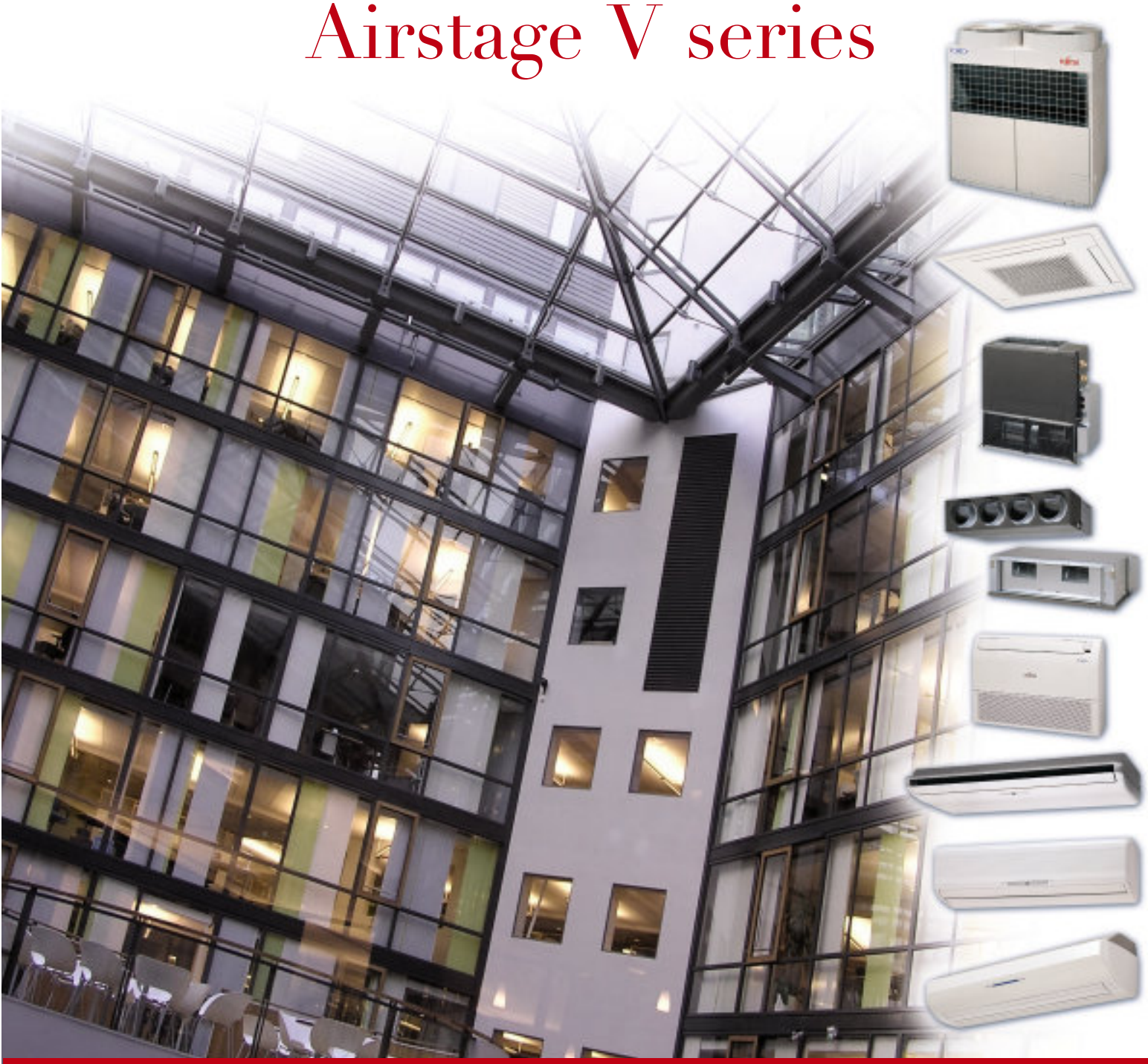
Airstage V series

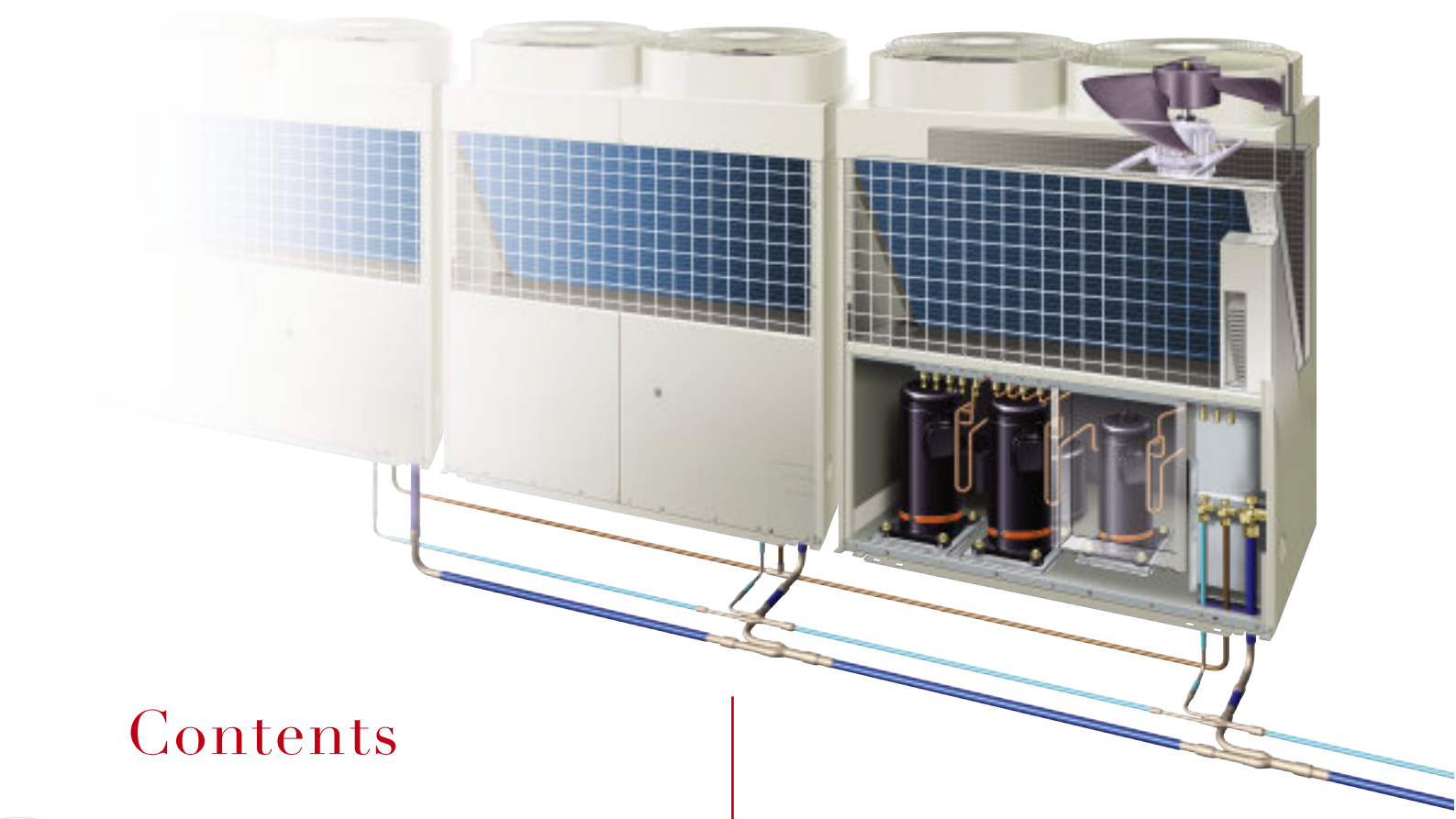


Variable Refrigerant Flow System

Multi Air Conditioning System for Buildings
Large Capacity Multi VRF System
DC Inverter Control Compressor
Long Piping System Design
High Efficiency Refrigerant R410A

INVERTER

air conditioning
FUJITSU
the silence



Contents

High reliability 4
Compressor rotation control
Optimum oil control
Emergency operation
Web monitoring tool

Improved comfort 5
Room temperature control
Inverter control
Liquid level balance control
Super quiet

Design freedom 6
Connectable large capacity
Low outdoor air temperature operation
Compact outdoor unit
Communication wire method

High efficiency operation 7
High COP
High efficiency refrigerant R410A
Sine-wave DC inverter
DC inverter control compressor
Effective use of the heat exchanger
of other outdoor units

Service and maintainability 7

Indoor units line up 8-9

Control system 10-11

Airstage V series

High reliability multi air conditioning system for buildings which confirms the technological advances of the Fujitsu General range of air conditioners preferred in more than 90 countries around the world.

Features

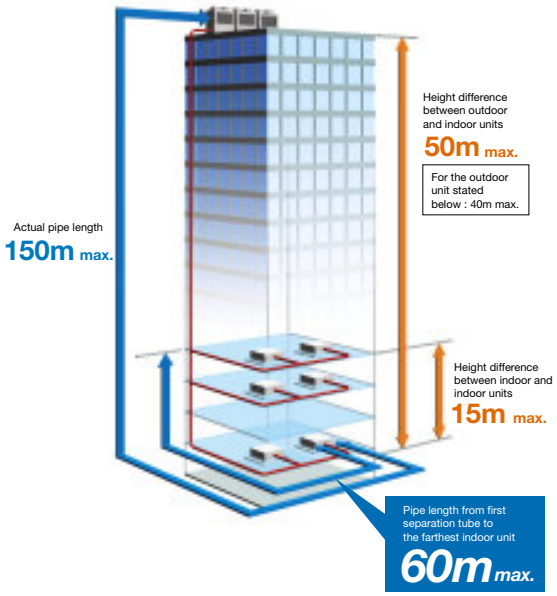
DC Inverter Control Compressor

The introduction of high efficiency DC inverter compressors and the latest in control technology provides more precise operation, improving system efficiency, resulting in energy saving and better economy.

High Efficiency Refrigerant R410A

