NEW

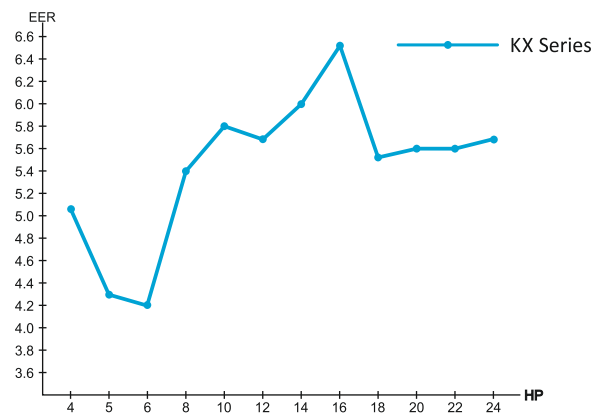
## Top Class Energy Efficiency EER (Energy Efficiency Ratio)

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



## ESEER (European Seasonal Energy Efficiency Ratio)

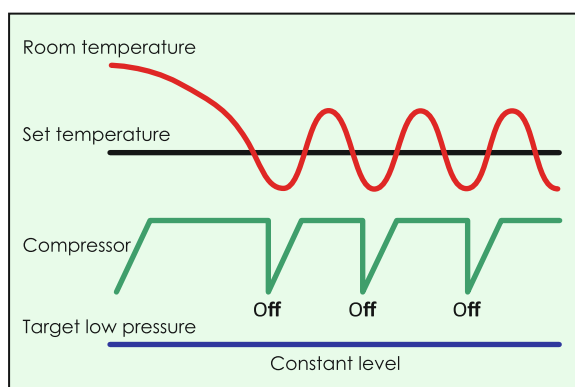
KX Series also surpasses competitor's ESEER at all range. On average, KX series has 9% higher EER than competitor



NEW

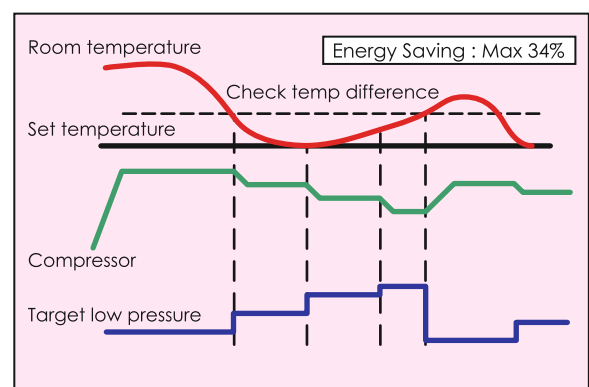
## VTCC : Variable Temperature and Capacity Control (KXZ)

### Normal operation (in the cooling mode)



Target low pressure was set at the constant level. When room temperature got closer to set temperature, the compressor shifted operation and repeated on-off operation continuously

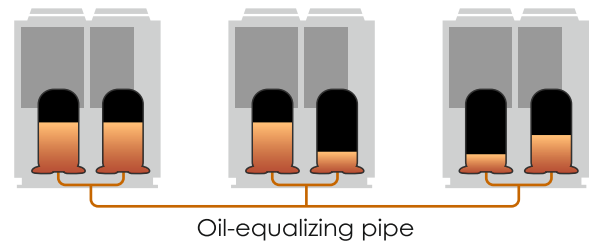
### Energy saving operation (in the cooling mode)



Checking the difference between room and set temperatures, the system adjusts compressor speed and target low pressure effectively. Meeting customer's requirement, manual adjustment is available. (Need to set 7-segment or external input)

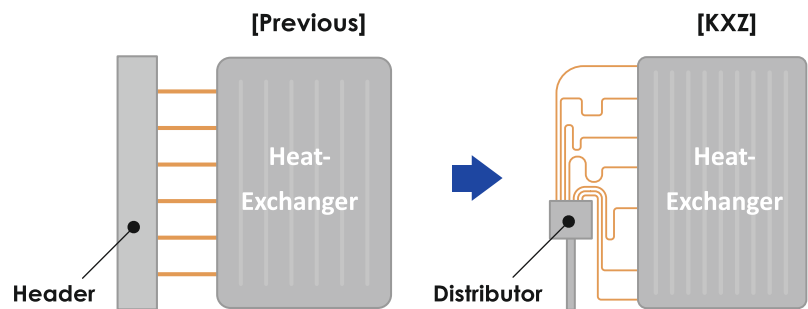
## Oil level control capability

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



## Improved Heat-exchanger

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



## Strengthened resistance against frost

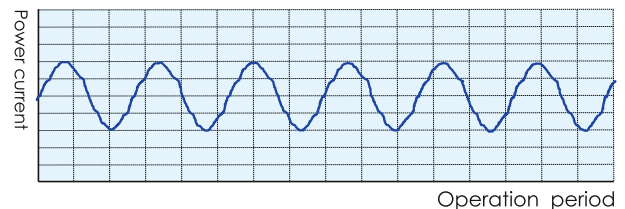
Resistance against frost has been strengthened by achieving improved heat-exchanger.

## Vector control

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

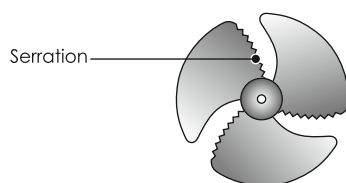
- Smooth operation from low speed to high speed
- Smooth Sine Voltage Wave form are attained
- Energy efficiency is further improved in low speed range

Vector Control



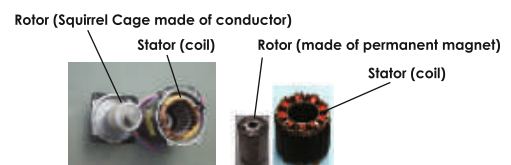
## Long-chorded 3 propeller fan with serration

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



## DC Fan Motor

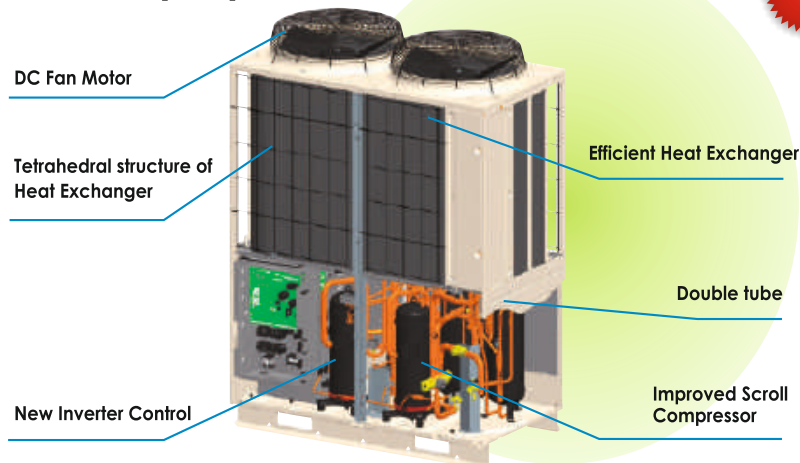
Employment of DC fan motor has enabled to realize an excellent efficiency of approximate 60% higher than previous models.



# High Efficiency & Compact Design

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

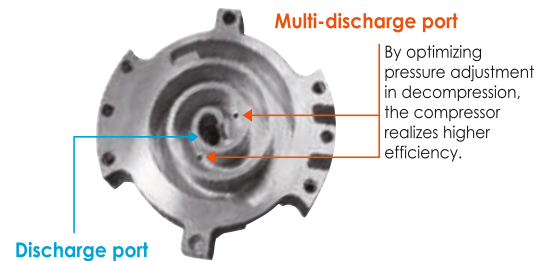
## 8 ~ 60HP (KXZ)



**NEW**

### Multiport compressor that achieves high efficiency (KXZ, KXZ Lite)

The new multiport discharge area in the compressor has optimized pressure control with better balancing.

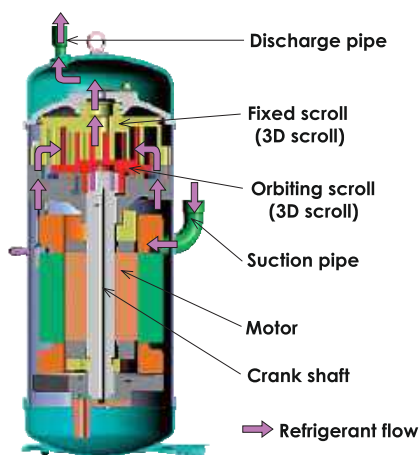


**NEW**

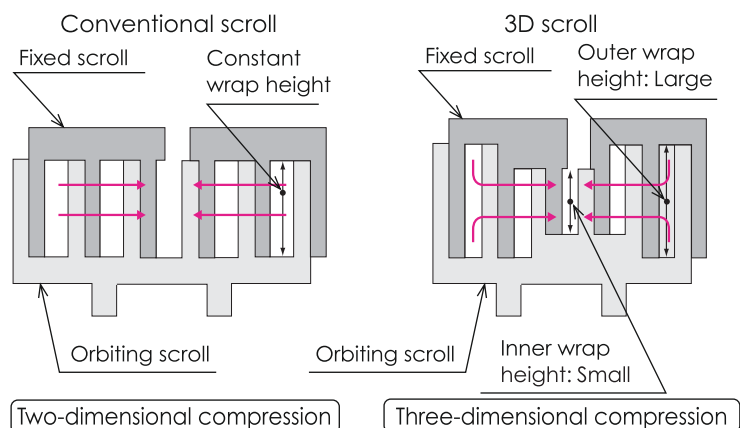
### 3D Scroll Compressor that achieves high efficiency with low noise, smaller size & lighter weight