The environmental load has been reduced by using the zero ozone layer depleting potential, high efficiency refrigerant, R410A. This refrigerant provides increased energy efficiency, system performance and heat transfer, resulting in a reduction in pipe sizes compared to previous models. This also leads to cost savings during the installation phase of a project.

Airstage V series



Long Piping System Design

Maximum piping length 150m. Key design features allows 60m between the first separation tube and farthest indoor unit. This also allows use in large buildings and provides a high degree of design flexibility.

System Line up

Outdoor units can be combined with varieties of capacities according to scale and use

Model line up

Capacity	Model name	
	Master	Slave
22.4kW (8HP)	AJYA72LATF	AJYA72UATF
28.0kW (10HP)	AJYA90LATF	AJYA90UATF
40.0kW (14HP)	AJYA90UATF	AJY126UATF

Capacity range

HP	Capacity (kW)	Maximum Connectable Indoor unit	Total capacity of Indoor unit (kW)	Ratio of outdoor unit capacity
8	22.4	15	11.2-33.6	
10	28.0	16	14.0-42.0	
14	40.0		20.0-60.0	
16	44.8	30	22.4-67.2	
18	50.4		25.2-75.6	
20	56.0		28.0-84.0	
22	62.4	32	31.2-93.6	
24	68.0		34.0-102	
26	72.8		36.4-109	50-150%
28	80.0		40.0-120	
30	84.0		42.0-126	
32	90.4		45.2-135	
34	96.0	48	48.0-144	
36	102		51.2-153	
38	108		54.0-162	
42	120		60.0-180	

Large Capacity Multi VRF System

The ability to connect 3 outdoor units together in series up to a total capacity of 42HP (120kW) in each 2HP offers greater design freedom, reducing the number outdoor units and piping installation space compared the conventional models.

Slave units

Master units

By combining 6 types (Master Unit and Slave Unit 8/10/14 HP) of 1 to 3 Outdoor Units, ranging from 8 HP (22.4 kW) to 42 HP (120 kW).

Variation of capacity range

It can be corresponded to the wide variation of 8-42HP (22.4-120.0kW).

No. of outdoor unit	System total capacity (kW)						
	22.4 (8HP)	28.0 (10HP)	40.0 (14HP)	-	-	-	-
	44.8 (16HP)	50.4 (18HP)	56.0 (20HP)	62.4 (22HP)	68.0 (24HP)	80.0 (28HP)	-
	72.8 (26HP)	84.0 (30HP)	90.4 (32HP)	96.0 (34HP)	102 (36HP)	108 (38HP)	120 (42HP)

Combination of outdoor units

HP	Capacity (kW)	Master	Slave1	Slave2
8	22.4	AJYA72LATF		
10	28.0	AJYA90LATF		
14	40.0	AJY126LATF		
16	44.8	AJYA72LATF	AJYA72UATF	
18	50.4	AJYA90LATF	AJYA72UATF	
20	56.0	AJYA90LATF	AJYA90UATF	
22	62.4	AJY126LATF	AJYA72UATF	
24	68.0	AJY126LATF	AJYA90UATF	
28	80.0	AJY126LATF	AJY126UATF	
26	72.8	AJYA90LATF	AJYA72UATF	AJYA72UATF
30	84.0	AJYA90LATF	AJYA90UATF	AJYA90UATF
32	90.4	AJY126LATF	AJYA90UATF	AJYA72UATF
34	96.0	AJY126LATF	AJYA90UATF	AJYA90UATF
36	102	AJY126LATF	AJY126UATF	AJYA72UATF
38	108	AJY126LATF	AJY126UATF	AJYA90UATF
42	120	AJY126LATF	AJY126UATF	AJY126UATF

FUJITSU

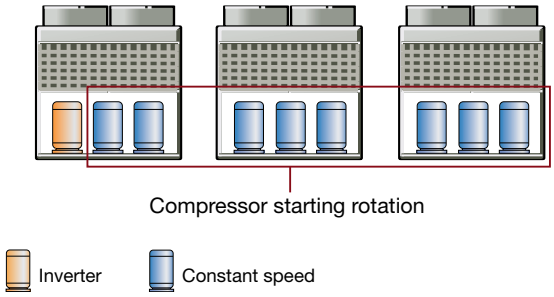
High reliability

High reliability provides a constant comfortable indoor environment

Compressor rotation control

Improvement of long life by reducing compressor wear

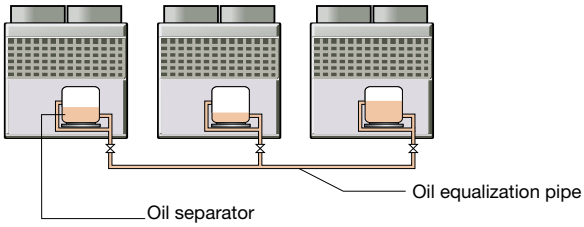
In addition to control which reduces the number of times the compressor is started and stopped, the load at starting is shared and equalized by rotation control. This rotation improves the durability and reliability of each compressor.



Optimum oil control

Stable operation of compressor by optimum oil control

1. High trapping efficiency, large capacity cyclone type oil separator.
2. Oil balance control which maintains a uniform oil level.
3. Oil recovery control by monitoring of refrigerant flow velocity.

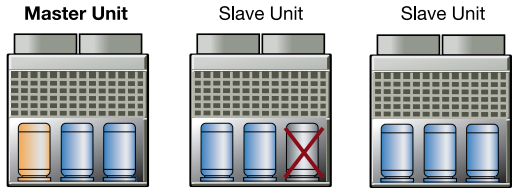


Emergency operation

Outdoor unit

Continuous operation is possible even in the unlikely event of compressor trouble occurring.

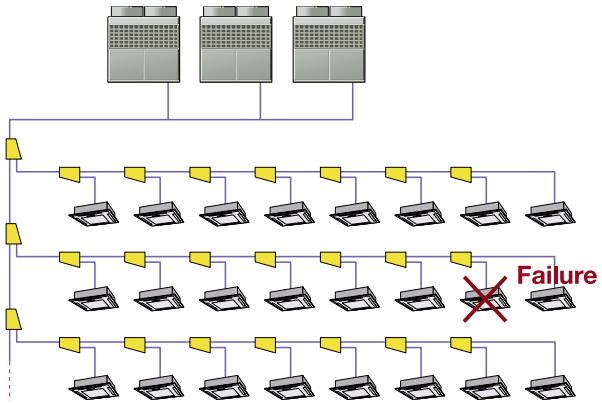
There is no immediate system shutdown if trouble occurs in any compressor. The other compressors continue to operate on an emergency basis.



Indoor unit

Continuous operation is possible even if trouble occurs at an indoor unit.

Each indoor unit is controlled individually on the system network. This allows all indoor units continue to run unaffected even if trouble should occur at one indoor unit in the system.