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

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



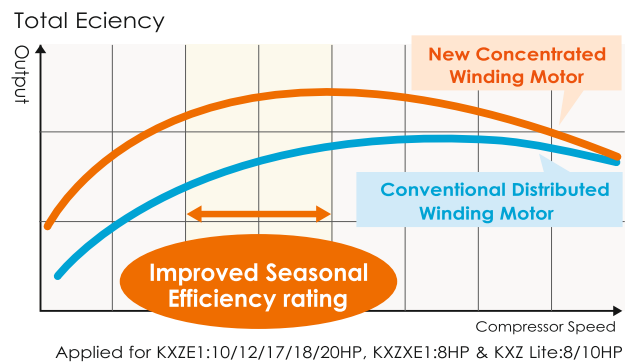
3D scroll compressor



Sectional views of conventional scroll and 3D scroll

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

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

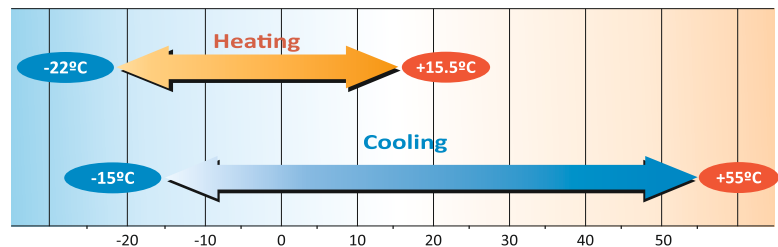


## Design Flexibility



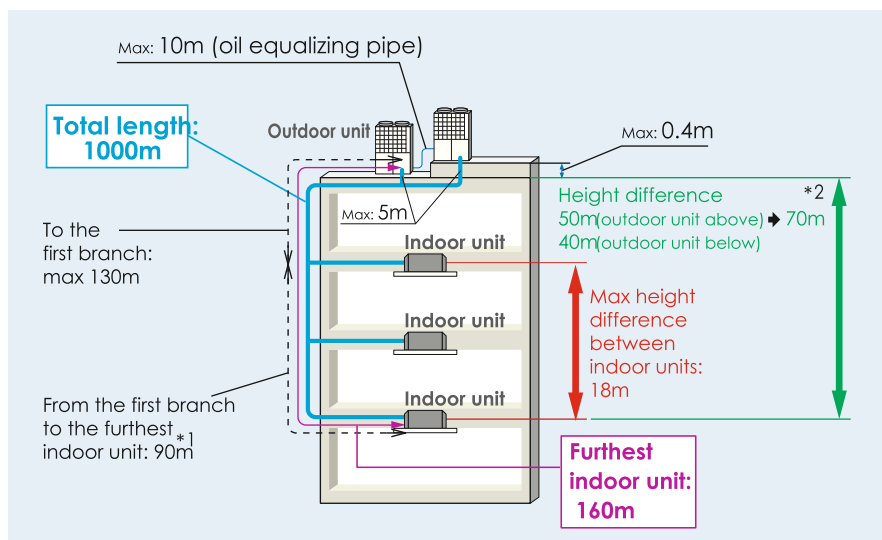
### Wider Range of Operation (KXZ, KXZ Lite)

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



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

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

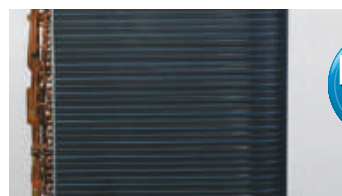


\*1 The difference between the longest and the shortest indoor unit piping from the first branch must be within 40m. (MAX85m)

\*2 In case of height difference up to 70m, please contact your dealer. Height difference up to 100m is possible with High Head series. Please refer to page 56.