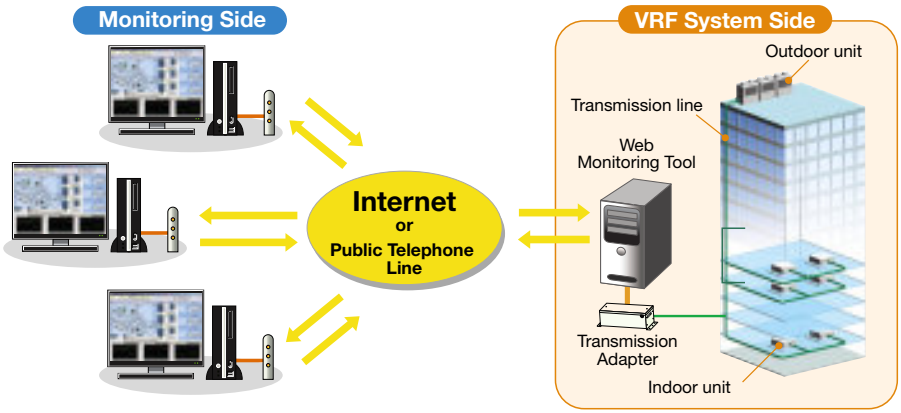


Web monitoring tool Software

UTR-YMSA

Trouble free operation at all times by web monitoring tool

The operational status of the VRF system within the building can be monitored in real time over the Internet. Periodic system checks can be performed regularly with error notification E-mail can be automatically transmitted to remote users.

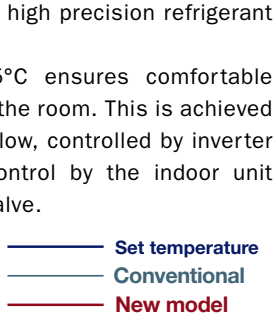


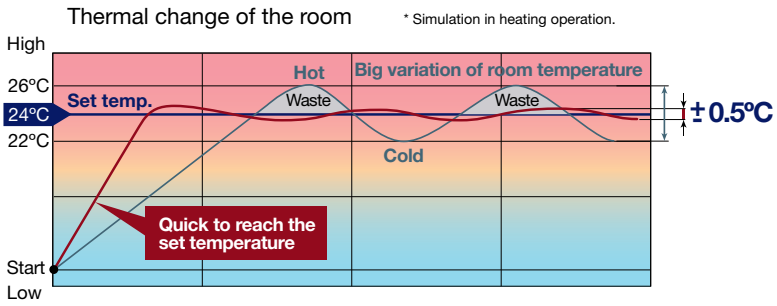
Improved comfort

Comfort enabled by high precision control technology

Room temperature control

Comfort at any time by high precision refrigerant flow control.
High precision +- 0.5°C ensures comfortable temperature control of the room. This is achieved by smooth refrigerant flow, controlled by inverter and room feedback control by the indoor unit electronic expansion valve.



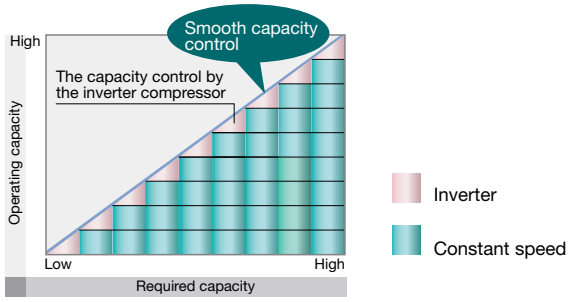


Comfortable due to Small variation of room temperature

Inverter control

Comfort and energy saving achieved by implementation of inverter control

Comfort and energy saving is achieved by the adoption of linear STEP control in conjunction with inverter and constant speed compressor combination, which allows more precise control of the necessary refrigerant circulation amount required according to the system load. This also allows for a comfortable environment by use of smooth capacity control.



Super Quiet

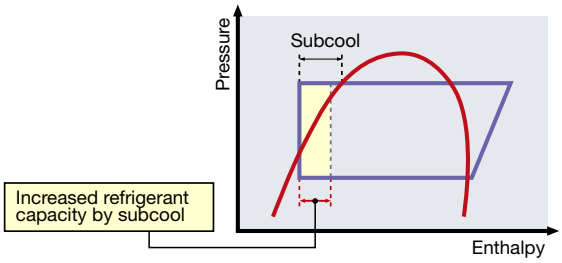
Quiet operating sound outdoor unit achieved

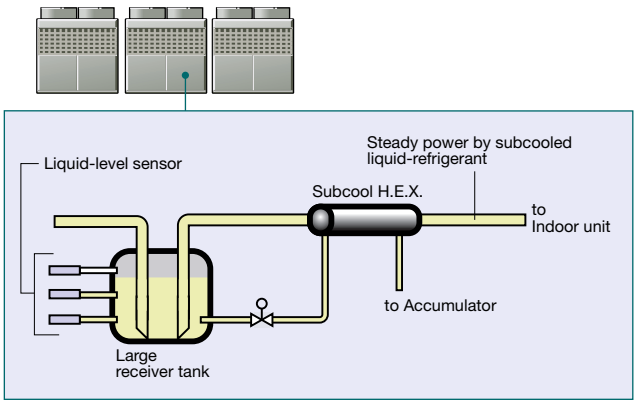
Operating noise has been reduced still further through the application of a new dual casing bell mouth and large fan. The noise level can be reduced by 4-5dB (A) compared to normal operation by selecting silent operation.

Liquid level balance control

Stable capacity and reduction of refrigerant noise by optimum state refrigerant

Balancing of the refrigerant in the system is optimized by liquid level balance control and subcool circuit between the receiver tanks of each outdoor unit. Stable refrigerant supply allows long pipe runs and achieves stable operational system performance whilst reducing unpleasant refrigerant noise.





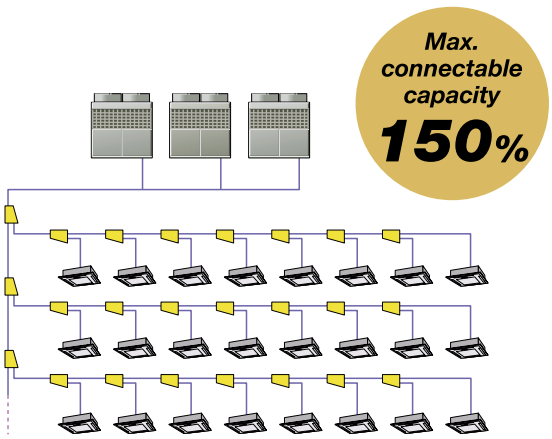
Design freedom

Design features ensures that solution are provided for all applications

Connectable large capacity

Indoor units up to 150% of the capacity of the outdoor unit can be connected

The indoor unit connection ratio of this system can be from 50 to 150% of the outdoor unit capacity, thus achieving the industry's highest level of diversification with up to 48 indoor units (30 to 42HP) connectable on one refrigerant system.