### 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.



# Control Systems

## <Individual control>

### Remote Control line up

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

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

### Wired remote control (option)

#### RC-EX3A

#### Easy touch and Easy view with full dot Liquid Crystal display

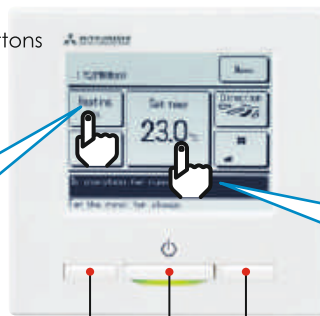
##### User friendly

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

##### Operation mode setting screen



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



##### Run / Stop

##### Easy view

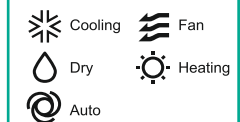
- Big LCD with 3.8 inch full dot display
- Back light function
- Multi language display (12 languages)

##### Setting temperature screen



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

##### Operation mode



##### High power operation

- The highest capacity operation (Max 15 minutes)
- Increasing compressor speed
- Increasing air flow volume

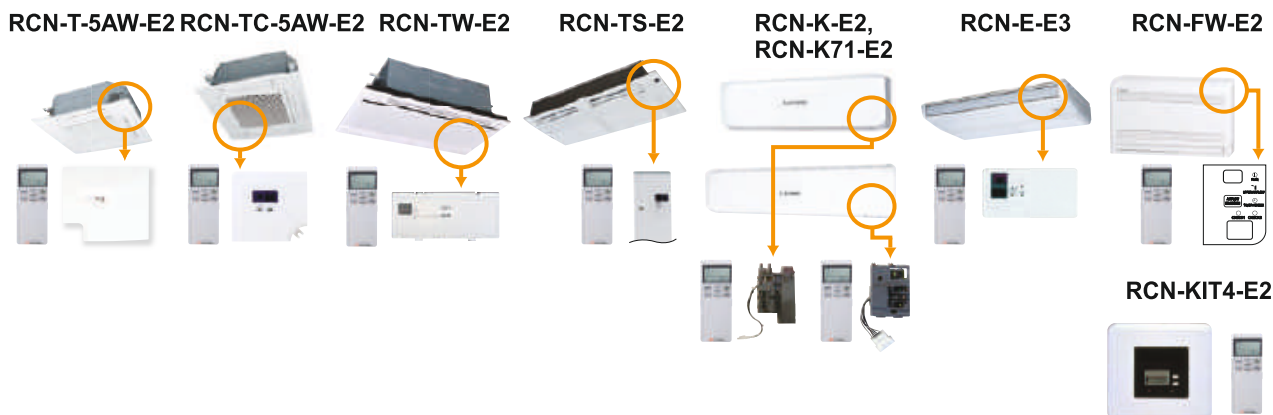
##### Energy-saving operation

- 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

### Wireless remote control (option)

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

NEW



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

### 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.

##### Upto 16 Units

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

##### AUTO Restart

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

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

\*When RCH-E3 is used, the fan speed setting can only be set to 3 speed settings (Hi-Me-Lo).

### Thermistor (option)

#### SC-THB-E3

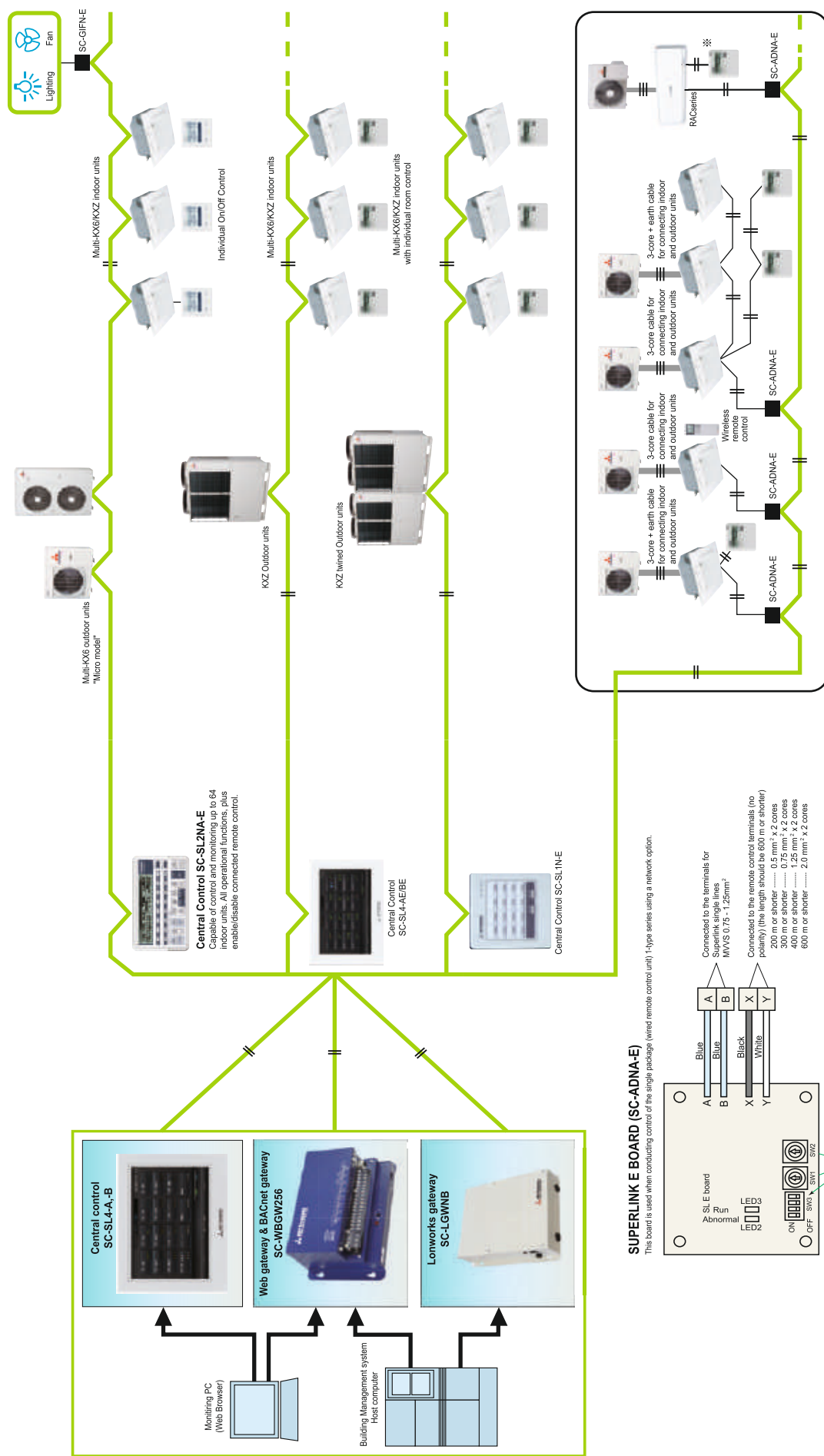
In case sensor in the indoor units or the remote control sensor can not sense the room temperature correctly, or individual remote control in each room is not required but only sensor is required (as when center control system is in place), install SC-THB-E3 at proper place in the rooms.