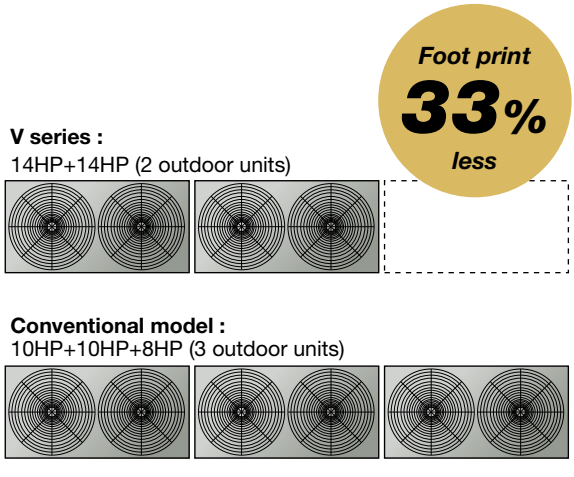


Note: When all indoor units are operating at maximum capacity, the individual indoor units operate at a slightly lower capacity.

Compact outdoor unit

Installation space can be reduced freeing up valuable building space

Outdoor unit installation space can be reduced by up to approximately 33% by installing the V Series compared to a 28HP system with our conventional model. In addition, the number of pipelines from outdoor unit to each floor is also reduced.

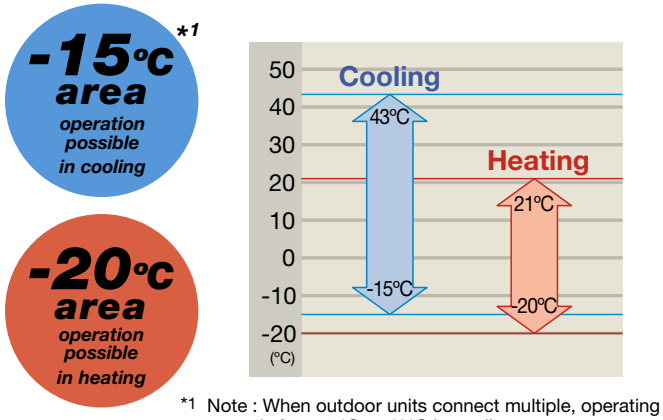


Example : 28HP system installation

Low outdoor air temperature operation

Expansion of operating ranges

World's top class low outdoor air temperature operating range is achieved. This extends the potential locations for use to the cold regions of the world.



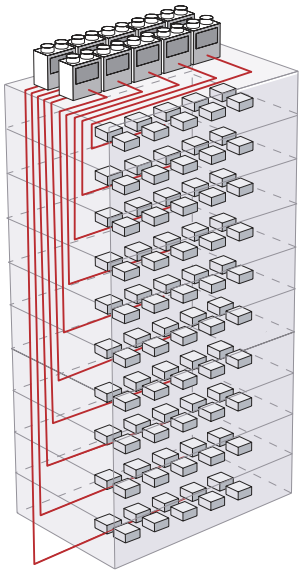
*1 Note : When outdoor units connect multiple, operating range is from -5°C to 43°C in cooling.

*1 Note : When outdoor units connect multiple, operating range is from -5°C to 43°C in cooling.

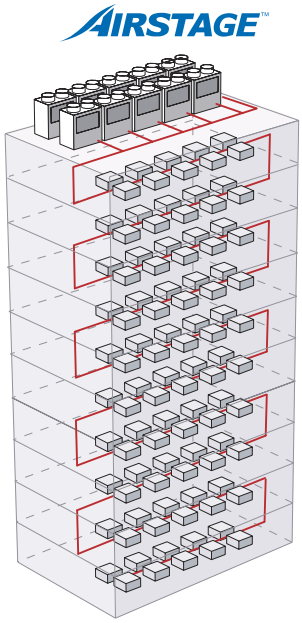
Communication wire method

Connection method simplifies installation and prevents errors

By using our non polar wiring connection method, the wiring length is reduced compared to other wiring systems.



Other wiring method



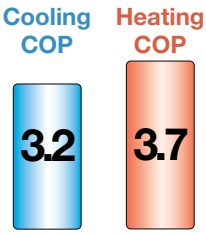
Simple wiring method

High efficiency operation

High efficiency operation system

High COP

All key features of the outdoor unit give a realization to the higher level of COP.



* The data are available for 10HP master unit.

High efficiency refrigerant R410A

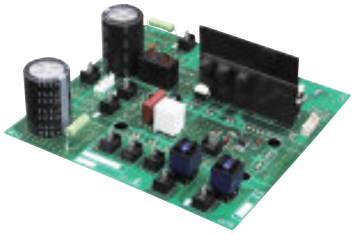
Refrigerant R410A

Reduction of environmental load and improvement of operation efficiency realized by adoption of a new refrigerant.

Sine-wave DC Inverter

Sine-wave DC inverter smoothly controls operation from low speed to high speed

Energy saving and high efficiency operation were achieved by adopting sine-wave DC inverter control to smooth motor operation.



DC inverter control compressor

High efficiency operation realized by adoption of high pressure scroll compressor

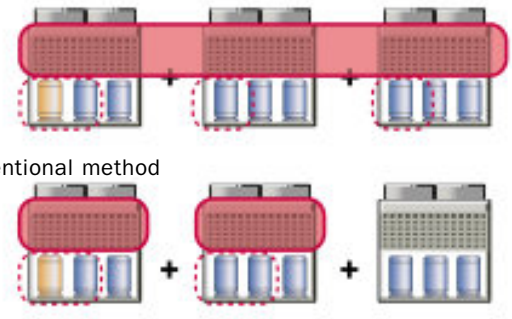
An energy saving and high efficiency operation system is realized by combining a DC inverter-controlled scroll compressor with a constant speed scroll compressor.

Effective use of the heat exchanger of other outdoor units

This system takes advantage of the features of the multi type outdoor unit

The heat exchanger is operated at maximum efficiency by effectively using the heat exchanger of each outdoor unit reciprocally.

Example: The larger heat exchanger than the capacity of a compressor is used in each outdoor unit.



Service and maintainability

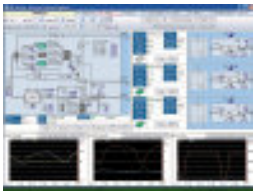
User friendly design features allows quick response in the unlikely event that trouble occurs

Service tool Software

UTR-YSTC

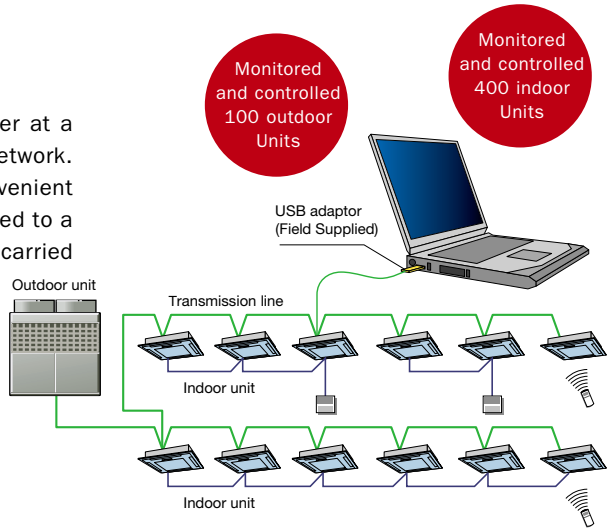
Dedicated maintenance and inspection tools are available

The sensor data of each part can be collected from the computer at a minimum short interval when connected anywhere on the VRF network. The connection is made through an extremely portable and convenient USB type adaptor and this ensures that response times are reduced to a minimum when issues are identified and test operations can be carried out proactively.



Equipment detail (Diagram)

System list



FUJITSU

Indoor units line up

Broad range of indoor units of many designs and capacity ranges available which can be selected to suit any air conditioning needs

Type	Capacity range (kW) / (BTU) / Model code	2.2 / 7 / 20	2.8 / 9 / 25	3.6 / 12 / 35	4.05 / 14 / 40	5.3 / 18 / 50	5.7 / 20 / 57
Compact Cassette	Compact size panel (600 x 600 mm) design that fits well for European ceiling panel.	 AUXB20LATF	 AUXB25LATF	 AUXB35LATF	 AUXB40LATF	 AUXB50LATF	
Cassette	Slim type Since the unit height of ceiling void part is changeable up to 35 mm, installation is easy. By detachable suction grill, filter is easily cleaned.						Slim type  AUYA57LATF
Compact Duct	Silent model It is a small-sized and quiet duct type indoor unit which changes a room into the comfortable space.	 ARXB20LALF	 ARXB25LALF	 ARXB35LALF	 ARXB40LALF	 ARXB50LALF	
Low Static Pressure Duct	Silent model It is possible to install in the narrow ceiling space, at the 270mm height with slim design.						
Duct	Slim type design makes it optimum to install in the room where ceiling void is narrow up to 270mm.						
High Static Pressure Duct	This indoor unit can send a large air flow with long ducts.						
Floor / Ceiling	The slim and lightweight design allows the unit to be suspended from the ceiling or installed on the floor. This type is easy to fit the room design.			 ABYA35LATF	 ABYA40LATF	 ABYA50LATF	
Ceiling	Since it is ultra-thin design, it matches perfectly with the interior design if it is suspended from the ceiling.						
Compact Wall Mounted	Comfort model This is recommended as the room where quietness is required.	 ASYE20LACF	 ASYE25LACF	 ASYE35LACF	 ASYE40LACF		
Wall Mounted	The double auto swing louver function provides pleasant air flow to every corner of the room.					 ASYA50LATF	
Ceiling Wall	Since it is installed on the wall near the ceiling, the wall face design will also be clear and neat.	 AWYA20LATF	 AWYA25LATF	 AWYA35LATF	 AWYA40LATF	 AWYA50LATF	

With this model, connection of EV kit is necessary.

6.8 24 71	7.05 25 71	8.8 30 80	10.5 36 100	12.7 45 125	14.1 54 140	17.0 60 170	25.4 90 250
	Slim type  AUYA71LATF	Slim type  AUYA80LATF	 AUYA100LATF	 AUYA125LATF	 AUYA140LATF		
	 ARXB71LATF	 ARXB80LATF	 ARXB100LATF	 ARXB125LATF			
	 ARXA71LATF	 ARXA80LATF	 ARXA100LATF	 ARXA125LATF			
			 ARXC100LATF	 ARXC125LATF		 ARXC170LATF	 ARXC250LATF
 ABYA71LATF							
		 ABYA80LATF	 ABYA100LATF	 ABYA125LATF	 ABYA140LATF		
 ASYA71LATF		 ASYA80LATF					
 AWYA71LATF		 AWYA80LATF					

CONTROL SYSTEM

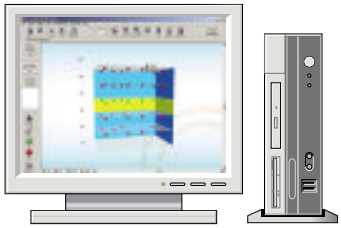
It supports every user's needs by offering a variety of control systems available, such as individual control, central control and building management system control options

Central Control

1. PC Controller Software

UTR-YOTB Option

Allows central building monitoring and control by a user friendly operation system. Up to 400 indoor units , or controllable groups or controllable remote controller groups.