8m

# <SUPERLINK® - II Control System>

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



※C-BKN is necessary to connect to wired remote controller.

# <Central Control>

## SC-SL1N-E

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

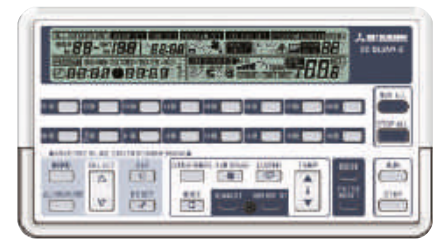
1. The SC-SL1 N-E is connected to the Superlink-EI network via 2-core, non-polar wires ('AB' connection).
2. It will monitor and control the start/stop function of up to 16 units, with the sixteen operation button.
3. The unit or group numbers in operation or in need of service are displayed with an LED.
4. Collective start/stop is also available through the simultaneous on/off button.
5. Up to 12 SC-SL1 N-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-SL1 N-E will resume the operation of the system according to a stored operation condition, once power is restored.



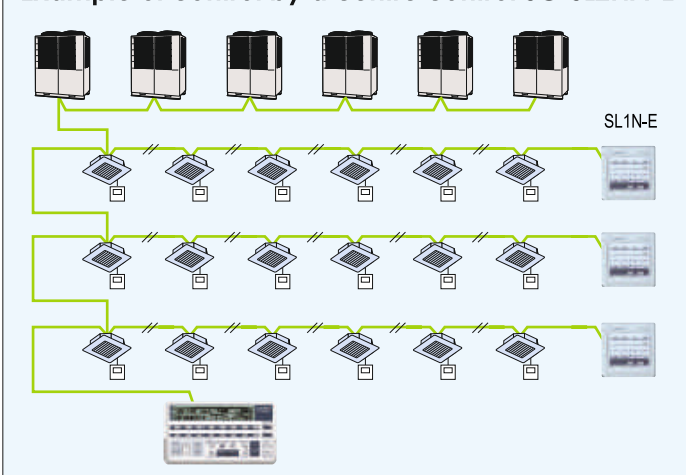
## SC-SL2NA-E

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

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

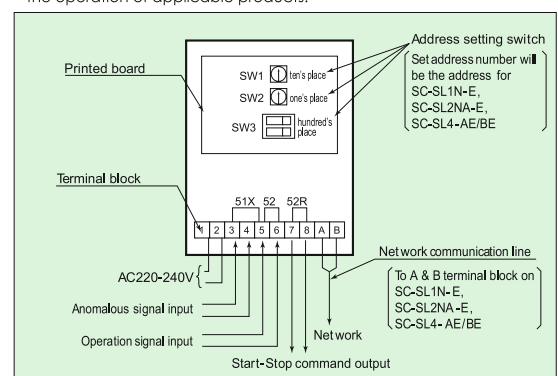
• Outer dimensions: H120 x W215 x D25+35\*mm.

35" is the measurement including the part contained in a recess.

**Note: Please consult company for combination of center controls and BMS interface units.**

### SC-GIFN-E Interface kit

- Applicable products  
Ventilation fan, Air purifier
- By using SC-GIFN-E together with central control such as SC-SL1 N-E, SC-SL2NA-E and SC-SL4-AE/BE, you can start-stop, operate & monitor the operation of applicable products.



# <Central Control>

## SC-SL4-AE/BE

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

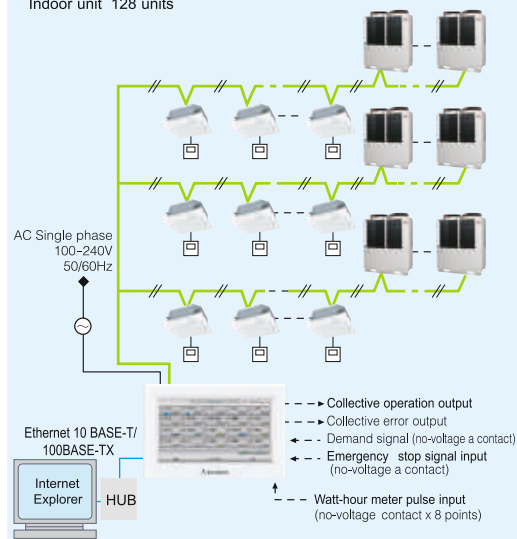


Indoor units can be controlled, scheduled, monitored and either individually, as groups or as blocks of groups with the following functions:

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

### System diagram

Indoor unit 128 units



PC requirements: Windows Vista or Windows 7, 8.1  
Monitor resolution 1280 x 1024 or more.  
Web browser requirements: Internet Explorer 9, 11

### Electric power calculation function:

(for SC-SL4-BE only)

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



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

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

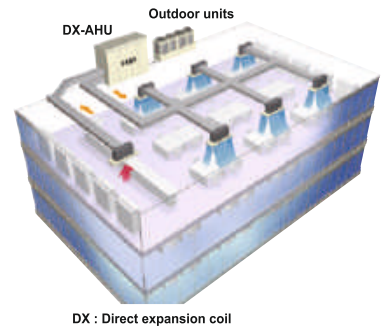
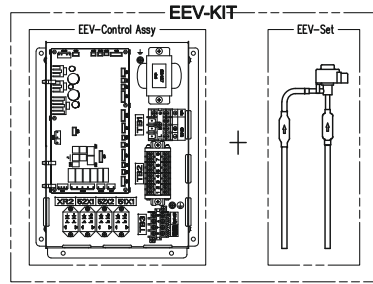
The receiving side power supply is DC 12V (10mA).

The air conditioning charges calculations of this unit are not based on OIML, the international standard.

# AHU CONNECTING KIT

## EEV-KIT

- EEV-KIT is the control kit for operating the locally provided AHU or FCU with direct expansion heat exchanger coils in connection with the KXZ / KXE6 system.  
(AHU : Air Handling Unit, FCU : Fan Coil Unit)
- EEV-KIT is composed of one EEV-Control Assy and one EEV-Set.



## Features

EEV-Control Assy has 2 types.

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

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

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

## System configuration

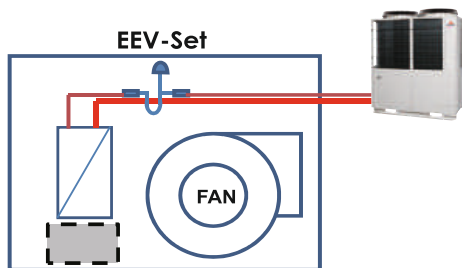
- Single refrigeration system EEVKIT6-E-C Possible with multiple
- Multiple refrigeration system EEVKIT6-E-M (1) + EEVKIT6-E-C  
Possible with multiple (Max32)
- EEVKIT6-E-C is common for both single and multiple refrigeration systems

## Single refrigerant system

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

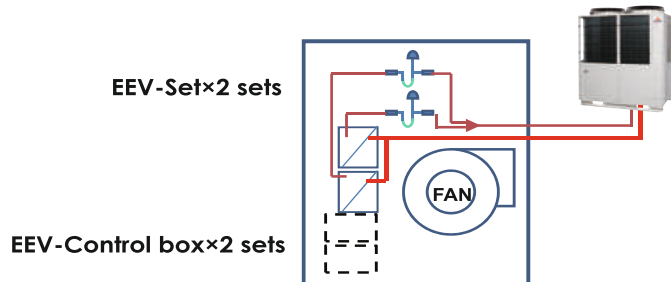
### System A

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



### System B

- System B is a system that has multiple EEV-KIT's built into one indoor unit with multiple heat exchangers on one refrigerant circuit.
- This system can be applied up to 60HP(for KXZ), 48HP(for KXE6)AHU capacity.



## Multiple refrigerant system

- 1) Multiple independent refrigerant circuits
- 2) One master control to control the whole system.

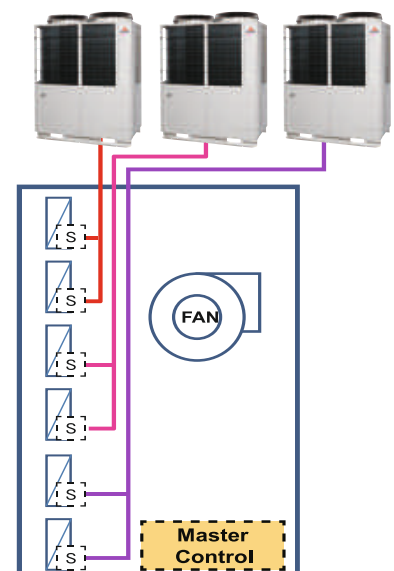
### Advantage

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

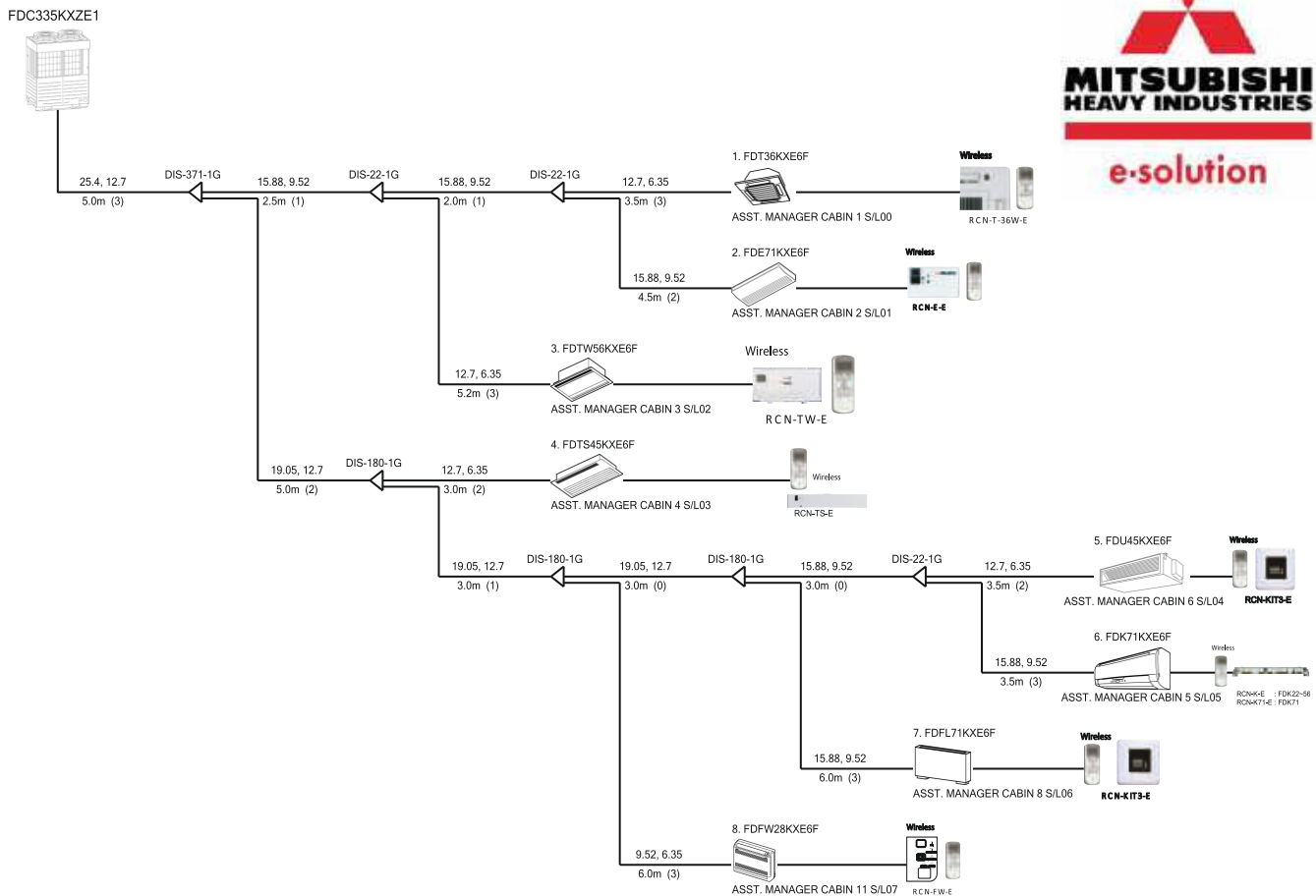
### Additional parts over a single refrigeration system

- One master control

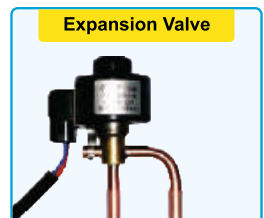
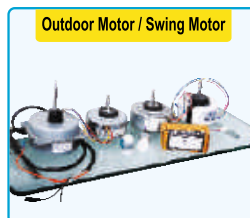
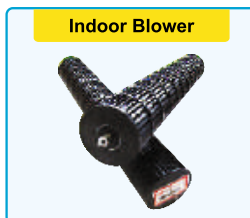
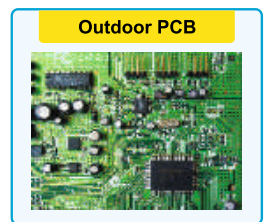
The slave EEV control and EEV set are the same as a single refrigeration system.



# Design Software Tool : E-Solution



## Genuine Spares & Service Center



# PRODUCTION PROCESS

The system features following factors.

1. YATAI or cell Production
  - Multi Model Production
  - Multi Skill Production
  - Small Lot Production
2. Changing from Push to Pull System
  - Synchronize to Assembly
  - First In First Out (FIFO)
3. Visual Control System
  - Kanban
  - Undon
4. Reduction of Production Lead Time and Work in Process Stock
5. Introduction of KAIZEN Activity (Continuous Improvement) in the factory at all times





## Before starting use

### Heating Performance

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

### Indication of sound values

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

### Use in oil atmosphere

Avoid installing this unit in an atmosphere where oil scatters or builds up, such as in a kitchen or machine factory.

If the oil adheres to the heat exchanger, the heat exchanging performance will drop, mist may be generated, and the synthetic resin parts may deform and break.

### Use in acidic or alkaline atmosphere

If this unit is used in an acidic atmosphere such as hot spring areas having high level of sulfuric gases or in an alkaline atmosphere including ammonia or calcium chloride, places where the exhaust of the heat exchanger is sucked in, or at coastal areas where the unit is subject to salt breezes, the outer plate or heat exchanger, etc., will corrode. Please ask a dealer or specialist when you use an air conditioner in places differing from a general atmosphere.

### Use in places with high ceilings

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

### Refrigerant Leakage

The refrigerant (R410A) used for Air conditioner is non-toxic and inflammable in its original state.

However, in consideration of a state where the refrigerant leaks into the room, measures against refrigerant leaks must be taken in small rooms where the tolerable level could be exceeded. Take measures by installing ventilation devices, etc.

### Use in snowy areas

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

#### •Snow prevention

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

#### •Snow Piling

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

### Automatic defrosting device

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

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

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

### Servicing the air-conditioner

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

## Safety Precautions

### Air-Conditioner usage target

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

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

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

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

### Before use

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

### Installation

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

Make sure that the outdoor unit is stable in installation. Fix the unit to stable base.

### Usage place

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

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



**MITSUBISHI HEAVY INDUSTRIES  
THERMAL SYSTEMS, LTD.**

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

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

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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-Haler (Qingdao)  
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BIWAJIMA PLANT  
Mitsubishi Heavy Industries, Ltd.  
Air-conditioning & Refrigeration Systems Headquarters



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



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



**Mitsubishi Heavy Industries- Mahajak Air Conditioners Co.Ltd.** Lat krabang Industries Estate, Phase 3, 200 Moo 4, Chalongsong Road, Lamplatiw, Lat krabang, Bangkok Thailand 10520



### Sales, Service & Marketing Headquarter (India)

2/8, (IAPL House) West Patel Nagar, New Delhi - 110008

Tel.: 011-47230000-99 | For Customer Assistance: Toll Free No.: 1800 102 0055

Email: [info@iaplgroup.com](mailto:info@iaplgroup.com) | Website: [www.iaplgroup.com](http://www.iaplgroup.com)

### Contact Us

**HO SALES:** 9953453020 / 8800190709, **DELHI + NCR:** 8826390505, 9899143596 **MUMBAI / MAHARASHTRA:** 8879633402, 8879599905, **KOLKATA:** 9830022568, **GUJARAT & MADHYA PRADESH:** 7069072011, **RAJASTHAN:** 9636991144, 7290011960, **UTTAR PRADESH & UTTARAKHAND:** 8826392387, **PUNJAB:** 8377901197, 7290094941, **HARYANA:** 8800190708, **JAMMU & KASHMIR:** 8377901197, **CHENNAI / COCHIN / ANDHRA PRADESH / TELANGANA / KARNATAKA:** 9849102323, **PROJECT & SERVICE:** 8826396161, 8826392333, 8826899164.