2. Central Remote Controller

UTB-YCA Option

Up to 400 indoor units / 400 remote controller groups / 64 groups can be controlled by one system.

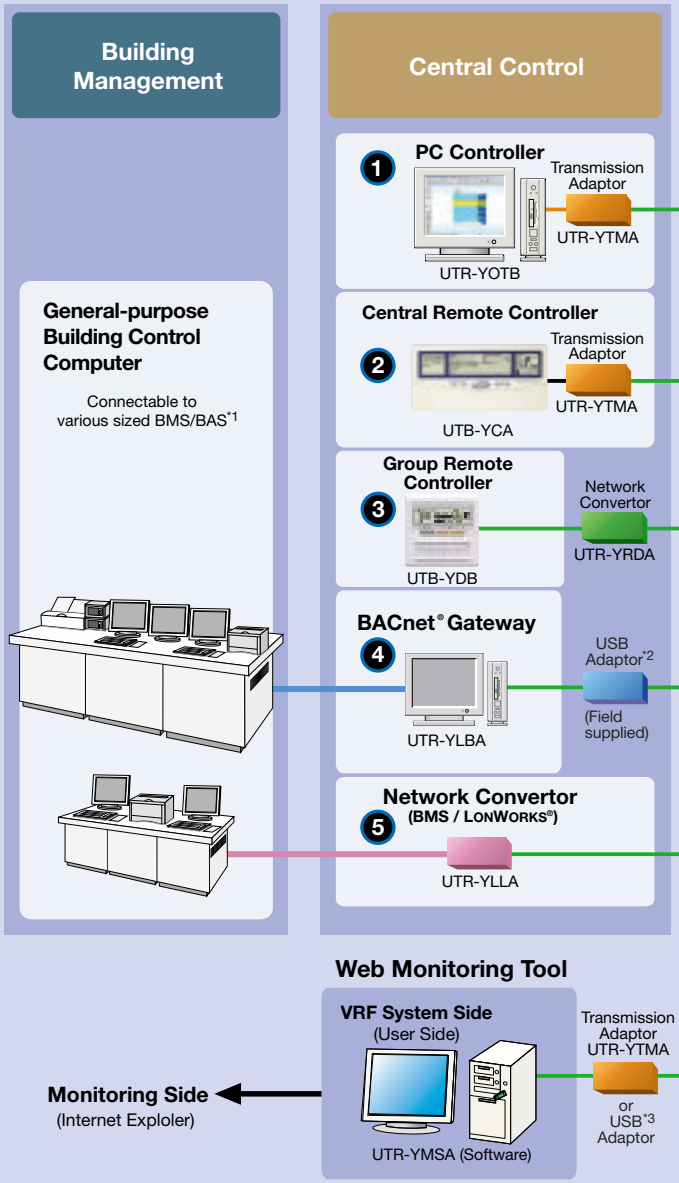
3. Group Remote Controller

UTB-YDB Option

Centrally controls up to 8 remote controller groups, and up to 64 groups RC in a VRF system.

* For connecting Group Remote Controller to a VRF System, network convertor (UTR-YRDA) is necessary. Also, the maximum of 4 units of group remote controllers can be connected to this convertor.

System Diagram



*1. BMS/BAS: Building Management System / Building Automation System
*2. USB Adaptor is XLON® USB Adaptor of DH Electronics.
*3. USB Adaptor is U10 USB Network Interface of Echelon® Corporation.

Cooperation with Building Management System

Adopting BACnet®, it can connect VRF system and BMS/BAS.

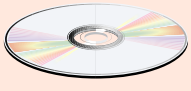
VRF System can be monitored and controlled from a BMS through a LONWORKS® interface.

4. BACnet® Gateway Software

Max. Connectable Indoor Units 1600

UTR-YLBA Option

it can cope with the requirements of the systems in the high-rise buildings.



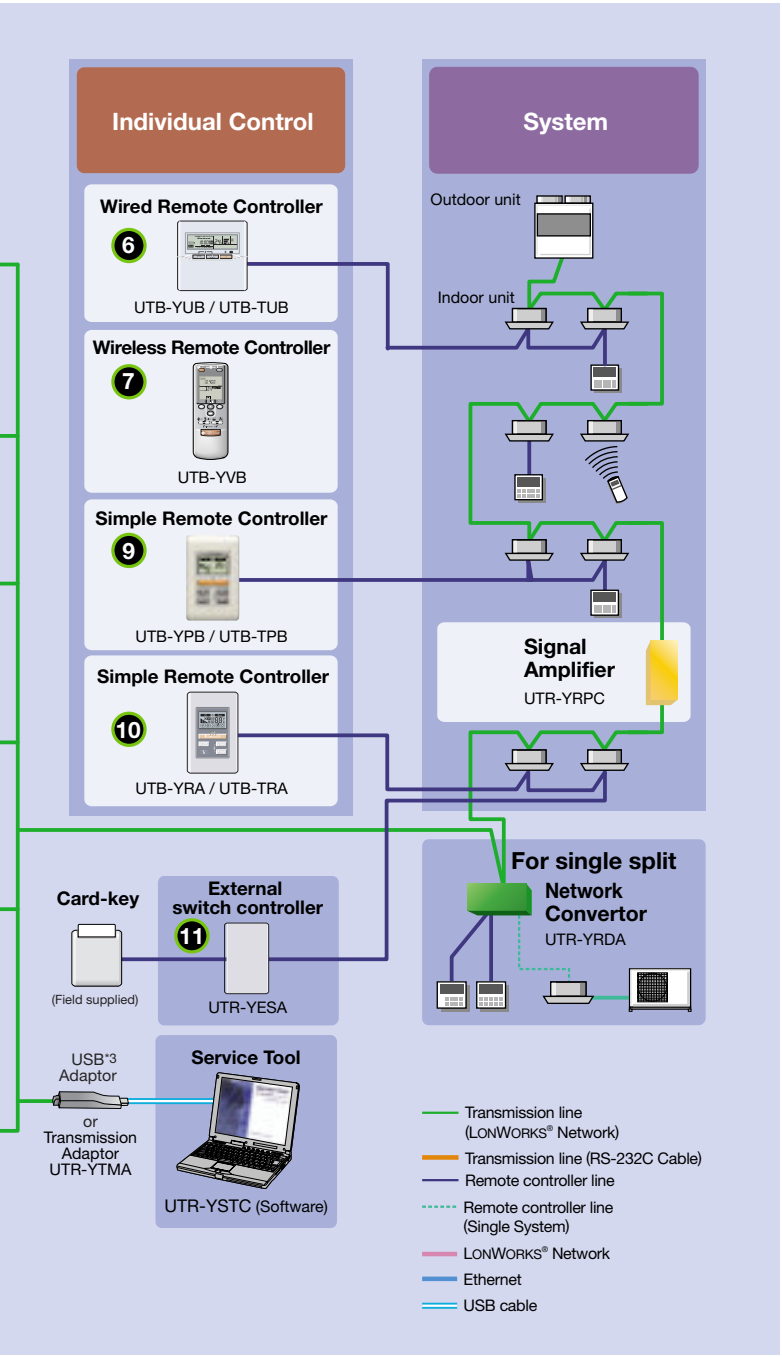
CD-ROM (Software)

Software Protection Key

5. Network Convertor for LONWORKS®

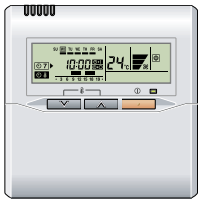
Max. Connectable Indoor Units 128

UTR-YLLA Option



Individual Control

6. Wired Remote Controller



UTB-YUB / UTB-TUB **Option**

Operates the air conditioning system for a week according to the plan by built-in weekly timer.

7. Wireless Remote Controller

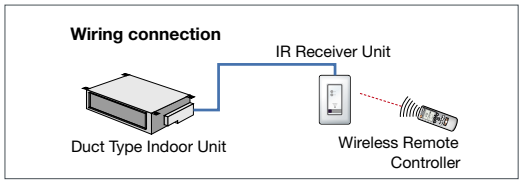
UTB-YUB **Option**

It can be used at your hand.
4 types of daily timers can be used easily. A single controller controls up to 16 indoor units.

8. IR Receiver Unit

UTB-YWA **Option**

By connecting receiver unit, duct type indoor unit can be controlled with wireless remote controller.



9. Simple Remote Controller

UTB-YPB / UTB-TPB **Option**

Designed to be easy operation for guest, provides access to basic functions.

10. Simple Remote Controller

without master control

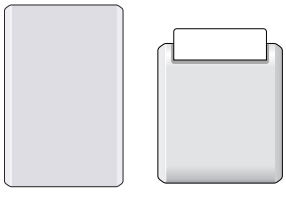
UTB-YRA / UTB-TRA **Option**

Suitable for guest room since its display is easy to see even in the dark room with the basic functions.

11. External Switch Controller

UTB-YESA **Option**

Air conditioner switching can be controlled by connecting other sensor switches as Card-key switch that allows coontrol of the basic function.



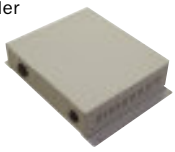
Sensor SW Card-Key

FUJITSU

Optional parts

Adaptor / Convertor

For Single Split or Group Remote Controller



Network Convertor
Model : UTR-YRDA

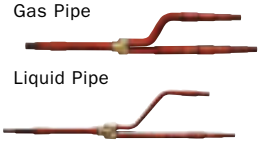
Network Convertor
Model : UTR-YLLA

Transmission Adaptor
Model : UTR-YTMA

Signal Amplifier
Model : UTR-YRPC

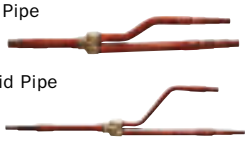
Connection Tube

Gas Pipe
Liquid Pipe



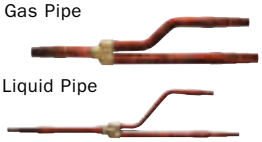
Separation Tube
Model : UTR-BP090L

Gas Pipe
Liquid Pipe



Separation Tube
Model : UTR-BP180L

Gas Pipe
Liquid Pipe



Separation Tube
Model : UTR-BP567L

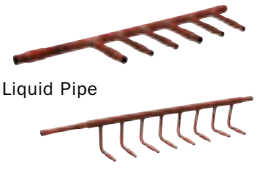
Gas Pipe

Liquid Pipe

Oil Pipe

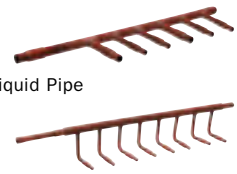
Outdoor Unit Branch kit
Model : UTR-CP567L

Gas Pipe
Liquid Pipe



Header
Model: UTR-H0906L
UTR-H1806L

Gas Pipe
Liquid Pipe



Header
Model: UTR-H0908L
UTR-H0808L

Others

For Low Static Pressure Duct Type / Duct Type

Flange (Square)
Model : UTD-SFO45T

For Low Static Pressure Duct Type / Duct Type

Flange (Round)
Model : UTD-RF204

For Low Static Pressure Duct Type / Duct Type

Long-life Filter
Model : UTD-LF25NA

For High Static Pressure Duct Type

Long-life Filter
Model : UTD-LF60KA

For Ceiling Type

Drain Water Riser Kit
Model : UTR-DPB24T

Remote Sensor Unit
Model : UTD-RS100

For Compact Cassette Type

Grille Kit
Model : UTG-UDYD-W
UTG-UDGD-W

For Compact Wall Mounted (Comfort Model) Type

EV Kit
Model code : < 09 :UTR-EV09XA
≥ 12 :UTR-EV14XA

air conditioning

FUJITSU

the silence

Distributed by: