TOSHIBA

Leading Innovation

Simultaneous Heating and Cooling Solution for Large Buildings

SHRM e

SUPER HEAT RECOVERY MULTI

Air Conditioning for large buildings

TOSHIBA
Leading Innovation >>>

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Toshiba solutions

At Toshiba, we believe that “Evolution is leading the path to a better future”. Through the decades, we have been constantly creating innovative and high-quality electrical appliances to increase our consumers’ satisfaction. Now, with Toshiba "SHRM-e", the latest commercial air conditioning for various buildings.

The SHRM-e has been creatively developed and designed under the concept Excellence, Expansion, and Enhancement to ensure your utmost comfort and convenience like never before.

With the latest technology improved and developed to make SHRM-e the top commercial air conditioning for any solution that intelligently meets your needs, Toshiba will stop at nothing to create innovation to evolution of the future, where life is a step away from perfection.

SHRM e
SUPER HEAT RECOVERY MULTI

e XCELLENCE

e NHANCEMENT

e XPANSION

SHRM
SUPER HEAT RECOVERY MULTI

Air Conditioning for large buildings

SHRM
SUPER HEAT RECOVERY MULTI

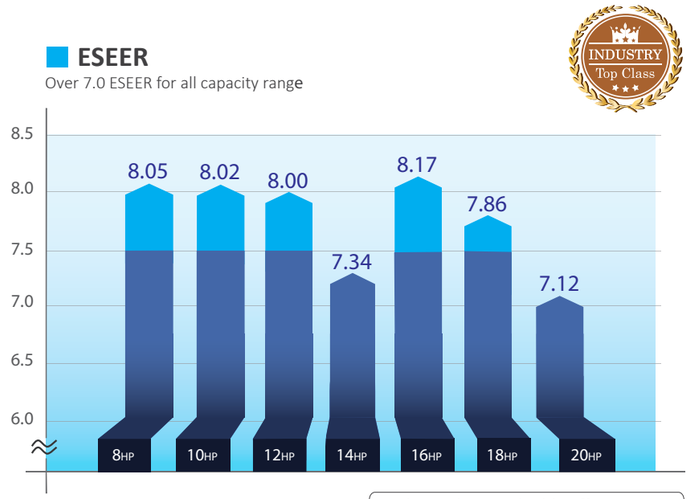
XCELLENCE

Greater efficiency, Greater happiness

SHRM-e is the latest innovation in key technology for VRF air conditioning systems. New and evolved technologies have gone hand in hand to achieve class defining seasonal energy efficiency levels. This results not just in lower energy costs for building owners, but also increased flexibility for contractors, designers and maintenance companies alike.

ESEER

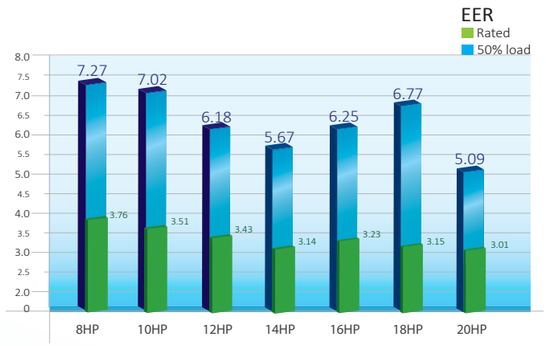
Thanks to Toshiba's unique energy saving technologies, the new SHRM-e model can achieve class leading ESEER values, making it one of the most seasonal efficient heat recovery air conditioning system available in the market today.

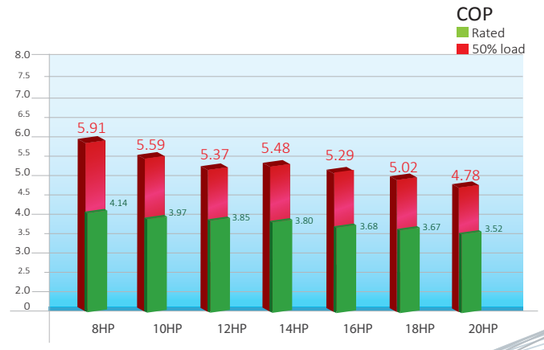


Utilizing the new highly efficient core technologies has resulted in greater energy efficiency and performance.

EER and COP

Maximum efficiency is obtained under 50% part load conditions, under which VRF systems operate predominantly. The expert use and evolution of Toshiba's core technologies have allowed the new SHRM-e system to achieve the highest part load COP and EER in the industry.





SHRM e
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eNHANCEMENT

INDIVIDUAL ON/OFF AND TEMPERATURE CONTROL

Freedom through comfort

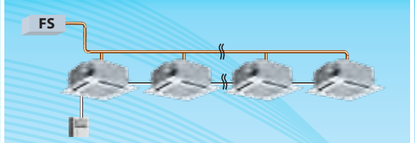
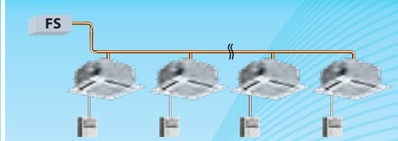
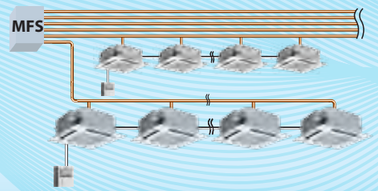
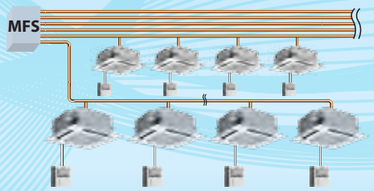
New for SHRM-e, is the ability to vary the set point temperature and the on/off status for each indoor that has been grouped together off of a single multi selector port. This results in each end user being able to specify their own temperature preferences and enables them to save energy costs by giving them the ability to turn individual indoor units off when not in use.

Temperature control freedom

SHRM-e provides each user the freedom to choose their desired room temperature.

New choice in air conditioning system design

Toshiba's new multi port flow selector can now control the supply of refrigerant for up to 10 indoor units off of a single FS port. These units when fitted with a separate remote controller, provides the user with the freedom to set the room temperature they want. The installation flexibility of the new multi port flow selector also provides the installer with an increased number of options with regards to location and piping design.

	Group remote control			Individual remote control		
Single FS Unit						
	FS Model (RBM-Y***3FE)	112	180	280	FS Model (RBM-Y***3FE)	112	180	280
	Max n.of FCU	6	8	8	Max n.of FCU	6	10	16
Multi port FS Unit						
	FS Model	RBM-Y1801F4PE	RBM-Y1801F6PE		FS Model	RBM-Y1801F4PE	RBM-Y1801F6PE	
	Max n. of FCU/Branch			8	Max n. of FCU/Branch			10

ENHANCEMENT SOFT COOLING

More comfortable and more energy saving

The development of the soft cooling mode provides a new level for cool comfort. You will have the freedom to personalize the air flow intensity, angle and direction directly from the remote control and enjoy the indoor environment at the right temperature without being directly exposed to the cold draft.

Standard operation
All louvers open and full swing

Soft cooling operation
Selected louvers and reduced swing

More comfortable
More energy saving

Greater efficiency with Soft cooling mode

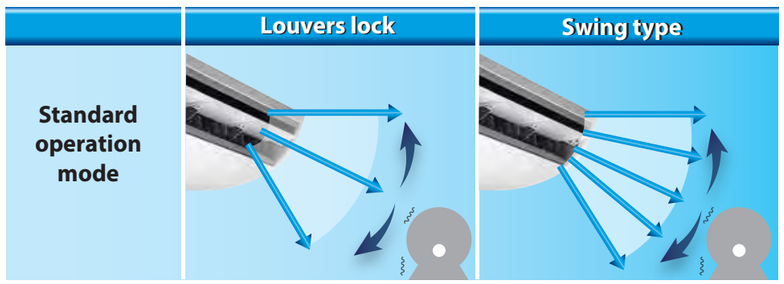
The multi louver setting is a new development for our indoor units that allows the end user to personalize the flow of air to their personal preference.

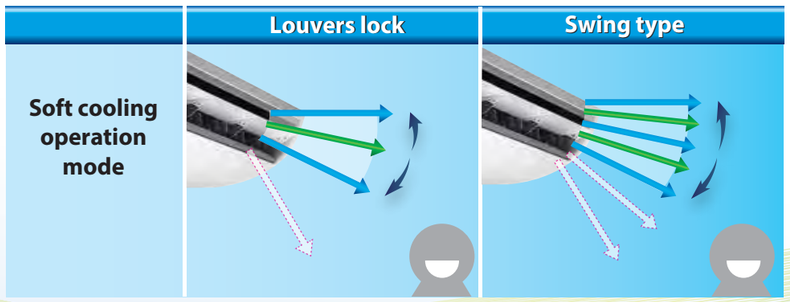
Standard operating mode

Soft cooling mode

Geater louver control

The standard louver control provides air flow over a wide area, in particular circumstances this may not be appropriate. With the new soft cooling mode, the louver positions can be set at either 3 or 5 steps, providing the end user with a precise control over the air flow direction.

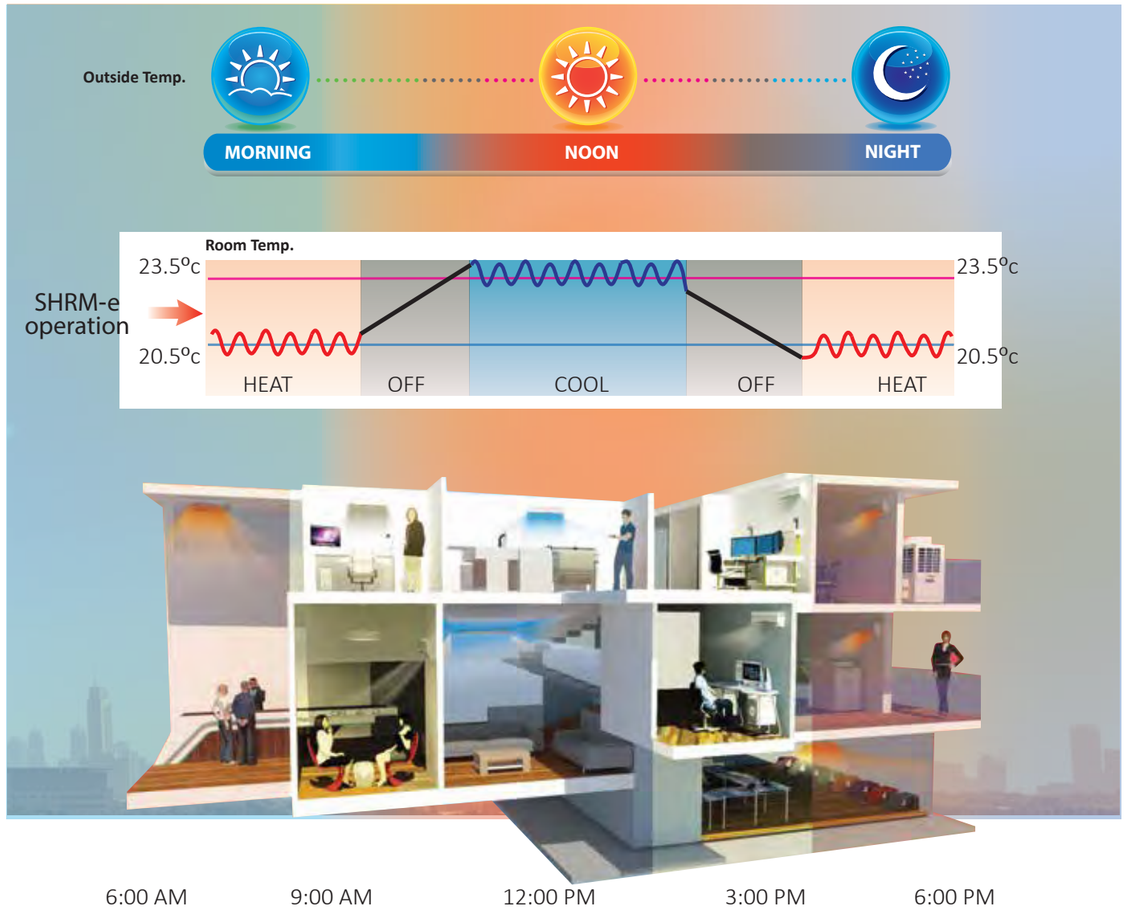




ENHANCEMENT
AUTO TEMPERATURE CONTROL

Automatic temperature control system

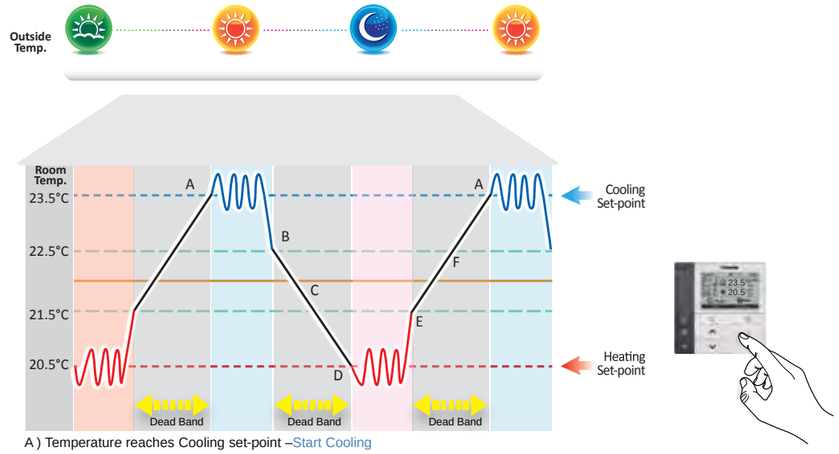
Toshiba's innovative and diverse Automatic Temperature Control (ATC) system has evolved with the new SHRM-e model. Excellent levels of end user comfort and energy saving have been increased, providing a year round solution to the customer.



Greater energy saving with the Dual set point

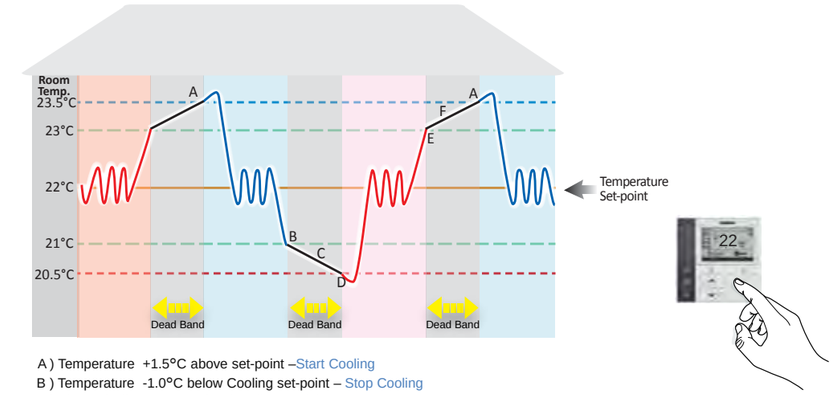
The SHRM-e's Automatic Temperature Control (ATC) system has been designed to enhance user comfort and reduce energy consumption. Each user can easily set minimum and maximum temperatures with the ATC, which automatically maintains the air at the desired temperature. Once the maximum temperature has been reached, the intelligent Dual Set Point function will tell the system to shut down and change mode to adjust the temperature to the minimum required, or vice versa. This enhances efficiency and reduces running costs, by extending the thermal off periods, when the unit stops between changes in heating and cooling mode.

Dual set point system



A) Temperature reaches Cooling set-point –Start Cooling
B) Temperature -1.0°C below set-point – Stop Cooling
C) Thermal off. Fan operation (Cooling mode)
D) Temperature -reaches Heating set-point – Start Heating
E) Temperature +1.0°C above set-point – Stop Heating
F) Thermal off. Fan operation (Heating mode)

Auto temperature control system



A) Temperature +1.5°C above set-point –Start Cooling
B) Temperature -1.0°C below Cooling set-point – Stop Cooling
C) Thermal off. Fan operation (Cooling mode)
D) Temperature -1.5°C below set-point – Start Heating
E) Temperature +1.0°C above Heating set-point – Stop Heating
F) Thermal off. Fan operation (Heating mode)

Note : Dead band (Thermal off status) The Thermal off is a condition when the units is operating in ventilation mode only

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eNHANCEMENT
NEW REMOTE CONTROLLER

Toshiba's new remote controller gives you maximum control at a touch of a finger

Toshiba's new remote controller, has evolved to include many new features, including soft cooling, dual set point, new fan speed indicator and individual on/off control. All of these new features are easily accessible and can be operated by a touch of a button.

Soft cooling operation

The new soft cooling feature has been developed to give to the customer precise control over the air flow, ensuring maximum comfort levels.

Standard Soft cooling

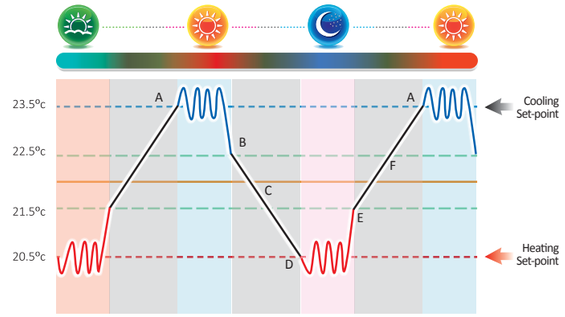
Fan speed indicator

This new model offers you five fan speed selections: LOW, LOW+, MED, MED+, HIGH for greater satisfaction.

*Depends on unit model

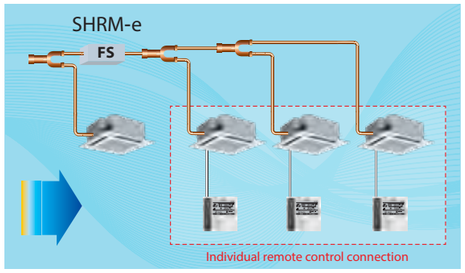
Dual set point

New dual set point control allows the end user to set both the high and low temperature operation, increasing the time spent in thermal off conditions, resulting in increased energy saving and lower operating costs.



Individual on/off temperature range control

This control gives you the freedom to turn on and off the SHRM-e system so you can control the indoor unit directly.



eNHANCEMENT
MULTI FLOW SELECTOR UNIT

Multi port flow selector maximise the freedom of temperature selection

Offices often demand different temperatures at the same time. For example, during the winter months there will be a high demand for heating operation, however for some areas of the building, for example an area with many electrical appliances, the heat load maybe too high, requiring the indoor unit to cool the room. Toshiba's new SHRM-e and multi port flow selector unit helps end users to achieve the fine balance between heating and cooling at the same time, whilst maximizing energy efficiency values.

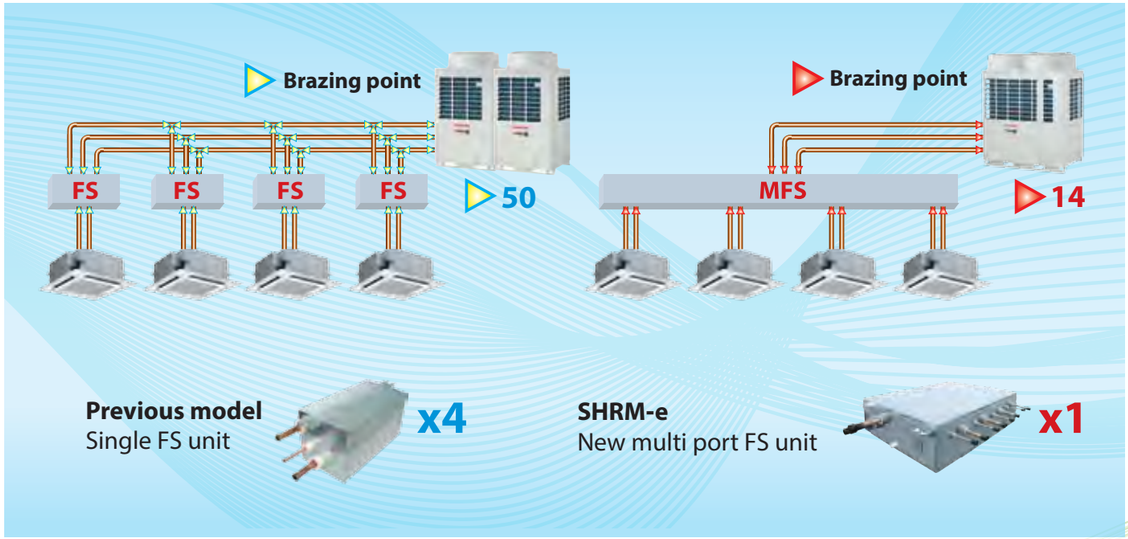
Save time and costs by reducing connecting points and piping

The multi port flow selector unit can reduce the number of physical connections, reducing the time to install and therefore the overall system installation costs.

More flexibility with the individual remote control connection system

The multi port flow selector unit affords greater satisfaction as it can work with a single remote control to control the temperature of each indoor unit so each space has the temperature and operation mode to fit its demands.

Reduced number of connections



SHRM e
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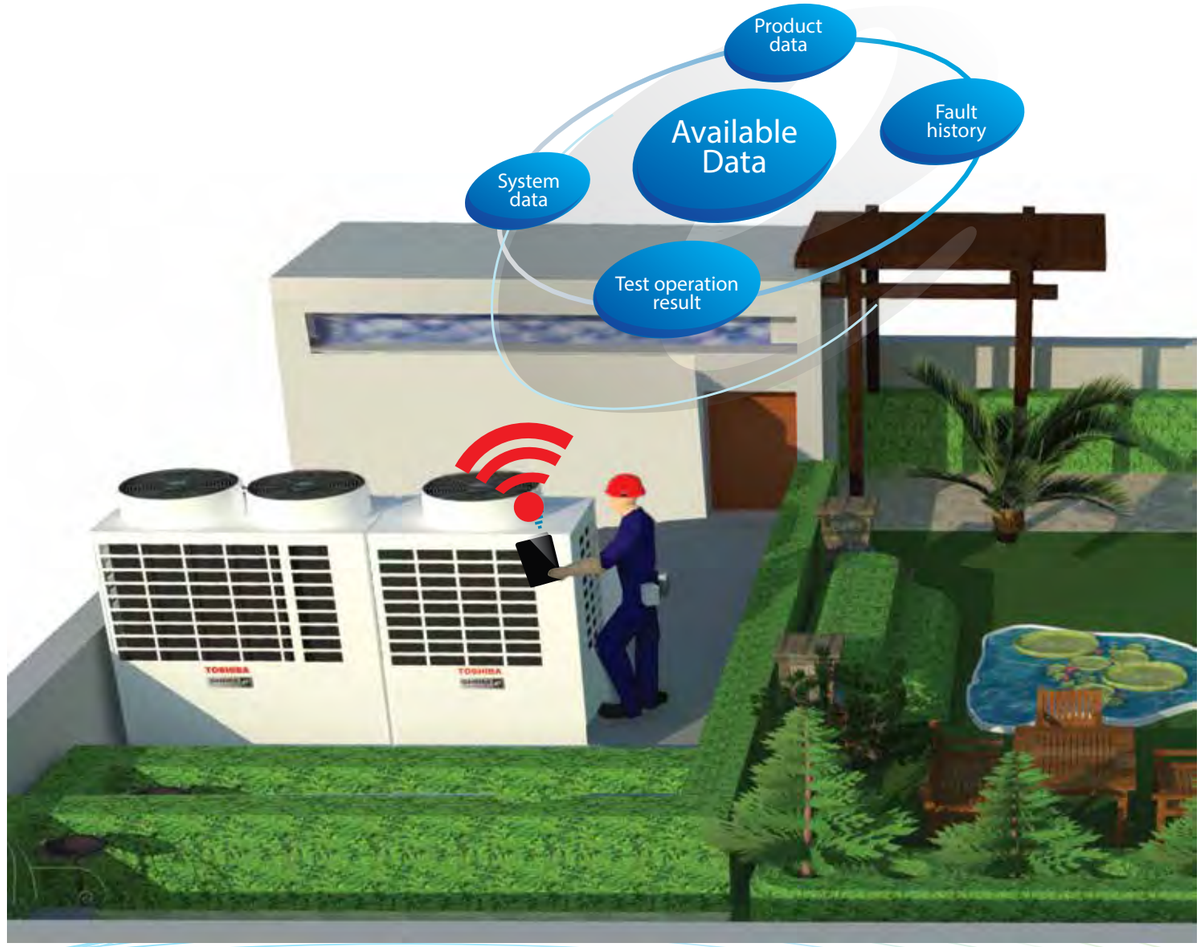
eNHANCEMENT SMMS WAVE TOOL

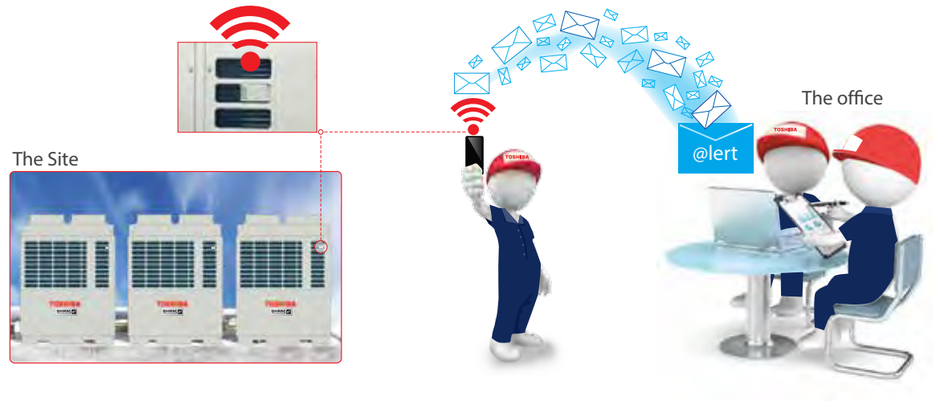
Top technology SMMS wave tool

The SMMS wave tool makes it easier to install and repair the air conditioning system. With the SMMS wave tool application on your smart phone, you can access important data from the outdoor unit via the Internet to analyze and fix a problem in the quickest time possible.



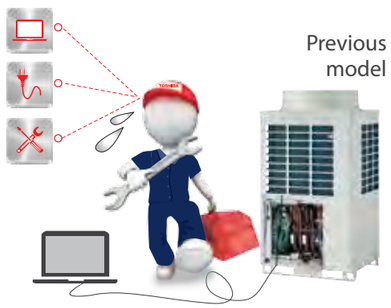
System data can be easily sent via your phones e-mail system

SMMS wave tool allows technicians access to important data, just by a simple touch of the NFC tag that is found on each outdoor unit. Data can then be sent via the internet directly back to the office where it can be analysed and a solution can be found.



Save time, Save energy, Save on costs

When you access the data in the SHRM-e, you don't need to open the outdoor unit's cover to connect to the computer. So repairs can be made easier, faster and cheaper.



*Smartphone specification : Android™ OS 5.0

SHRM e
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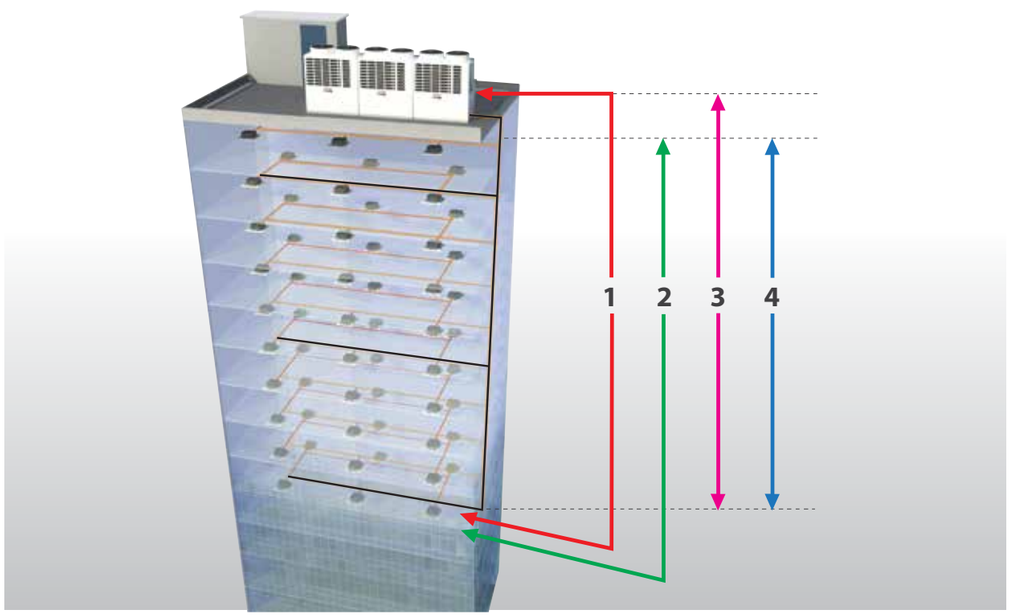
eNHANCEMENT
FLEXIBLE PIPING DESIGN

Piping design flexibility

The industry's top class piping technology makes installation of piping in the SHRM-e much more flexible. Units can be much further apart, giving more options for a more attractive system.



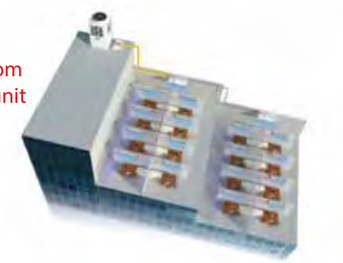
1. Total length	1000m*
2. Farthest equivalent length	200m
3. Height between Outdoor unit-Indoor unit (outdoor unit above/below)	90m**,*** / 40m**,***
4. Height between Indoor unit-Indoor unit	40m / 15m****

* : Above 34HP combination
** : Please see product data book for more detail
*** : It is 70m for normal time, and has some specific conditions for 90m 50m if piping length between Indoor units is more than 3m

Piping design flexibility "FS unit-FCU"

As the SHRM-e multi port flow selector and indoor unit can be as far as 50 meters apart, the refrigerant piping can be lengthened, offering more flexibility in design to make every space more comfortable as well as attractive.

Farthest pipe from FS unit-Indoor unit
50m



Total piping length

Applied with Toshiba's unique and greatly improved technology, SHRM-e can reach up to 1,000 meters maximum piping length.

INDUSTRY Top Class
Total piping length
1,000m
SHRM-e Max. total length

Height between indoor units

A maximum vertical distance between indoor units which reaches up to 40 meters

Farthest equivalent length

The maximum equivalent distance between the outdoor unit and the farthest indoor unit tops at 200 meters, a best-in-class for the industry.

INDUSTRY Top Class
Farthest equivalent length
200m
In case of 42HP

Height between outdoor unit to indoor unit

Another industry's top class is a maximum vertical distance between outdoor unit to indoor unit which reaches up to 90 meters.
SHRM-e's enhanced piping capabilities result in more benefits for the system design, installation flexibility, as well as the less installation cost.

Height between outdoor unit to indoor unit

SHRM e
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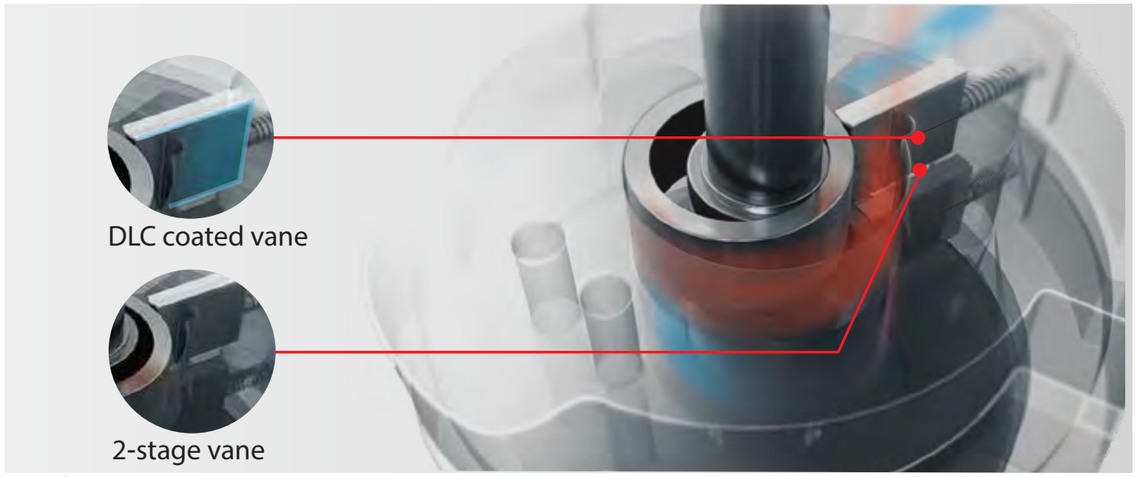
e-XPANSION TWIN ROTARY COMPRESSOR

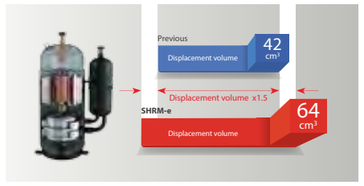
More durable with leading twin rotary compressor technology

The advanced technology used within SHRM-e results in a robust and durable system. The innovations made with Toshiba twin rotary compressor have resulted in an even stronger and more reliable system, extending the operational life and, thus, reducing the overall maintenance costs



Wide range compressor

Using new cutting-edge technology, Toshiba's new twin rotary DC driven compressor can operate in a much wider range of rotational speed, giving increase performance, whilst maximising energy efficiencies.



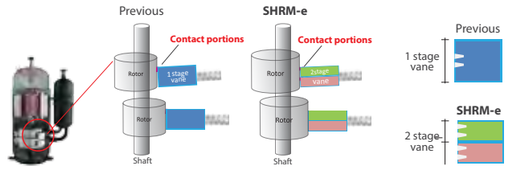
DLC coated vane

The new Toshiba Diamond Like Carbon Coating technology is unique to Toshiba VRF compressors. It covers the wear surfaces on compression vanes for outstanding hardness and wear resistance, enhancing both the compressor's performance and durability and confirming Toshiba's reputation of providing exceptional reliability.

* DLC: Diamond Like Carbon

2-stage vane

The all new dual vane technology reduces any ariances in the contact area between the vane and roller, even when the compressor is operating at very high speeds. This results in minimal compression losses inside the compressor, further optimising its performance, fficiency and reliability.



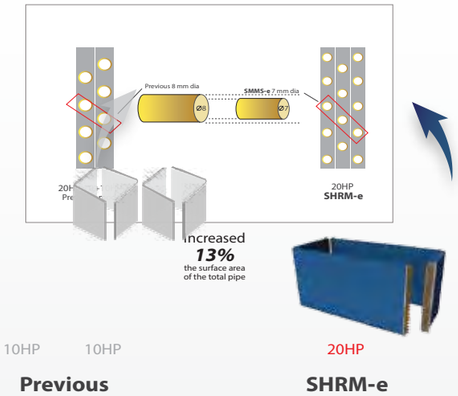
e-XPANSION HEAT EXCHANGER

More efficient outdoor unit with new heat exchanger

Toshiba's new 3-row heat exchanger design, with reduced pipe size and increased total number of passes, improves both system performance and efficiency.

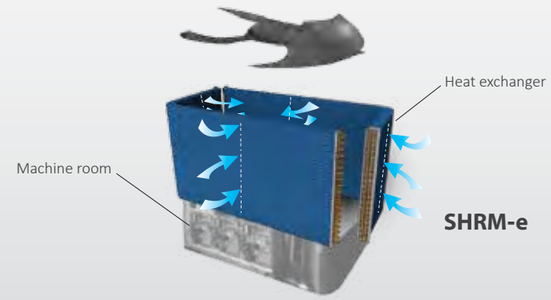
More efficient surface area of total pipe

The new heat Exchanger has been designed with a smaller 7mm diameter pipe. This improves system efficiency, by maximising the surface area of the pipe, by as much as 13%.



4-way heat exchanger can realize balanced air flow

The 4-sided design ensures maximum possible flow rate across the entire coil, maximising system efficiency.



SHRM e
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e-XPANSION PROPELLER FAN

More efficient propeller fan design

The newly designed propeller fan used in the new SHRM-e system has been designed to operate at a low sound pressure levels, whilst maximising air flow over the outdoor coil. Ensuring both end user comfort and increased system efficiency.

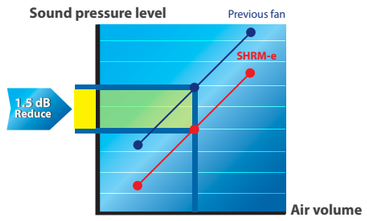
New advanced blade shapes for a better air flow management

Each fan blade is designed with a unique profile, a solution that guarantees a smoother air flow, whilst reducing airflow turbulence and hence noise to a minimum. The new propeller fan can deliver not only the same amount of air as the previous model, but at a lower sound pressure level as well.

Each blade has a unique profile	Design improvement
	

More quiet comparison

New propeller design has resulted in the same performance but with a reduced sound level of 1.5dB(A) when compared to previous models.



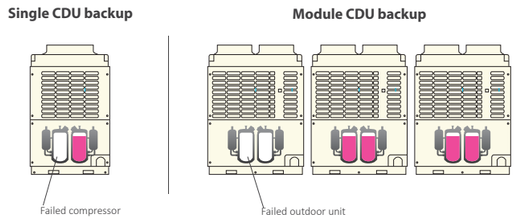
e-XPANSION RELIABILITIES AND BACKUP OPERATION

Continuous operation with the reliabilities and backup operation

SHRM-e has the reliabilities and backup operation system to ensure efficient, continuous operation.

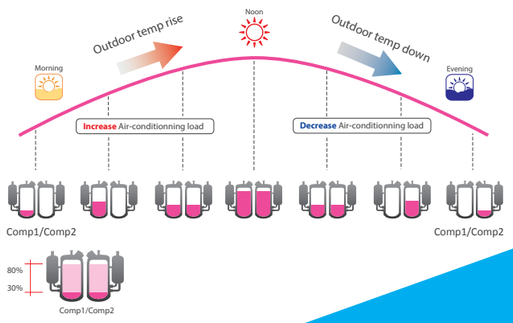
Backup operation

For maximum reliability, ALL Inverter control can be adjusted to compensate for a failed compressor or header unit. In the unlikely event of a compressor failure, backup operation is available in both a single system or as a module. This provides reassurance to the end user that the system will continue to operate whatever the circumstance.



Reliabilities rotation control

The reliabilities rotation control system helps in the control of every system compressor so one is not working harder than another.
The system will control the compressors by referring to data on environmental conditions and send results to the outdoor unit to reduce stress and, thus, extend operational life.



SHRM e
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XPANSION
OPERATING TEMPERATURE RANGE

Operating temperature range

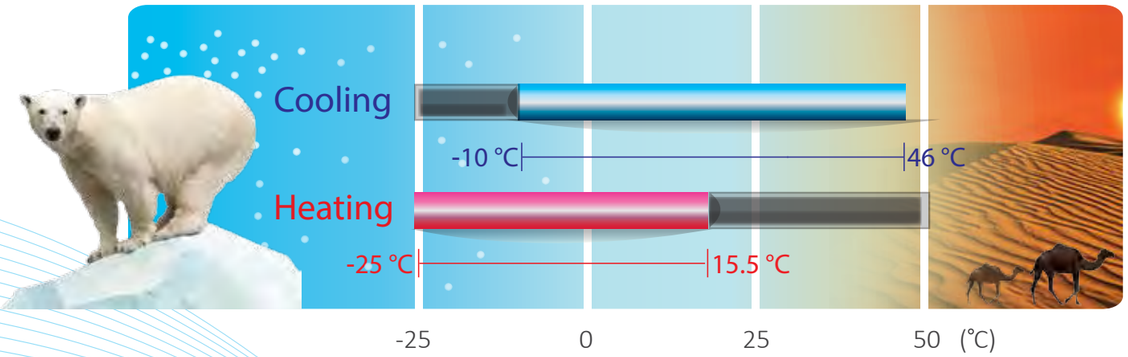
The SHRM-e has been developed so it can operate at different temperatures with optimum efficiency.

Operation ambient temperature expansion

The SHRM-e outdoor unit can withstand all types of weather conditions. In cooling mode it can operate from-10℃ to 46℃ and in heating mode from-25℃ to 15.5℃.

Operation ambient temperature expansion

(Cooling : ℃DB,Heating : ℃WB)



Outdoor units

Standard model

							
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP
Model Name (MMY-)	MAP0806FT8(J)P MAP0806FT7(J)P	MAP1006FT8(J)P MAP1006FT7(J)P	MAP1206FT8(J)P MAP1206FT7(J)P	MAP1406FT8(J)P MAP1406FT7(J)P	MAP1606FT8(J)P MAP1606FT7(J)P	MAP1806FT8(J)P MAP1806FT7(J)P	MAP2006FT8(J)P MAP2006FT7(J)P
Cooling capacity (kW)	22.4	28.0	35.5	40.0	45.0	50.4	56.0
Heating capacity (kW)	22.4	28.0	35.5	40.0	45.0	50.4	56.0

												
Capacity	22HP		24HP		26HP		28HP		30HP		32HP	
Model Name (MMY-)	AP2216FT8(J)P AP2216FT7(J)P		AP2416FT8(J)P AP2416FT7(J)P		AP2616FT8(J)P AP2616FT7(J)P		AP2816FT8(J)P AP2816FT7(J)P		AP3016FT8(J)P AP3016FT7(J)P		AP3216FT8(J)P AP3216FT7(J)P	
Units in combination (MMY-MAP)	1206FT8(J)P 1006FT8(J)P	1206FT7(J)P 1006FT7(J)P	1406FT8(J)P 1006FT8(J)P	1406FT7(J)P 1006FT7(J)P	1406FT8(J)P 1206FT8(J)P	1406FT7(J)P 1206FT7(J)P	1406FT8(J)P 1406FT8(J)P	1406FT7(J)P 1406FT7(J)P	1606FT8(J)P 1406FT8(J)P	1606FT7(J)P 1406FT7(J)P	1806FT8(J)P 1406FT8(J)P	1806FT7(J)P 1406FT7(J)P
Cooling capacity (kW)	61.5		68.0		73.5		80.0		85.0		90.4	
Heating capacity (kW)	61.5		68.0		73.5		80.0		85.0		90.4	

										
Capacity	34HP		36HP		38HP		40HP		42HP	
Model Name (MMY-)	AP3416FT8(J)P AP3416FT7(J)P		AP3616FT8(J)P AP3616FT7(J)P		AP3816FT8(J)P AP3816FT7(J)P		AP4016FT8(J)P AP4016FT7(J)P		AP4216FT8(J)P AP4216FT7(J)P	
Units in combination (MMY-MAP)	1806FT8(J)P 1606FT8(J)P	1806FT7(J)P 1606FT7(J)P	1806FT8(J)P 1806FT8(J)P	1806FT7(J)P 1806FT7(J)P	2006FT8(J)P 1806FT8(J)P	2006FT7(J)P 1806FT7(J)P	2006FT8(J)P 2006FT8(J)P	2006FT7(J)P 2006FT7(J)P	1406FT8(J)P 1406FT8(J)P 1406FT8(J)P	1406FT7(J)P 1406FT7(J)P 1406FT7(J)P
Cooling capacity (kW)	95.4		100.8		106.4		112.0		120.0	
Heating capacity (kW)	95.4		100.8		106.4		112.0		120.0	

												
Capacity	44HP		46HP		48HP		50HP		52HP		54HP	
Model Name (MMY-)	AP4416FT8(J)P AP4416FT7(J)P		AP4616FT8(J)P AP4616FT7(J)P		AP4816FT8(J)P AP4816FT7(J)P		AP5016FT8(J)P AP5016FT7(J)P		AP5216FT8(J)P AP5216FT7(J)P		AP5416FT8(J)P AP5416FT7(J)P	
Units in combination (MMY-MAP)	1606FT8(J)P 1406FT8(J)P 1406FT8(J)P	1606FT7(J)P 1406FT7(J)P 1406FT7(J)P	1806FT8(J)P 1406FT8(J)P 1406FT8(J)P	1806FT7(J)P 1406FT7(J)P 1406FT7(J)P	1806FT8(J)P 1606FT8(J)P 1406FT8(J)P	1806FT7(J)P 1606FT7(J)P 1406FT7(J)P	1806FT8(J)P 1806FT8(J)P 1406FT8(J)P	1806FT7(J)P 1806FT7(J)P 1406FT7(J)P	1806FT8(J)P 1806FT8(J)P 1606FT8(J)P	1806FT7(J)P 1806FT7(J)P 1606FT7(J)P	1806FT8(J)P 1806FT8(J)P 1806FT8(J)P	1806FT7(J)P 1806FT7(J)P 1806FT7(J)P
Cooling capacity (kW)	125.0		130.4		135.4		140.8		145.8		151.2	
Heating capacity(kW)	125.0		130.4		135.4		140.8		145.8		151.2	

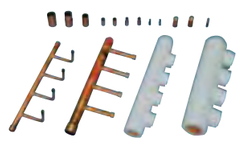
* Power: MMY-MAPxxxxFT8(J)P: 3-phase 50 Hz 400V (380 - 415V), MMY-MAPxxxxFT7(J)P: 3-phase 60 Hz 380V
* The source voltage must not fluctuate more than ±10%.
* Rated conditions
Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

Flow selectors

					
Model Name	RBM-Y1123FE	RBM-Y1803FE	RBM-Y2803FE	RBM-Y1801F6PE	RBM-Y1801F4PE
Connectable indoor unit capacity	11.2	11.2 to 18.0	18.0 to 28.0	18.0/branch	18.0/branch
Connectable indoor units* (units) (Group control / Individual control)	6/6	8/10	8/16	8 per branch / 10 per branch	8 per branch / 10 per branch

*Only group operation is possible with 1 (or2) remote controller.
*Connection cable kit : RBC-CBK15FE

Branching joints

	Y-shape branching joint				Branch headers				Outdoor unit connection piping kit	
Appearance					 (4-branch headers)					
Model name	RBM-BY55FE	RBM-BY105FE	RBM-BY205FE	RBM-BY305FE	RBM-HY1043FE	RBM-HY2043FE	RBM-HY1083FE	RBM-HY2083FE	RBM-BT14FE	RBM-BT24FE
Usage (Classification according to indoor unit capacity code)	Total below 6.4	Total 6.4 or more and below 14.2	Total 14.2 or more and below 25.2	Total 25.2 or more	Max.4 branches		Max.8 branches		Total below 26.0	Total 26.0 or more
					Total below 14.2	Total 14.2 or more and below 25.2	Total below 14.2	Total 14.2 or more and below 25.2		

Outdoor unit specifications

Standard model (Single unit)

Technical specifications

Equivalent HP				8HP	10HP	12HP	14HP
Model name			(MMY-) 50Hz	MAP0806FT8(J)P	MAP1006FT8(J)P	MAP1206FT8(J)P	MAP1406FT8(J)P
			60Hz	MAP0806FT7(J)P	MAP1006FT7(J)P	MAP1206FT7(J)P	MAP1406FT7(J)P
Outdoor unit type				Inverter			
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V			
Cooling (*1)	Nominal		(kW)	22.4	28.0	33.5	40.0
	Power consumption		(kW)	5.69	7.63	9.35	12.20
	EER (Energy Efficiency Ratio)			3.93	3.67	3.58	3.29
Heating (*1)	Nominal		(kW)	22.4	28.0	33.5	40.0
	Power consumption		(kW)	5.17	6.72	8.30	10.10
	COP (Coefficiency of Performance)			4.34	4.17	4.03	3.98
External dimensions (Height / Width / Depth)			(mm)	1,800/990/780	1,800 / 990 / 780	1,800 / 1,210 / 780	1,800 / 1,210/ 780
Total weight			(kg)	262	262	315	315
Compressor	Motor output		(kW)	2.3 x 2	3.1 x 2	3.9 x 2	4.8 x 2
Fan unit	Motor output		(kW)	1.0	1.0	1.0	1.0
	Air volume		(m^3/h)	9,700	9,700	12,200	12,200
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 22.2	ø 22.2	ø 28.6	ø 28.6
		Discharge gas side	(mm)	ø 19.1	ø 19.1	ø 19.1	ø 22.2
		Liquid side	(mm)	ø 12.7	ø 12.7	ø 12.7	ø 15.9
		Balance pipe	(mm)	ø 9.5	ø 9.5	ø 9.5	ø 9.5
Sound pressure level (Cooling/Heating)			(dB(A))	59/61	59/61	60/62	62/64

Standard model (Single unit)

Technical specifications

Equivalent HP				16HP	18HP	20HP
Model name			(MMY-) 50Hz	MAP1606FT8(J)P	MAP1806FT8(J)P	MAP2006FT8(J)P
			60Hz	MAP1606FT7(J)P	MAP1806FT7(J)P	MAP2006FT7(J)P
Outdoor unit type				Inverter		
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V		
Cooling (*1)	Nominal		(kW)	45.0	50.4	56.0
	Power consumption		(kW)	13.30	15.20	17.70
	EER (Energy Efficiency Ratio)			3.39	3.31	3.17
Heating (*1)	Nominal		(kW)	45.0	50.4	56.0
	Power consumption		(kW)	11.70	13.10	15.20
	COP (Coefficiency of Performance)			3.86	3.84	3.68
External dimensions (Height / Width / Depth)			(mm)	1,800/1,600/780	1,800/1,600/780	1,800/1,600/780
Total weight			(kg)	376	376	376
Compressor	Motor output		(kW)	5.8 x 2	6.5 x 2	7.6 x 2
Fan unit	Motor output		(kW)	2.0	2.0	2.0
	Air volume		(m^3/h)	17,300	17,300	17,900
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 28.6	ø 28.6	ø 28.6
		Discharge gas side	(mm)	ø22.2	ø 22.2	ø 22.2
		Liquid side	(mm)	ø19.1	ø 19.1	ø 19.1
		Balance pipe	(mm)	ø 9.5	ø 9.5	ø 9.5
Sound pressure level (Cooling/Heating)			(dB(A))	61/62	61/62	61/62

Standard model (Combination)

Technical specifications

Equivalent HP				22HP		24HP		26HP	
Model name			(MMY-) 50Hz	AP2216FT8(J)P		AP2416FT8(J)P		AP2616FT8(J)P	
			60Hz	AP2216FT7(J)P		AP2416FT7(J)P		AP2616FT7(J)P	
Outdoor unit model			(MMY-) 50Hz	MAP1206FT8(J)P	MAP1006FT8(J)P	MAP1406FT8(J)P	MAP1006FT8(J)P	MAP1406FT8(J)P	MAP1206FT8(J)P
			60Hz	MAP1206FT7(J)P	MAP1006FT7(J)P	MAP1406FT7(J)P	MAP1006FT7(J)P	MAP1406FT7(J)P	MAP1206FT7(J)P
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Cooling (*1)	Nominal		(kW)	61.5		68.0		73.5	
	Power consumption		(kW)	17.0		19.8		21.5	
	EER (Energy Efficiency Ratio)			3.62		3.43		3.42	
Heating (*1)	Nominal		(kW)	61.5		68.0		73.5	
	Power consumption		(kW)	15.0		16.8		18.4	
	COP (Coefficiency of Performance)			4.09		4.05		4.01	
Total weight			(kg)	315	262	315	262	315	315
Compressor	Motor output		(kW)	3.9 x 2	3.1 x 2	4.8 x 2	3.1 x 2	4.8 x 2	3.9 x 2
Fan unit	Motor output		(kW)	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume		(m^3/h)	12,200	9,700	12,200	9,700	12,200	12,200
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 34.9		ø 34.9		ø 34.9	
		Discharge gas side	(mm)	ø 28.6		ø 28.6		ø 28.6	
		Liquid side	(mm)	ø 19.1		ø 19.1		ø 22.2	
		Balance pipe	(mm)	ø 9.5		ø 9.5		ø 9.5	
Sound pressure level (Cooling/Heating)			(dB(A))	63/65		64/66		64.5/66.5	

Standard model (Combination)

Technical specifications

Equivalent HP				28HP		30HP		32HP	
Model name			(MMY-) 50Hz	AP2816FT8(J)P		AP3016FT8(J)P		AP3216FT8(J)P	
			60Hz	AP2816FT7(J)P		AP3016FT7(J)P		AP3216FT7(J)P	
Outdoor unit model			(MMY-) 50Hz	MAP1406FT8(J)P	MAP1406FT8(J)P	MAP1606FT8(J)P	MAP1406FT8(J)P	MAP1806FT8(J)P	MAP1406FT8(J)P
			60Hz	MAP1406FT7(J)P	MAP1406FT7(J)P	MAP1606FT7(J)P	MAP1406FT7(J)P	MAP1806FT7(J)P	MAP1406FT7(J)P
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Cooling (*1)	Nominal		(kW)	80.0		85.0		90.4	
	Power consumption		(kW)	24.3		25.4		27.4	
	EER (Energy Efficiency Ratio)			3.29		3.34		3.30	
Heating (*1)	Nominal		(kW)	80.0		85.0		90.4	
	Power consumption		(kW)	20.1		21.7		23.2	
	COP (Coefficiency of Performance)			3.98		3.91		3.90	
Total weight			(kg)	315	315	376	315	376	315
Compressor	Motor output		(kW)	4.8 x 2	4.8 x 2	5.8 x 2	4.8 x 2	6.5 x 2	4.8 x 2
Fan unit	Motor output		(kW)	1.0	1.0	2.0	1.0	2.0	1.0
	Air volume		(m^3/h)	12,200	12,200	17,300	12,200	17,300	12,200
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 34.9		ø 34.9		ø 34.9	
		Discharge gas side	(mm)	ø 28.6		ø 28.6		ø 28.6	
		Liquid side	(mm)	ø 22.2		ø 22.2		ø 22.2	
		Balance pipe	(mm)	ø 9.5		ø 9.5		ø 9.5	
Sound pressure level (Cooling/Heating)			(dB(A))	65.5/67.5		65/66.5		65/66.5	

(*1) Rated conditions Cooling : Indoor 27 degC Dry Bulb/19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.
Heating : Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb/6 degC Wet Bulb.
Based on equivalent piping length of 7.5m and piping height difference of 0m.

Standard model (Combination)

Technical specifications

Equivalent HP				34HP		36HP		38HP	
Model name		(MMY-)	50Hz	AP3416FT8(J)P		AP3616FT8(J)P		AP3816FT8(J)P	
			60Hz	AP3416FT7(J)P		AP3616FT7(J)P		AP3816FT7(J)P	
Outdoor unit model		(MMY-)	50Hz	MAP1806FT8(J)P	MAP1606FT8(J)P	MAP1806FT8(J)P	MAP1806FT8(J)P	MAP2006FT8(J)P	MAP1806FT8(J)P
			60Hz	MAP1806FT7(J)P	MAP1606FT7(J)P	MAP1806FT7(J)P	MAP1806FT7(J)P	MAP2006FT7(J)P	MAP1806FT7(J)P
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Cooling (*1)	Nominal		(kW)	95.4		100.8		106.4	
	Power consumption		(kW)	28.5		30.4		32.9	
	EER (Energy Efficiency Ratio)			3.35		3.31		3.24	
Heating (*1)	Nominal		(kW)	95.4		100.8		106.4	
	Power consumption		(kW)	24.8		26.2		28.3	
	COP (Coefficiency of Performance)			3.85		3.84		3.75	
Total weight			(kg)	376	376	376	376	376	376
Compressor	Motor output		(kW)	6.5 x 2	5.8 x 2	6.5 x 2	6.5 x 2	7.6 x 2	6.5 x 2
Fan unit	Motor output		(kW)	2.0	2.0	2.0	2.0	2.0	2.0
	Air volume		(m^3/h)	17,300	17,300	17,300	17,300	17,900	17,300
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 34.9		ø 41.3		ø 41.3	
		Discharge gas side	(mm)	ø 28.6		ø 34.9		ø 34.9	
		Liquid side	(mm)	ø 22.2		ø 22.2		ø 22.2	
		Balance pipe	(mm)	ø 9.5		ø 9.5		ø 9.5	
Sound pressure level (Cooling/Heating)			(dB(A))	64.5/65.5		64.5/65.5		64.5/65.5	

Standard model (Combination)

Technical specifications

Equivalent HP				40HP			42HP			44HP		
Model name		(MMY-)	50Hz	AP4016FT8(J)P			AP4216FT8(J)P			AP4416FT8(J)P		
			60Hz	AP4016FT7(J)P			AP4216FT7(J)P			AP4416FT7(J)P		
Outdoor unit model		(MMY-)	50Hz	MAP2006FT8(J)P	MAP2006FT8(J)P		MAP1406FT8(J)P	MAP1406FT8(J)P	MAP1406FT8(J)P	MAP1606FT8(J)P	MAP1406FT8(J)P	MAP1406FT8(J)P
			60Hz	MAP2006FT7(J)P	MAP2006FT7(J)P		MAP1406FT7(J)P	MAP1406FT7(J)P	MAP1406FT7(J)P	MAP1606FT7(J)P	MAP1406FT7(J)P	MAP1406FT7(J)P
Outdoor unit type				Inverter								
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V								
Cooling (*1)	Nominal		(kW)	112.0			120.0			125.0		
	Power consumption		(kW)	35.4			36.5			37.6		
	EER (Energy Efficiency Ratio)			3.17			3.29			3.32		
Heating (*1)	Nominal		(kW)	112.0			120.0			125.0		
	Power consumption		(kW)	30.4			30.2			31.8		
	COP (Coefficiency of Performance)			3.68			3.98			3.93		
Total weight			(kg)	376	376		315	315	315	376	315	315
Compressor	Motor output		(kW)	7.6 x 2	7.6 x 2		4.8 x 2	4.8 x 2	4.8 x 2	5.8 x 2	4.8 x 2	4.8 x 2
Fan unit	Motor output		(kW)	2.0	2.0		1.0	1.0	1.0	2.0	1.0	1.0
	Air volume		(m^3/h)	17,900	17,900		12,200	12,200	12,200	17,300	12,200	12,200
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 41.3			ø 41.3			ø 41.3		
		Discharge gas side	(mm)	ø 34.9			ø 34.9			ø 34.9		
		Liquid side	(mm)	ø 22.2			ø 22.2			ø 22.2		
		Balance pipe	(mm)	ø 9.5			ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))	64.5/65.5			67/69			66.5/68.5		

Standard model (Combination)

Technical specifications

Equivalent HP				46HP			48HP			50HP		
Model name		(MMY-)	50Hz	AP4616FT8(J)P			AP4816FT8(J)P			AP5016FT8P-E		
			60Hz	AP4616FT7(J)P			AP4816FT7(J)P			AP5016FT7P-E		
Outdoor unit model		(MMY-)	50Hz	MAP1806FT8(J)P	MAP1406FT8(J)P	MAP1406FT8(J)P	MAP1806FT8(J)P	MAP1606FT8(J)P	MAP1406FT8(J)P	MAP1806FT8(J)P	MAP1806FT8(J)P	MAP1406FT8(J)P
			60Hz	MAP1806FT7(J)P	MAP1406FT7(J)P	MAP1406FT7(J)P	MAP1806FT7(J)P	MAP1606FT7(J)P	MAP1406FT7(J)P	MAP1806FT7(J)P	MAP1806FT7(J)P	MAP1406FT7(J)P
Outdoor unit type				Inverter								
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V								
Cooling (*1)	Nominal		(kW)	130.4			135.4			140.8		
	Power consumption		(kW)	39.6			40.6			42.6		
	EER (Energy Efficiency Ratio)			3.30			3.33			3.31		
Heating (*1)	Nominal		(kW)	130.4			135.4			140.8		
	Power consumption		(kW)	33.2			34.8			36.3		
	COP (Coefficiency of Performance)			3.93			3.89			3.88		
Total weight			(kg)	376	315	315	376	376	315	376	376	315
Compressor	Motor output		(kW)	6.5x 2	4.8 x 2	4.8 x 2	6.5 x 2	5.8 x 2	4.8 x 2	6.5 x 2	6.5 x 2	4.8 x 2
Fan unit	Motor output		(kW)	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0
	Air volume		(m^3/h)	17,300	12,200	12,200	17,300	17,300	12,200	17,300	17,300	12,200
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 41.3			ø 41.3			ø 41.3		
		Discharge gas side	(mm)	ø 34.9			ø 34.9			ø 34.9		
		Liquid side	(mm)	ø 22.2			ø 22.2			ø 22.2		
		Balance pipe	(mm)	ø 9.5			ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))	66.5/68.5			66.5/68			66.5/68		

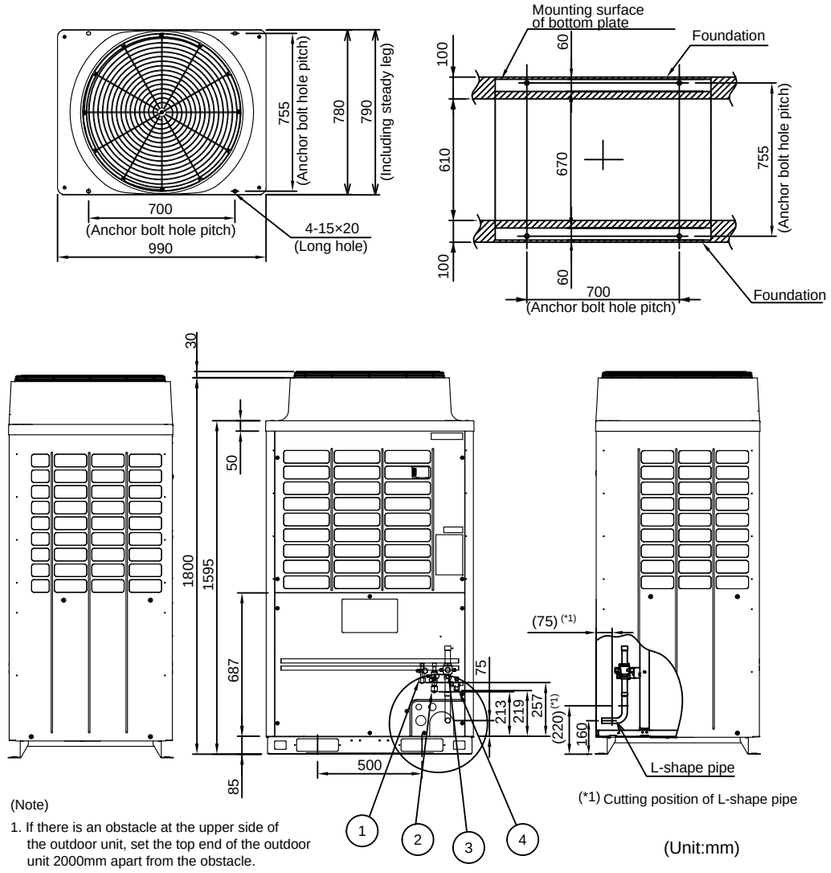
Standard model (Combination)

Technical specifications

Equivalent HP				52HP			54HP		
Model name		(MMY-)	50Hz	AP5216FT8(J)P			AP5416FT8(J)P		
			60Hz	AP5216FT7(J)P			AP5416FT7(J)P		
Outdoor unit model		(MMY-)	50Hz	MAP1806FT8(J)P	MAP1806FT8(J)P	MAP1606FT8(J)P	MAP1806FT8(J)P	MAP1806FT8(J)P	MAP1806FT8(J)P
			60Hz	MAP1806FT7(J)P	MAP1806FT7(J)P	MAP1606FT7(J)P	MAP1806FT7(J)P	MAP1806FT7(J)P	MAP1806FT7(J)P
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Cooling (*1)	Nominal		(kW)	145.8			151.2		
	Power consumption		(kW)	43.7			45.6		
	EER (Energy Efficiency Ratio)			3.34			3.31		
Heating (*1)	Nominal		(kW)	145.8			151.2		
	Power consumption		(kW)	37.9			39.4		
	COP (Coefficiency of Performance)			3.85			3.84		
Total weight			(kg)	376	376	376	376	376	376
Compressor	Motor output		(kW)	6.5 x 2	6.5 x 2	5.8 x 2	6.5 x 2	6.5 x 2	6.5 x 2
Fan unit	Motor output		(kW)	2.0	2.0	2.0	2.0	2.0	2.0
	Air volume		(m^3/h)	17,300	17,300	17,300	17,300	17,300	17,300
Refrigerant piping	Connecting port diameter	Suction gas side	(mm)	ø 41.3			ø 41.3		
		Discharge gas side	(mm)	ø 34.9			ø 34.9		
		Liquid side	(mm)	ø 22.2			ø 22.2		
		Balance pipe	(mm)	ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))	66/67			66/67		

(*1) Rated conditions Cooling : Indoor 27 degC Dry Bulb/19 degC Wet Bulb, Outdoor 35 degC Dry Bulb.
Heating : Indoor 20 degC Dry Bulb, Outdoor 7 degC Dry Bulb/6 degC Wet Bulb.
Based on equivalent piping length of 7.5m and piping height difference of 0m.

Model : MMY-MAP0806FT8(J)P, MMY-MAP1006FT8(J)P (50Hz)
MMY-MAP0806FT7(J)P, MMY-MAP1006FT7(J)P (60Hz)



(*1) Cutting position of L-shape pipe

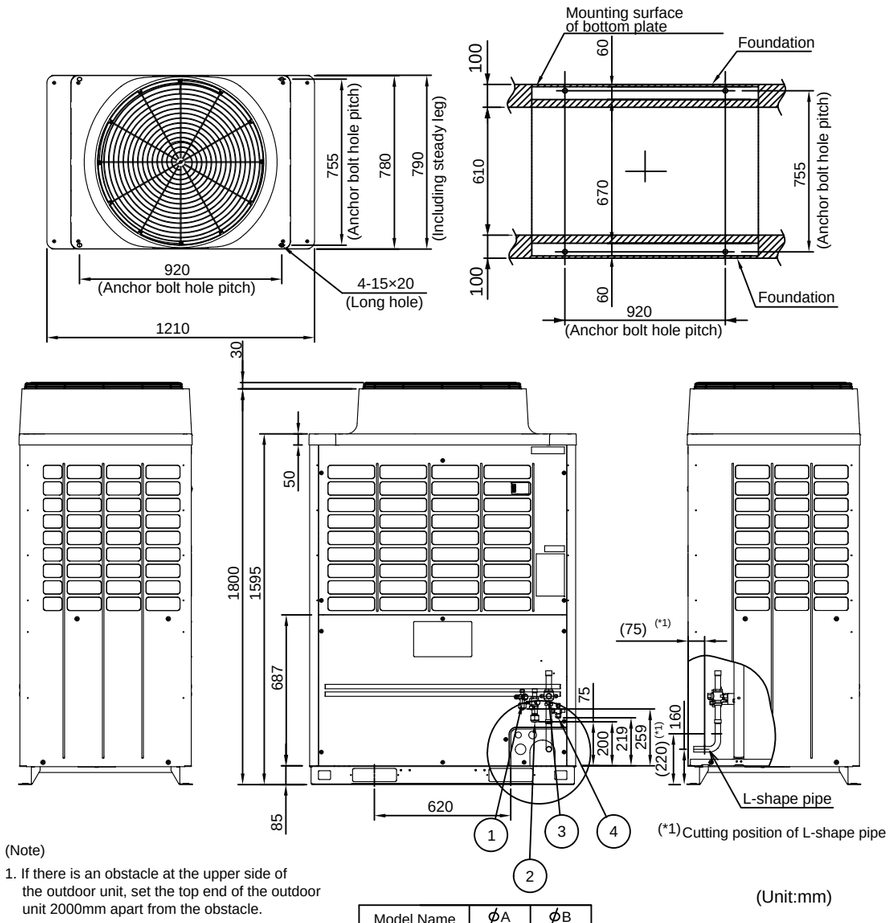
(Unit:mm)

(Note)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion heavy protection model is the same as that of standard model.

No	Parts name	Remarks
①	Liquid pipe connection port	ϕ12.7
②	Discharge gas pipe connection port	ϕ19.1
③	Suction gas pipe connection port	ϕ22.2
④	Balance pipe connection port	ϕ9.5

Model : MMY-MAP1206FT8(J)P, MMY-MAP1406FT8(J)P (50Hz)
MMY-MAP1206FT7(J)P, MMY-MAP1406FT7(J)P (60Hz)



(*1) Cutting position of L-shape pipe

(Unit:mm)

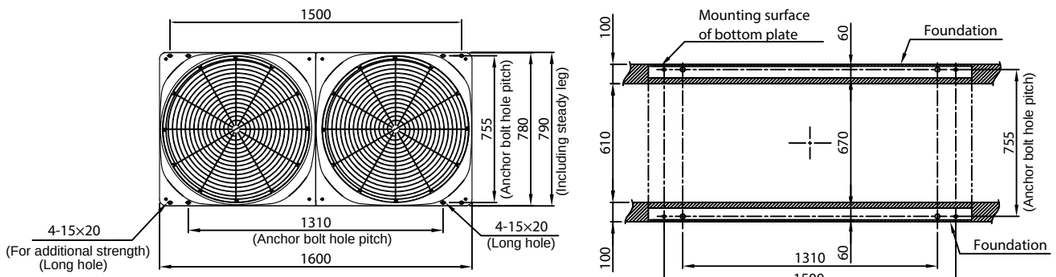
(Note)

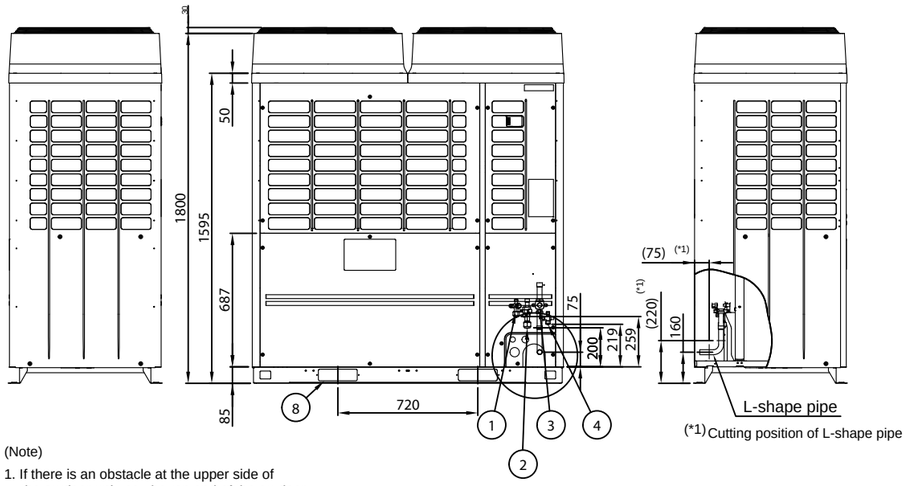
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion heavy protection model is the same as that of standard model.

Model Name	ϕA	ϕB
MAP1206 type	ϕ12.7	ϕ19.1
MAP1406 type	ϕ15.9	ϕ22.2

No	Parts name	Remarks
①	Liquid pipe connection port	ϕA
②	Discharge gas pipe connection port	ϕB
③	Suction gas pipe connection port	ϕ28.6
④	Balance pipe connection port	ϕ9.5

Model : MMY-MAP1606FT8(J)P, MMY-MAP1806FT8(J)P, MMY-MAP2006FT8(J)P (50Hz)
MMY-MAP1606FT7(J)P, MMY-MAP1806FT7(J)P, MMY-MAP2006FT7(J)P (60Hz)





(*1) Cutting position of L-shape pipe

(Unit:mm)

(Note)

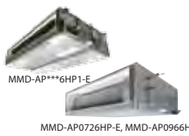
1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally,and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Dimensional drawing of corrosion heavy protection model is the same as that of standard model.

No	Parts name	Remarks
①	Liquid pipe connection port	ϕ19.1
②	Discharge gas pipe connection port	ϕ22.2
③	Suction gas pipe connection port	ϕ28.6
④	Balance pipe connection port	ϕ9.5





Cooling capacity (HP equivalent)	4-way air discharge cassette type	Compact 4-way cassette type	2-way air discharge cassette type	1-way air discharge cassette type	Slim duct type
007 type 2.2 kw (0.8HP)		MMU-AP0077MH-E	MMU-AP0072WH1	MMU-AP0074YH1-E	MMD-AP0074SPH1-E
009 type 2.8 kw (1HP)	MMU-AP0094HP1-E	MMU-AP0097MH-E	MMU-AP0092WH1	MMU-AP0094YH1-E	MMD-AP0094SPH1-E
012 type 3.6 kw (1.25HP)	MMU-AP0124HP1-E	MMU-AP0127MH-E	MMU-AP0122WH1	MMU-AP0124YH1-E	MMD-AP0124SPH1-E
015 type 4.5 kw (1.7HP)	MMU-AP0154HP1-E	MMU-AP0157MH-E	MMU-AP0152WH1	MMU-AP0154SH1-E	MMD-AP0154SPH1-E
018 type 5.6 kw (2HP)	MMU-AP0184HP1-E	MMU-AP0187MH-E	MMU-AP0182WH1	MMU-AP0184SH1-E	MMD-AP0184SPH1-E
024 type 7.1 kw (2.5HP)	MMU-AP0244HP1-E		MMU-AP0242WH1	MMU-AP0244SH1-E	MMD-AP0244SPH1-E
027 type 8.0 kw (3HP)	MMU-AP0274HP1-E		MMU-AP0272WH1		MMD-AP0274SPH1-E
030 type 9.0 kw (3.2HP)	MMU-AP0304HP1-E		MMU-AP0302WH1		
036 type 11.2 kw (4HP)	MMU-AP0364HP1-E		MMU-AP0362WH1		
048 type 14.0 kw (5HP)	MMU-AP0484HP1-E		MMU-AP0482WH1		
056 type 16.0 kw (6HP)	MMU-AP0564HP1-E		MMU-AP0562WH1		



MMD-AP***6HP1-E
MMD-AP0726HP-E, MMD-AP0966HP-E


Cooling capacity (HP equivalent)	Concealed duct	Concealed duct high static pressure type	Console	Floor standing cabinet type	Floor standing concealed type
007 type 2.2 kw (0.8HP)	MMD-AP0076BHP1-E		MML-AP0074NH1-E	MML-AP0074H1-E	MML-AP0074BH1-E
009 type 2.8 kw (1HP)	MMD-AP0096BHP1-E		MML-AP0094NH1-E	MML-AP0094H1-E	MML-AP0094BH1-E
012 type 3.6 kw (1.25HP)	MMD-AP0126BHP1-E		MML-AP0124NH1-E	MML-AP0124H1-E	MML-AP0124BH1-E
015 type 4.5 kw (1.7HP)	MMD-AP0156BHP1-E		MML-AP0154NH1-E	MML-AP0154H1-E	MML-AP0154BH1-E
018 type 5.6 kw (2HP)	MMD-AP0186BHP1-E	MMD-AP0186HP1-E	MML-AP0184NH1-E	MML-AP0184H1-E	MML-AP0184BH1-E
024 type 7.1 kw (2.5HP)	MMD-AP0246BHP1-E	MMD-AP0246HP1-E		MML-AP0244H1-E	MML-AP0244BH1-E
027 type 8.0 kw (3HP)	MMD-AP0276BHP1-E	MMD-AP0276HP1-E			
030 type 9.0 kw (3.2HP)	MMD-AP0306BHP1-E				
036 type 11.2 kw (4HP)	MMD-AP0366BHP1-E	MMD-AP0366HP1-E			
048 type 14.0 kw (5HP)	MMD-AP0486BHP1-E	MMD-AP0486HP1-E			
056 type 16.0 kw (6HP)	MMD-AP0566BHP1-E	MMD-AP0566HP1-E			
072 type 22.4 kw (8HP)		MMD-AP0726HP-E			
096 type 28.0 kw (10HP)		MMD-AP0966HP-E			




Cooling capacity (HP equivalent)	Floor standing type	High wall type 3 series	Ceiling type	Air-to air heat exchanger with DX-coil type
007 type 2.2 kw (0.8HP)		MMK-AP0073H1		
009 type 2.8 kw (1HP)		MMK-AP0093H1		MMD-VN502HEX1E
012 type 3.6 kw (1.25HP)		MMK-AP0123H1		
015 type 4.5 kw (1.7HP)	MMF-AP0156H1-E	MMK-AP0153H1	MMC-AP0158HP-E	MMD-VN802HEX1E
018 type 5.6 kw (2HP)	MMF-AP0186H1-E	MMK-AP0183H1	MMC-AP0188HP-E	MMD-VN1002HEX1E
024 type 7.1 kw (2.5HP)	MMF-AP0246H1-E	MMK-AP0243H1	MMC-AP0248HP-E	
027 type 8.0 kw (3HP)	MMF-AP0276H1-E		MMC-AP0278HP-E	
030 type 9.0 kw (3.2HP)				
036 type 11.2 kw (4HP)	MMF-AP0366H1-E		MMC-AP0368HP-E	
048 type 14.0 kw (5HP)	MMF-AP0486H1-E		MMC-AP0488HP-E	
056 type 16.0 kw (6HP)	MMF-AP0566H1-E		MMC-AP0568HP-E	

Air volume	Air-to-air heat exchanger*
150 m^3/h	VN-M150HE
250 m^3/h	VN-M250HE
350 m^3/h	VN-M350HE
500 m^3/h	VN-M500HE
650 m^3/h	VN-M650HE
800 m^3/h	VN-M800HE
1000 m^3/h	VN-M1000HE
1500 m^3/h	VN-M1500HE
2000 m^3/h	VN-M2000HE

*: Does not connect to refrigerant piping from outdoor unit.
Control wires can be connected.

4-way Air Discharge Cassette Type

MMU-AP***4HP1-E

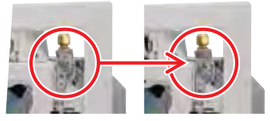
Individual louver control

The angles of each of the four louver can be set individually
=> Enables airflow to be adapted to user preferences.

Note: RBC-AMT32E, RBC-AMS41E only

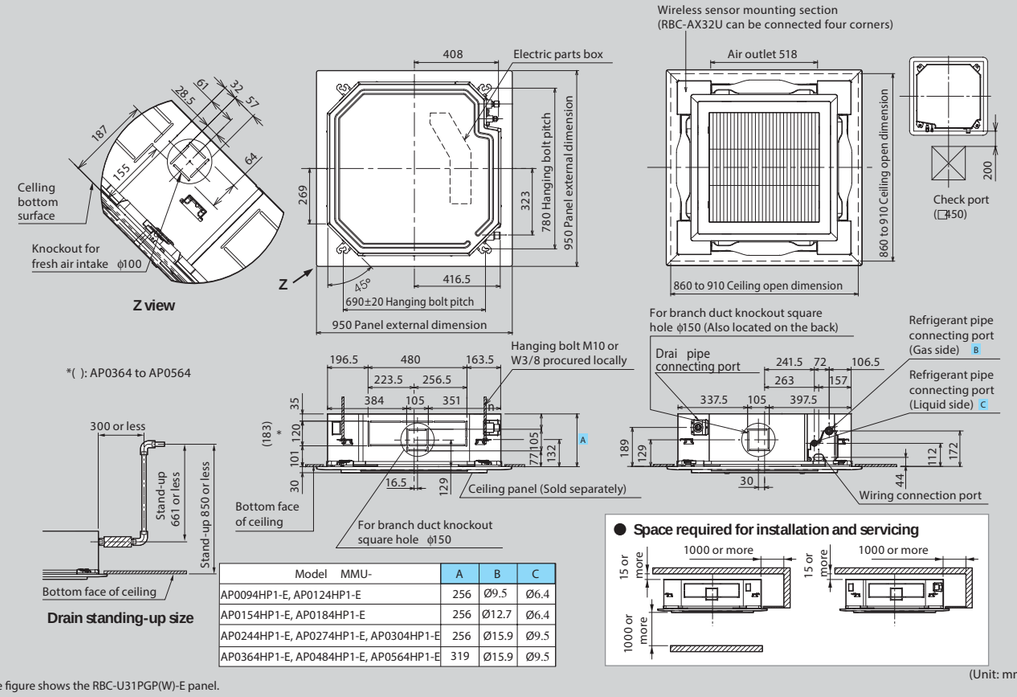
Easy installation

The panel is attached using the bolt already installed on the indoor unit.



RBC-U31PGP(W)-E

MMU-AP0094HP1-E to AP0564HP1-E



Model MMU-	A	B	C
AP0094HP1-E, AP0124HP1-E	256	Ø9.5	Ø6.4
AP0154HP1-E, AP0184HP1-E	256	Ø12.7	Ø6.4
AP0244HP1-E, AP0274HP1-E, AP0304HP1-E	256	Ø15.9	Ø9.5
AP0364HP1-E, AP0484HP1-E, AP0564HP1-E	319	Ø15.9	Ø9.5

*The figure shows the RBC-U31PGP(W)-E panel.

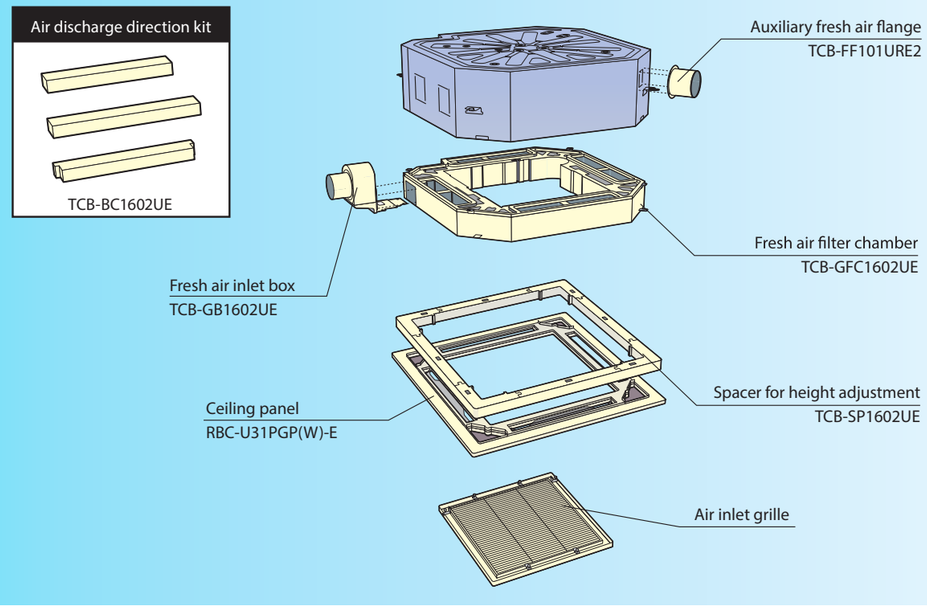
(Unit: mm)

Technical specifications

Model name	MMU-	AP0094HP1-E	AP0124HP1-E	AP0154HP1-E	AP0184HP1-E	AP0244HP1-E	AP0274HP1-E	AP0304HP1-E	AP0364HP1-E	AP0484HP1-E	AP0564HP1-E
Cooling/Heating capacity*1	(kW)	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)									
	Power consumption 50 Hz/60 Hz (kW)	0.021/0.021		0.023/0.023	0.026/0.026	0.036/0.036		0.043/0.043	0.088/0.088	0.112/0.112	0.112/0.112
Appearance (Ceiling panel)	Model	RBC-U31PGP(W)-E									
External dimensions: Main unit (Ceiling panel)*	Height (mm)	256 (30)*							319 (30)*		
	Width (mm)	840 (950)*									
	Depth (mm)	840 (950)*									
Total weight: Main unit (Ceiling panel)*	(kg)	18 (4)*		20 (4)*					25 (4)*		
Fan unit	Standard air flow (High/Mid/Low) (m^3/h)	800/730/680		930/830/790	1050/920/800	1290/920/800		1320/1110/850	1970/1430/1070	2130/1430/1130	2130/1520/1230
	Motor output (W)	14				20			68	72	
Connecting pipe	Gas side (mm)	ø9.5		ø12.7		ø15.9					
	Liquid side (mm)	ø6.4				ø9.5					
	Drain port (nominal dia.) (mm)	25 (Polyvinyl chloride tube)									
Sound pressure level*2 (High/Mid/Low)	(dB(A))	30/29/27		31/29/27	32/29/27	35/31/28		38/33/30	43/38/32	46/38/33	46/40/33
Sound power level (High/Mid/Low)	(dB(A))	45/44/42		46/44/42	47/44/42	50/46/43		53/48/45	58/53/47	61/53/48	61/55/48

* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Options



Compact 4-way Cassette Type

MMU-AP*7MH-E

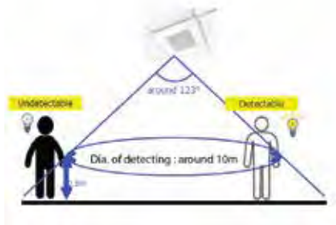
Good design with compact chassis

This compact unit (575 × 575 mm) fits with flat panel perfectly into ceilings and matches standard architectural modules, without the need to cut ceiling tiles. Furthermore the optional occupancy sensor also improve efficiency energy.

RBC-UM21PG(W)-E

Occupancy Sensor* *1

TCB-SIR41UM-E



Individual louver control*

The wind direction and swing operation can be set individually by each louver, with can be set into memory for future use.

*The function is available only RBC-AMS54E-ES/EN

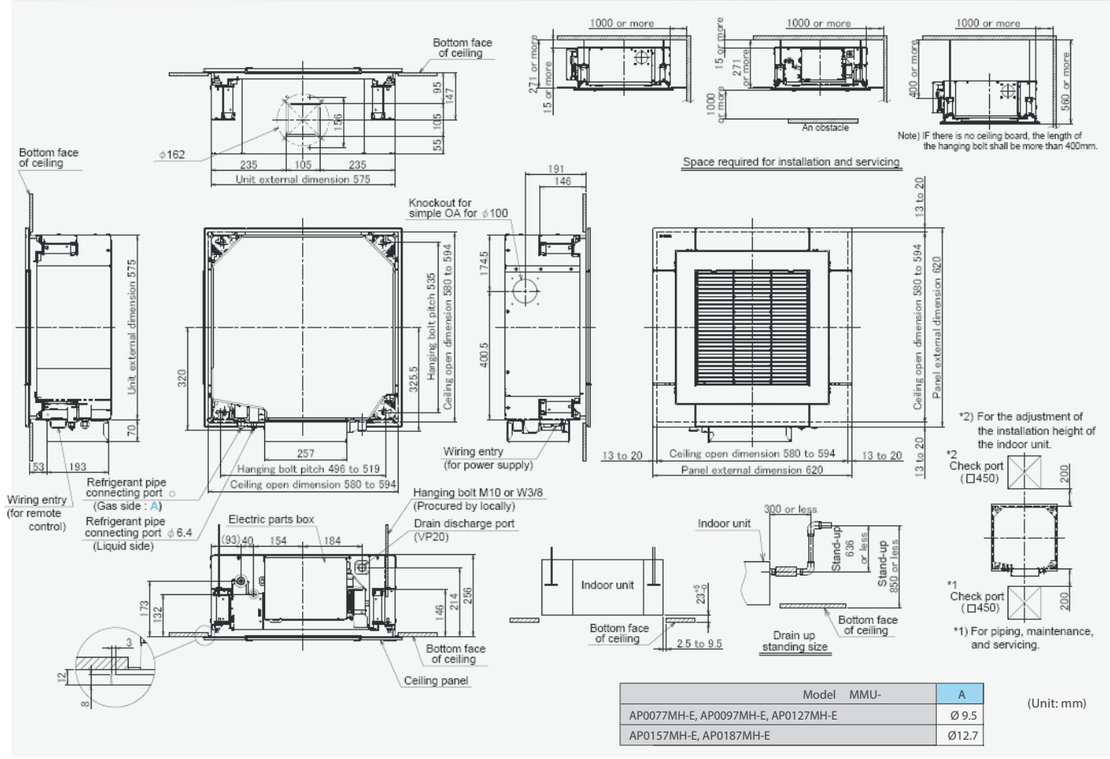
*1 Wireless remote controller kit and Occupancy sensor cannot be used on the same indoor unit.

Technical specifications

Model name		MMU-	AP0077MH-E	AP0097MH-E	AP0127MH-E	AP0157MH-E	AP0187MH-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)				
	Power consumption 50 Hz/60 Hz	(kW)	0.016/0.016	0.025/0.025	0.027/0.027	0.030/0.030	0.052/0.052
Appearance (Ceiling panel)		Model	RBC-UM21PG(W)-E				
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	256 (12)*				
	Width	(mm)	575 (620)*				
	Depth	(mm)	575 (620)*				
Total weight: Main unit (Ceiling panel)*		(kg)	17 (3)*				
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	552/462/378	570/468/378	594/504/402	660/552/468	840/642/522
	Motor output	(W)	60				
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7	
	Liquid side	(mm)	ø6.4				
	Drain port	(nominal dia.)	20 (Polyviny chloride tube)				
Sound pressure level*2	(High/Mid/Low)	(dB(A))	37/33/29	38/33/29	38/34/30	40/35/31	47/39/34
Sound power level	(High/Mid/Low)	(dB(A))	52/48/44	53/48/44	53/49/45	55/50/46	62/54/49

* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

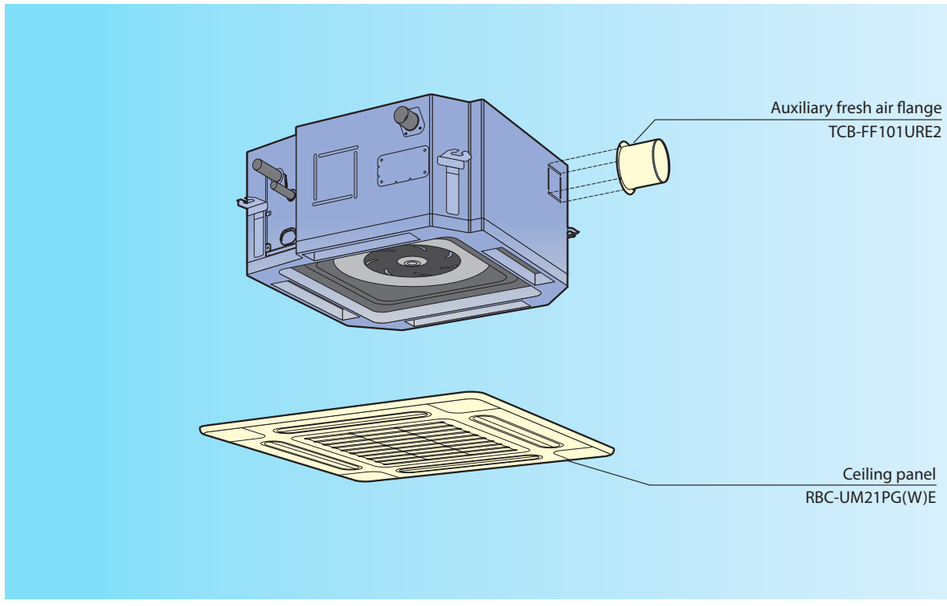
MMU-AP0077MH-E to AP0187MH-E



Model MMU-	A
AP0077MH-E, AP0097MH-E, AP0127MH-E	Ø 9.5
AP0157MH-E, AP0187MH-E	Ø12.7

(Unit: mm)

Options



2-way Air Discharge Cassette Type

MMU-AP*2WH1**

Slim and compact unit

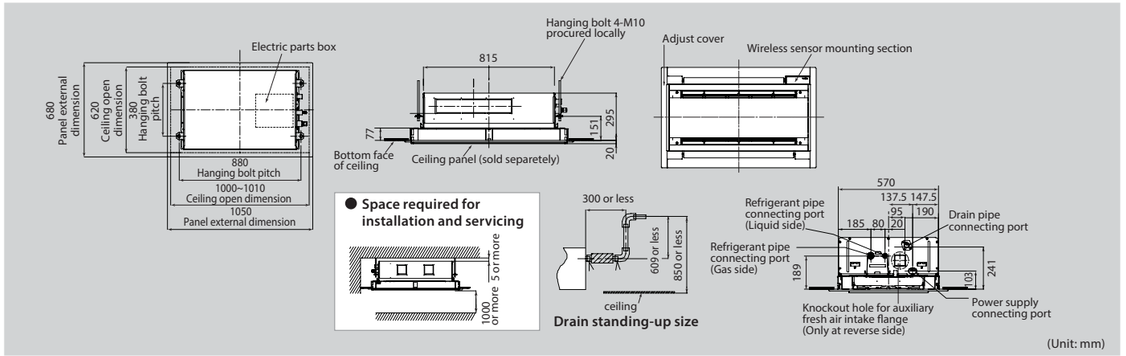
Unified the width of ceiling panel to 680mm.
Condensate drain pump included.
Available for ceilings up to 3.8m in height. (in case of 0.8HP to 3.2HP)
Easy installation and fine adjustment using the “Adjust-Cover” function.

Technical specifications

Model name		MMU-	AP0072WH1	AP0092WH1	AP0122WH1	AP0152WH1	AP0182WH1	AP0242WH1	AP0272WH1	AP0302WH1	AP0362WH1	AP0482WH1	AP0562WH1
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)										
	Power consumption 50 Hz/60 Hz	(kW)	0.029/0.029			0.030/0.030	0.044/0.044	0.054/0.054		0.064/0.064	0.076/0.076	0.088/0.088	0.117/0.117
Appearance (Ceiling panel)		Model	RBC-UW283PG(W)-E				RBC-UW803PG(W)-E				RBC-UW1403(W)PG-E		
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	295 (20)				345 (20)						
	Width	(mm)	815 (1050)				1180 (1415)				1600 (1835)		
	Depth	(mm)	570 (680)										
Total weight: Main unit (Ceiling panel)*		(kg)	19 (10)				26 (14)				36 (14)		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	558/498/450			600/534/450	900/750/618	1050/840/738		1260/900/780	1740/1434/1182	1800/1482/1230	2040/1578/1320
	Motor output	(W)	20				30	40		50	70		
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9					
	Liquid side	(mm)	ø6.4					ø9.5					
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)										
Sound pressure level*2		(High/Mid/Low) (dB(A))	34/32/30			35/33/30		38/35/33		40/37/34	42/39/36	43/40/37	46/42/39
Sound power level		(High/Mid/Low)(dB(A))	49/47/45			50/48/45		53/50/48		55/52/49	57/54/51	58/55/52	61/57/54

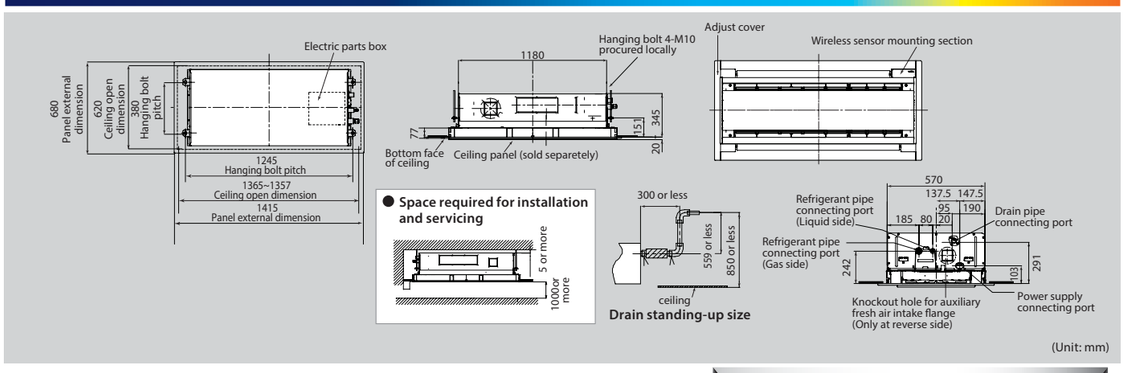
* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMU-AP0072WH1 to AP0152WH1



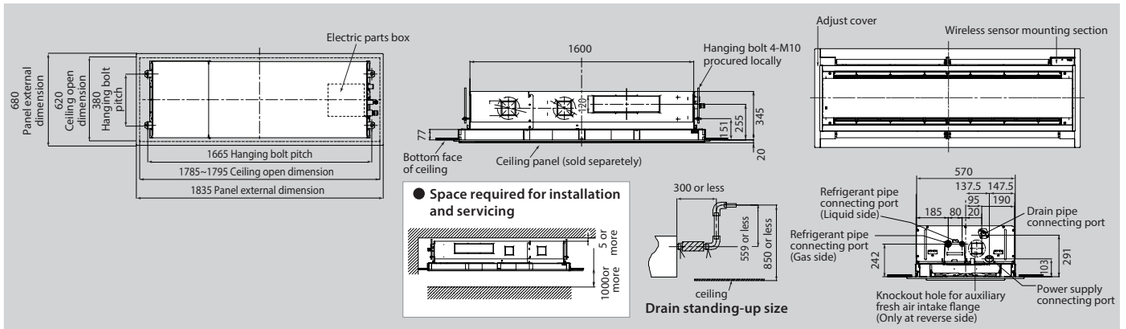
(Unit: mm)

MMU-AP0182WH1 to AP0302WH1



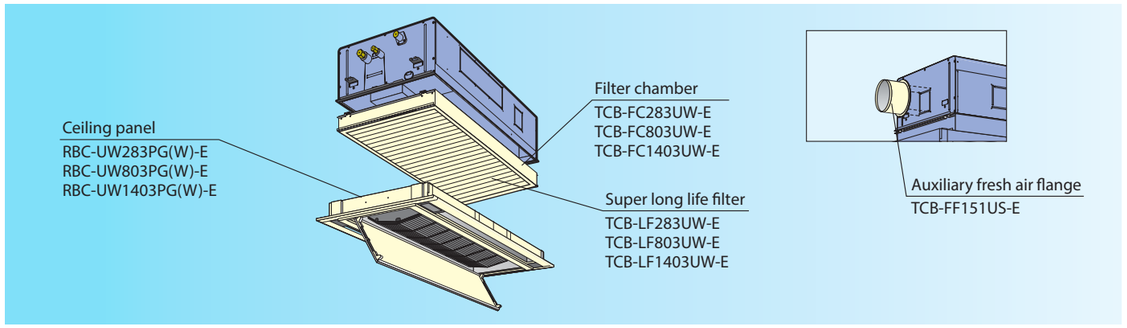
(Unit: mm)

MMU-AP0362WH1 to AP0562WH1



(Unit: mm)

Options



1-way Air Discharge Cassette Type

MMU-AP*4YH1-E**
MMU-AP*4SH1-E**

The perfect choice for hotels and reception areas

Silent sound design ensures the quiet required for the office.

Ideal for smaller rooms where one-way air distribution is required.

Able to blow air straight out.

Condensate drain pump included.

Long-life filters fitted as standard.

Fresh air intake is possible(MMU-AP***4SH1-E)

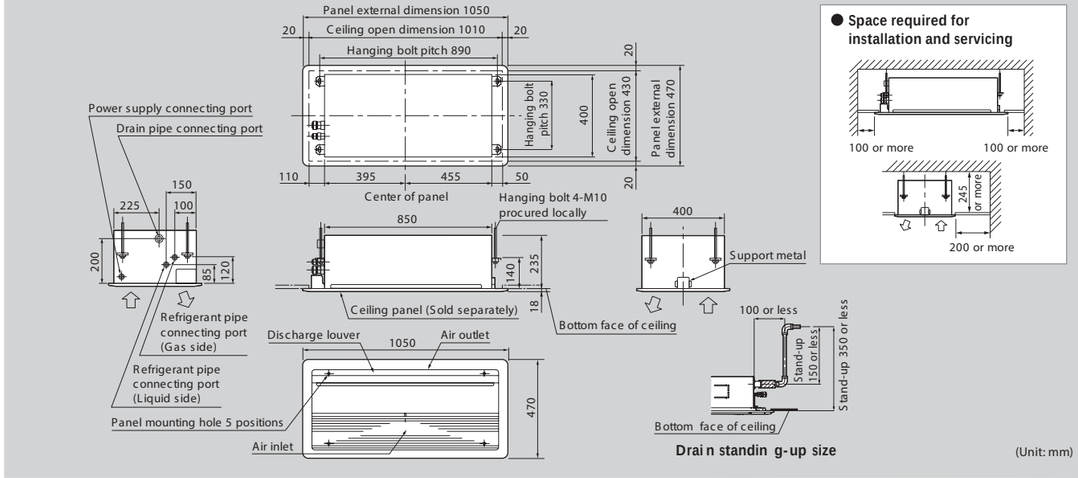
Preparations/connection possible with a circle duct flange.

Technical specifications

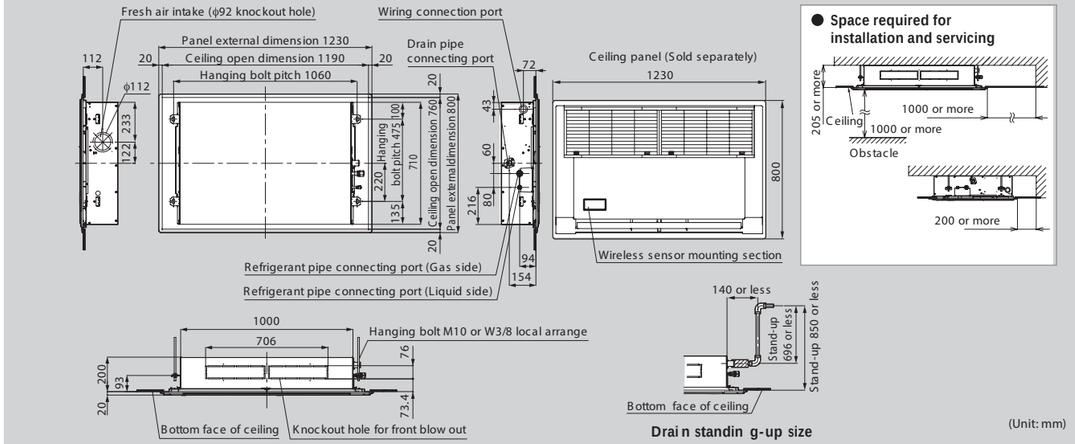
Model name		MMU-	AP0074YH1-E	AP0094YH1-E	AP0124YH1-E	AP0154SH1-E	AP0184SH1-E	AP0244SH1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)					
	Power consumption 50 Hz/60 Hz	(kW)	0.053/0.056			0.042/0.041	0.046/0.045	0.075/0.073
Appearance (Ceiling panel)		Model	RBC-UY136PG			RBC-US21PGE		
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	235 (18)*			200 (20)*		
	Width	(mm)	850 (1050)*			1000 (1230)*		
	Depth	(mm)	400 (470)*			710 (800)*		
Total weight: Main unit (Ceiling panel)*		(kg)	22 (3.5)*			21 (5.5)*		22 (5.5)*
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	540/480/420			750/690/630	780/720/660	1140/960/810
	Motor output	(W)	2			0		
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port (nominal dia.)		25 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	42/39/34			37/35/32	38/36/34	45/41/37
Sound power level (High/Mid/Low)		(dB(A))	57/54/49			57/54/51		58/56/52

* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMU-AP0074YH1-E to AP0124YH1-E

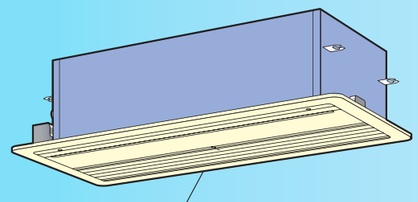


MMU-AP0154SH1-E to AP0244SH1-E



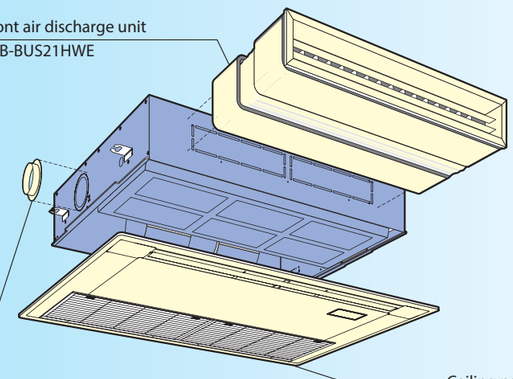
Options

AP0074YH1-E/AP0094YH1-E/AP0124YH1-E



Ceiling panel
RBC-UY136PG

Front air discharge unit
TCB-BUS21HWE



Auxiliary fresh air flange
TCB-FF101URE2

AP0154SH1-E/AP0184SH1-E/AP0244SH1-E

Ceiling panel
RBC-US21PGE

Slim Duct Type

MMD-AP*4SPH1-E**
MMD-AP*6SPH1-E**

Functional design

Only 210 mm in height for greater application flexibility.

4-step static pressure setup.

Concealed installation within a ceiling void.

Auxiliary fresh air intake available.

Slim & quiet

Perfect comfort throughout the room.

Can be used with any style of air diffuser.

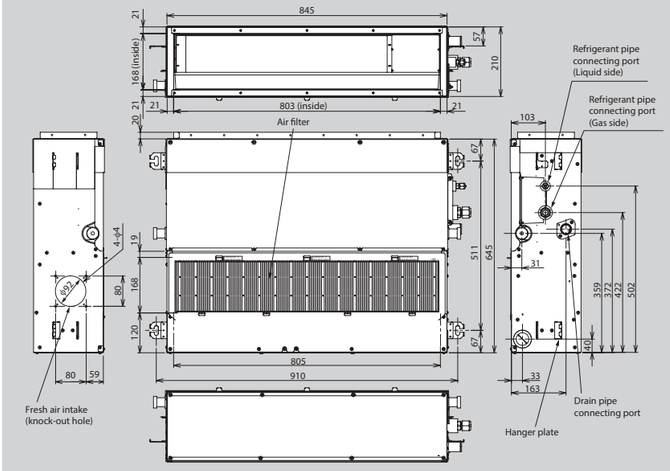
Quiet, powerful operation.

Technical specifications

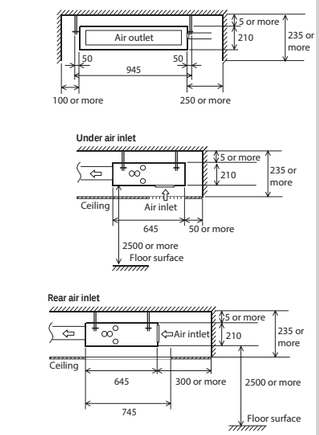
Model name		MMD-	AP0074SPH1-E	AP0094SPH1-E	AP0124SPH1-E	AP0154SPH1-E	AP0184SPH1-E	AP0244SPH1-E	AP0274SPH1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0
Electrical characteristics	Power supply		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)						
	Power consumption 50 Hz/60 Hz	(kW)	0.039/0.037		0.043/0.041	0.045/0.043	0.054/0.052	0.105/0.105	
External dimensions	Height	(mm)	210						
	Width	(mm)	845					1,140	
	Depth	(mm)	645						
Total weight		(kg)	22			23		29	
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	540/470/400	600/520/450		690/600/520	780/680/580	1,080/1,000/900	
	Motor output	(W)	60					20	
	External static pressure	(Pa)	6-16-31-46 (4 steps)	5-15-30-45 (4 steps)			4-14-29-44 (4 steps)	2-12-22-42 (4 steps)	
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9	
	Liquid side	(mm)	ø6.4					ø9.5	
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)						
Sound pressure level*2 (High/Med./Low)	Under air inlet	(dB(A))	36/33/30		38/35/32	39/36/33	40/38/36	49/47/44	
	Back air inlet	(dB(A))	28/26/24		29/27/25	32/30/28	33/31/29	38/36/33	
Sound power level (High/Med./Low)	Under air inlet	(dB(A))	51/48/45		53/50/47	54/51/48	55/53/51	64/62/59	
	Back air inlet	(dB(A))	43/41/39		44/42/40	47/45/43	48/46/44	53/51/48	

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

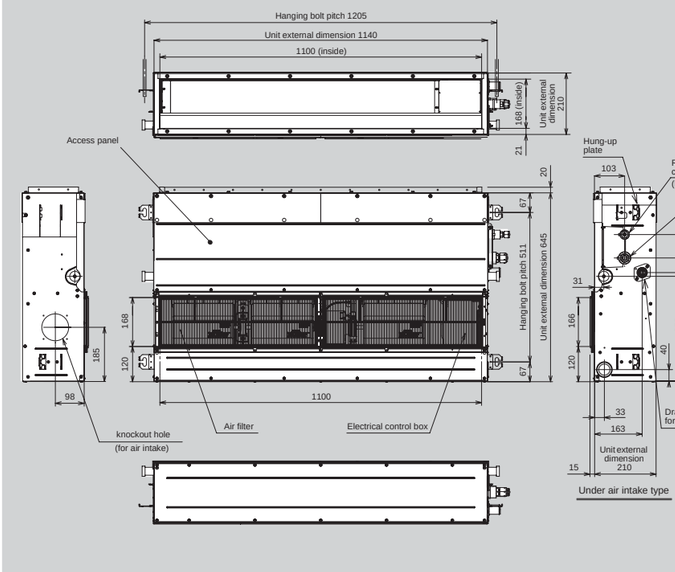
MMD-AP0074SPH1-E to AP0184SPH1-E



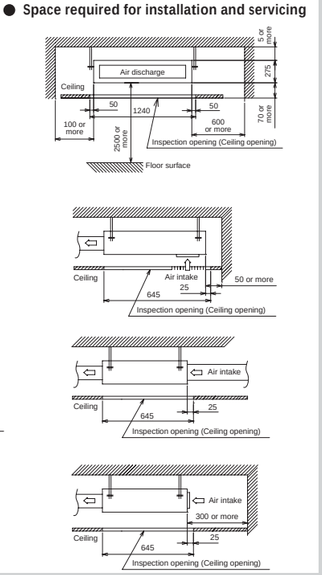
● Space required for installation and servicing



MMD-AP0244SPH1-E to AP0274SPH1-E

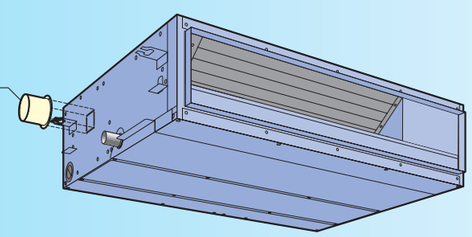


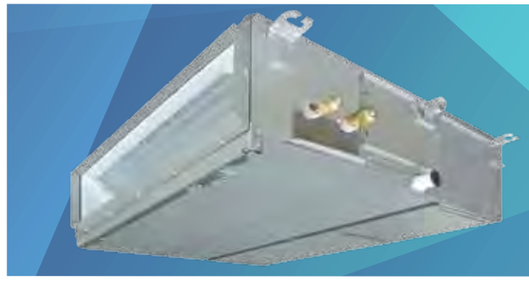
● Space required for installation and servicing



Options

Auxiliary fresh air flange
TCB-FF101URE2





Concealed Duct Type

MMD-AP***6BHP1-E

High static pressure

External static pressure can be raised as high as 120 Pa, so that all areas of the room can be reached for even temperature distribution, no matter how complex the layout.

High-lift drain pump

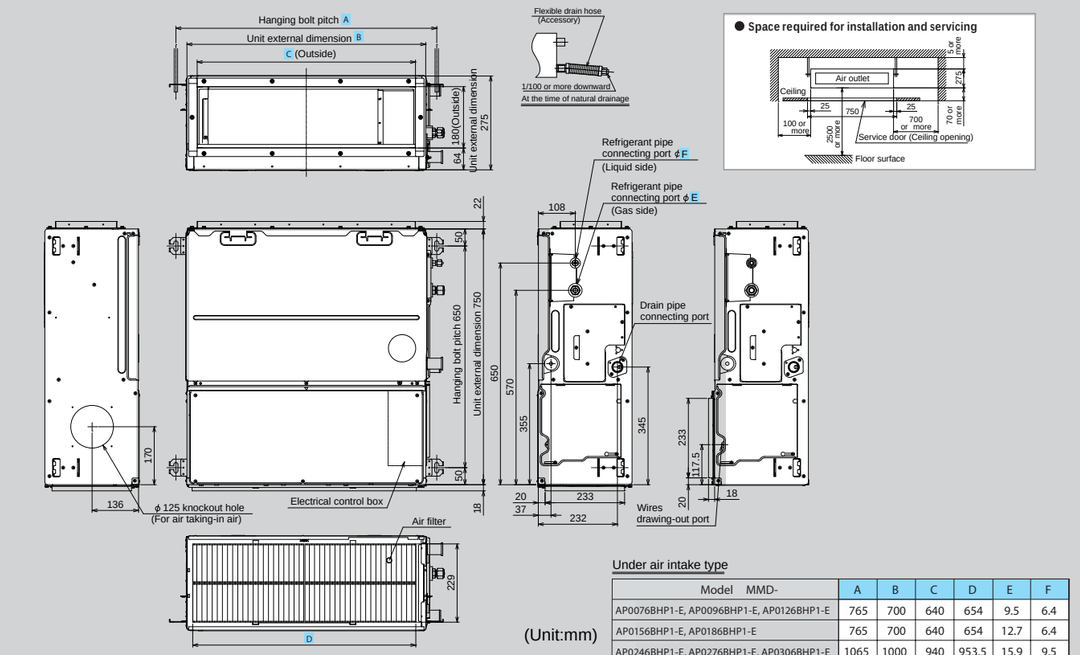
Built-in high-lift drain pump up to 850 mm.

Technical specifications

Model name	MMD-	AP0076BHP1-E	AP0096BHP1-E	AP0126BHP1-E	AP0156BHP1-E	AP0186BHP1-E	AP0246BHP1-E	AP0276BHP1-E	AP0306BHP1-E	AP0366BHP1-E	AP0486BHP1-E	AP0566BHP1-E
Cooling/Heating capacity*1	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)										
	Power consumption 50 Hz/60 Hz (kW)	0.038/0.038	0.043/0.043		0.062/ 0.062		0.077/0.077		0.094/ 0.094	0.172/ 0.172	0.198/0.198	
External dimension	Height (mm)	275										
	Width (mm)	700			700		1,000			1,400		
	Depth (mm)	750										
Total weight	(kg)	23					30			40		
Fan unit	Standard air flow (Mid/Low) (m^3/h)	540/ 450/360	570/ 480/390		798/ 660/540		1,200/990/870		1,260/ 1,110/930	1,920/ 1,620/1,380	2,100/ 1,740/1,500	
	Motor output (W)	150								250		
	External static pressure (factory setting) (Pa)	30					40			50		
	External static pressure (Pa)	30-40-50-65-80-100-120 (7 steps)										
Connecting pipe	Gas side (mm)	ø9.5			ø12.7		ø15.9					
	Liquid side (mm)	ø6.4					ø9.5					
	Drain port (nominal dia.)	25 (Polypropylene tube)										
Sound pressure level*2 (High/Mid/Low)	(dB(A))	29/26/23	30/26/23		33/29/25		36/31/27			40/36/33		
Sound power level (High/Mid/Low)	(dB(A))	44/41/38	45/41/38		48/44/40		51/46/42			55/51/48		

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMD-AP0076BHP1-E to AP0566BHP1-E



(Unit:mm)

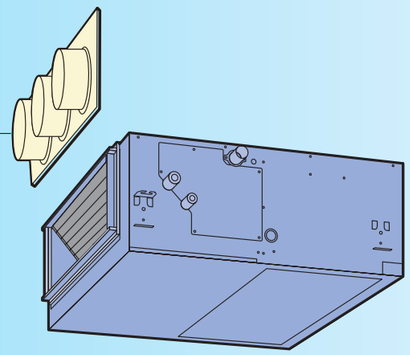
Under air intake type

Model MMD-	A	B	C	D	E	F
AP0076BHP1-E, AP0096BHP1-E, AP0126BHP1-E	765	700	640	654	9.5	6.4
AP0156BHP1-E, AP0186BHP1-E	765	700	640	654	12.7	6.4
AP0246BHP1-E, AP0276BHP1-E, AP0306BHP1-E	1065	1000	940	953.5	15.9	9.5
AP0366BHP1-E, AP0486BHP1-E, AP0566BHP1-E	1465	1400	1340	1349	15.9	9.5

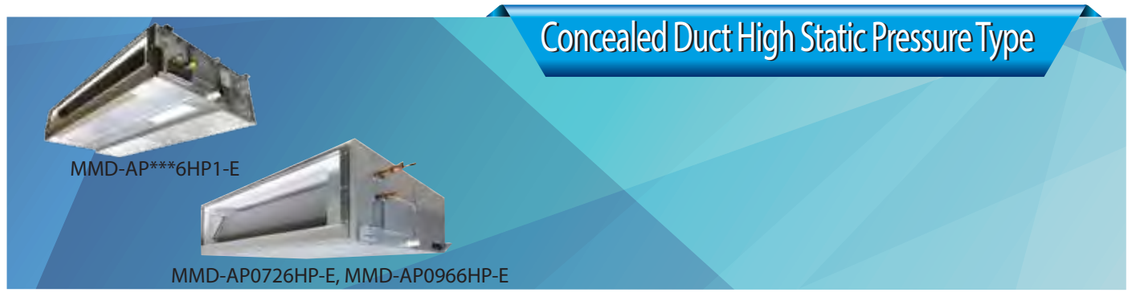
* Standard filter is provided, but deeper filtration filter needs to be purchased locally.

Options

Spigot shaped flange
TCB-SF56C6BPE
TCB-SF80C6BPE
TCB-SF160C6BPE



Concealed Duct High Static Pressure Type



Design flexibility

Satisfies all your design needs.
Compatible with external static pressures up to 250 Pa.

Can be equipped with the following options:
- Long life filter kit
- Drain pump kit

*Built-in Drain-pump : MMD-AP***6HP1-E model

Construction characteristics

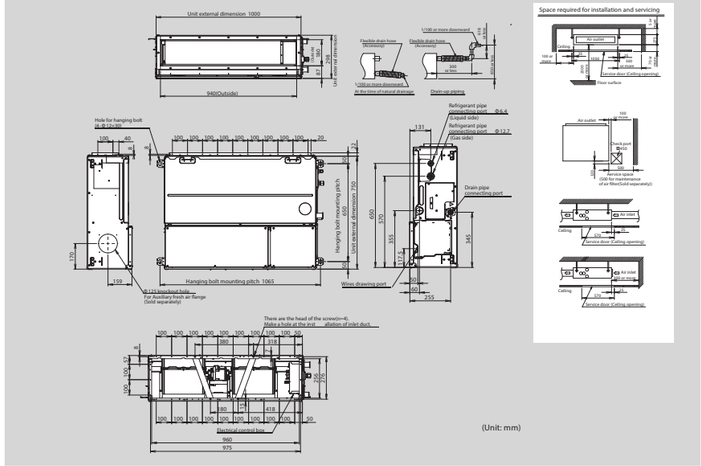
Three-stage-switchable static pressure.
The flexible duct is accessible.
Easy service and installation.
Inspection hole enables easy access and maintenance.

Technical specifications

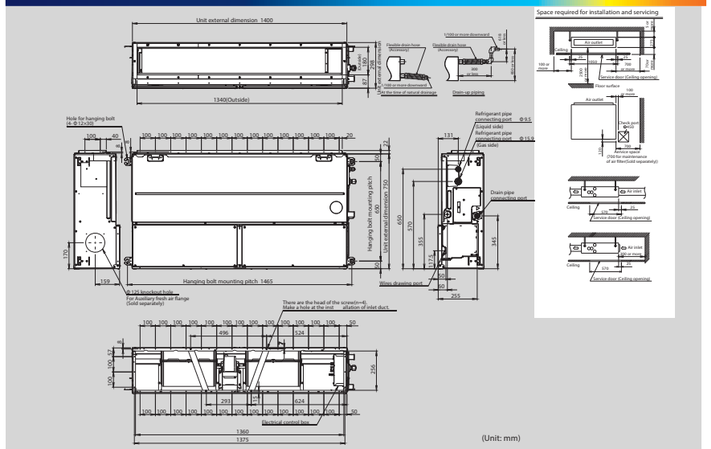
Model name		MMD-	AP0186HP1-E	AP0246HP1-E	AP0276HP1-E	AP0366HP1-E	AP0486HP1-E	AP0566HP1-E	AP0726HP-E	AP0966HP-E
Cooling/Heating capacity*1		(kW)	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0	22.4/25.0	28.0/31.5
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)							
	Power consumption 50 Hz/60 Hz	(kW)	0.085	0.115		0.198	0.230	0.290	0.540	0.790
External dimensions	Height	(mm)	298						448	
	Width	(mm)	1,000			1,400			1,400	
	Depth	(mm)	750						1,250	
Total weight		(kg)	34			43			97	
Fan unit	Standard air flow (Mid/Low)	(m^3/h)	800 (660/550)	1,200 (970/800)		1,920 (1,560/1,340)	2,100 (1,740/1,420)	2,400 (2,040/1,660)	3,800 (3,200/2,500)	4,800 (4,200/3,500)
	Motor output	(W)	250			350			250	
	External static pressure (factory setting)	(Pa)	100						150	
	External static pressure	(Pa)	50-75-125-150-175-200 (7steps)						50-83-117-150-183-217-250 (7steps)	
Connecting pipe	Gas side	(mm)	ø12.7	ø15.9					ø22.2	
	Liquid side	(mm)	ø6.4	ø9.5					ø12.7	
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)						25 (Polyvinyl chloride tube)	
Sound pressure level*2 (High/Mid/Low)		(dB(A))	37 (32/30)	38 (34/31)		41 (37/34)	42 (40/35)	45 (42/37)	44 (40/36)	45 (42/37)
Sound power level (High/Mid/Low)		(dB(A))	60 (54/50)	60 (55/51)		62 (57/53)	65 (62/54)	68 (64/56)	79 (75/71)	81 (77/73)

Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5m of main piping and 2.5 of branch piping connected with 0 meter height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

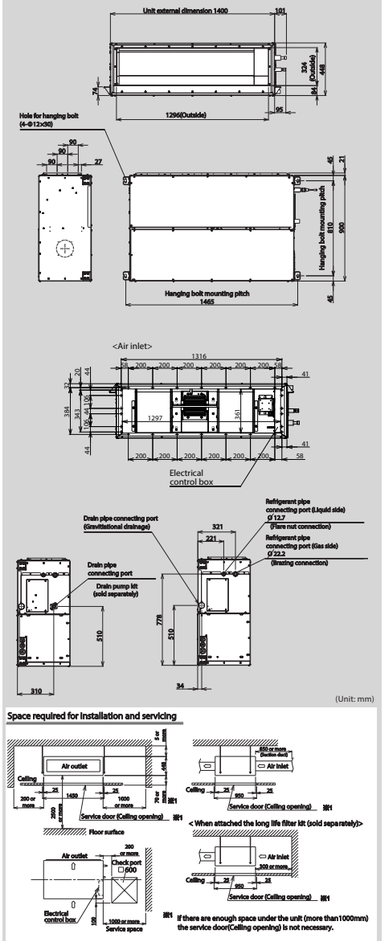
MMD-AP0186HP1-E to AP0276HP1-E



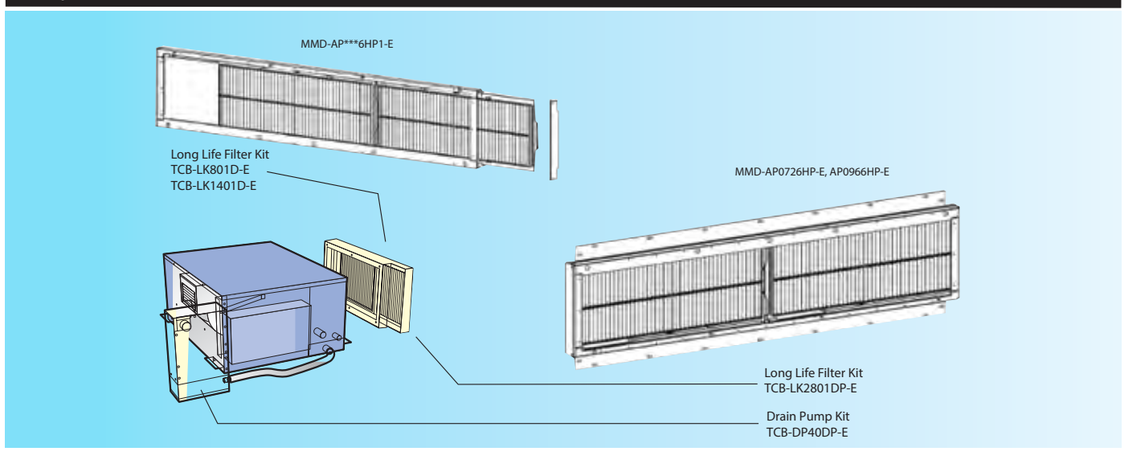
MMD-AP0366HP1-E to AP0566HP1-E



MMD-AP0726HP-E, AP0966HP-E



Options



Console Type

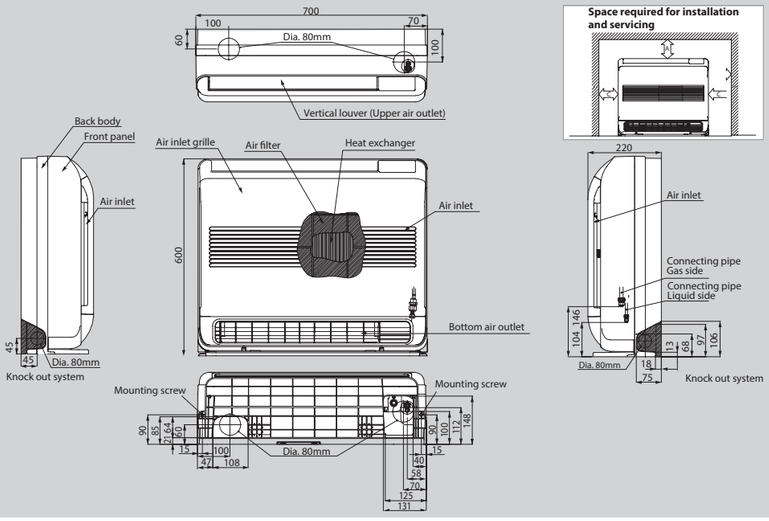
MML-AP*4NH1-E**

Features

Elegant & simple design makes this unit a perfect fit for shops, office buildings, and luxury apartments.
Bottom flow functionality ensures comfortable air bi-flow for an advantage in heating and floor warming.
Multi-function operation is convenient, making adjustments by the user possible using the wireless remote controller.

Remote controller

MML-AP0074NH1-E to AP0184NH1-E



(Unit: mm)

Technical specifications

Model name		MML-	AP0074NH1-E	AP0094NH1-E	AP0124NH1-E	AP0154NH1-E	AP0184NH1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)				
	Power consumption 50 Hz/60 Hz	(kW)	0.021		0.025	0.034	0.052
External dimensions	Height	(mm)	600				
	Width	(mm)	700				
	Depth	(mm)	220				
Total weight		(kg)	17				
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	510/366/282		552/408/324	624/468/384	726/528/426
	Motor output	(W)	41				
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7	
	Liquid side	(mm)	ø6.4				
	Drain port	(nominal dia.)	16 (Polyvinyl chloride tube)				
Sound pressure level*2 (High/Mid/Low)		(dB(A))	38/32/26		40/34/29	43/37/31	47/40/34
Sound power level (High/Low)		(dB(A))	53/41		55/44	58/46	62/55

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Floor Standing Cabinet Type

MML-AP*4H1-E**

Slim & compact design

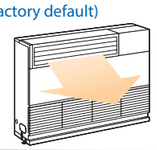
Under-window mounting does not block lighting.

Indoor unit size of 2.2 kW to 7.1 kW is the same.

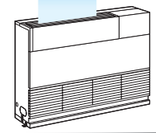
Slim & compact design

Distribution can be reversed to suit occupant preference.

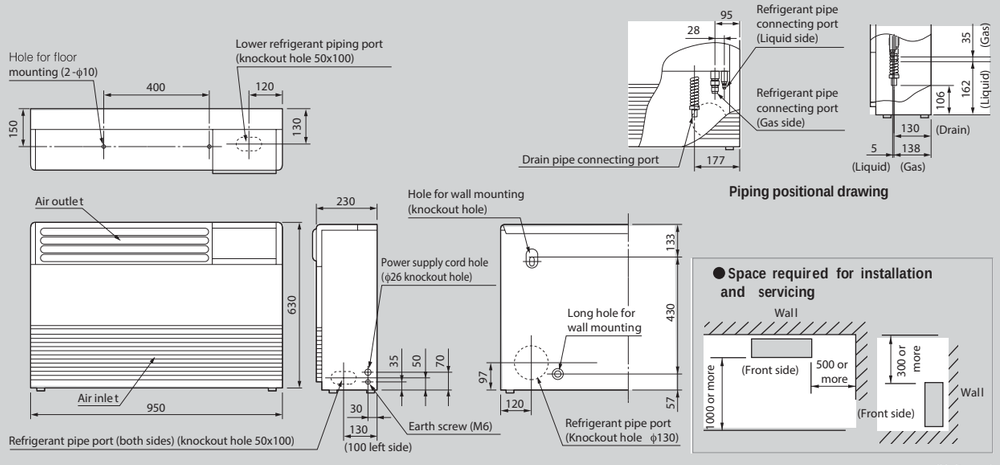
Air blown from front panel (factory default)



Air blown from top



MML-AP0074H1-E to AP0244H1-E



(Unit: mm)

Technical specifications

Model name		MML-	AP0074H1-E	AP0094H1-E	AP0124H1-E	AP0154H1-E	AP0184H1-E	AP0244H1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)					
	Power consumption 50 Hz/60 Hz	(kW)	0.056/0.053		0.092/0.092		0.102/0.113	
External dimensions	Height	(mm)	630					
	Width	(mm)	950					
	Depth	(mm)	230					
Total weight		(kg)	37				40	
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	480/420/360		900/780/650		1080/930/780	
	Motor output	(W)	45				70	
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port	(nominal dia.)	20 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	39/37/35		45/41/38		49/44/39	
Sound power level		(dB(A))	54/52/50		60/56/53		64/59/54	

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Floor Standing Concealed Type

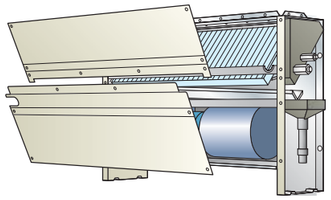
MML-AP*4BH1-E**

Cool air makes for a pleasant indoor environment

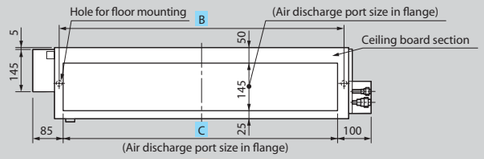
Install it under a window and air-condition any room effectively.

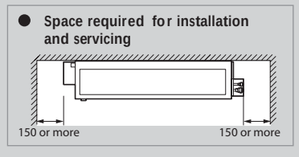
Easy maintenance

Simplified design of fan and drainage pipe eases maintenance.



MML-AP0074BH1-E to AP0244BH1-E





Model MML-	A	B	C	D	E
AP0074BH1-E to AP0124BH1-E	610	580	550	4	5
AP0154BH1-E to AP0244BH1-E	910	880	850	7	8

(Unit: mm)

Technical specifications

Model name		MML-	AP0074BH1-E	AP0094BH1-E	AP0124BH1-E	AP0154BH1-E	AP0184BH1-E	AP0244BH1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)					
	Power consumption 50 Hz/60 Hz	(kW)	0.056/0.058			0.090/0.096		0.095/0.110
External dimensions	Height	(mm)	600					
	Width	(mm)	745			1045		
	Depth	(mm)	220					
Total weight		(kg)	21			29		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	460/400/300			740/600/490		950/790/640
	Motor output	(W)	19			70		
Connecting pipe	Gas side	(mm)	ø9.5			ø12.5		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port	(nominal dia.)	20 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	36/34/32					42/37/33
Sound power level (High/Mid/Low)		(dB(A))	54/52/50					60/55/51

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Floor Standing Type

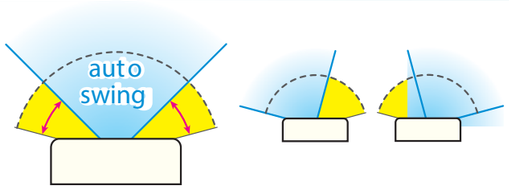
MMF-AP*6H1-E**

Thin profile suits interior design

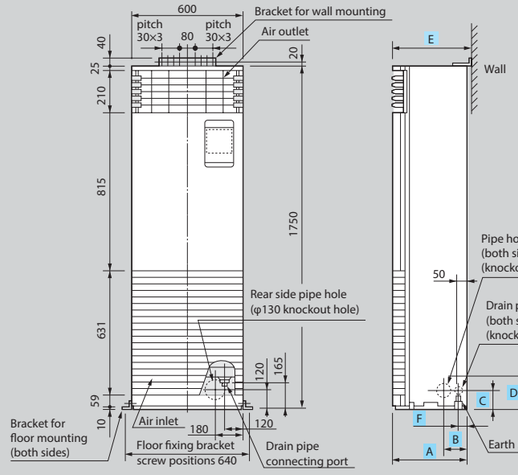
Slender, space-saving type (1.7–8.0HP)

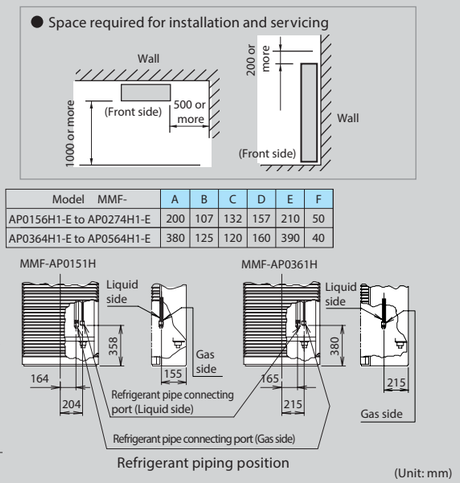
Wide outlet

Corner location is also possible, with right and left auto swing.
Set the vertical angle manually.



MMF-AP0156H1-E to AP0566H1-E





Model MMF-	A	B	C	D	E	F
AP0156H1-E to AP0274H1-E	200	107	132	157	210	50
AP0364H1-E to AP0564H1-E	380	125	120	160	390	40

Refrigerant piping position

(Unit: mm)

Technical specifications

Model name		MMF-	AP0156H1-E	AP0186H1-E	AP0246H1-E	AP0276H1-E	AP0366H1-E	AP0486H1-E	AP0566H1-E
Cooling/Heating capacity*1		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)						
	Power consumption 50 Hz/60 Hz	(kW)	0.055		0.089		0.135	0.160	
External dimensions	Height	(mm)	1750						
	Width	(mm)	600						
	Depth	(mm)	210				390		
Total weight		(kg)	46		47		62		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	900/780/660		1200/990/840		1920/1620/1380	2160/1730/1560	
	Motor output	(W	62		62		109	109	
Connecting pipe	Gas side	(mm)	ø12.7			ø12.7			
	Liquid side	(mm)	ø6.4			ø9.5			
	Drain port	(nominal dia.)	20 (one side of male screw)						
Sound pressure level*2 (High/Mid/Low)		(dB(A))	46/42/37		49/45/39		51/46/41	54/49/44	
Sound power level (High/Mid/Low)		(dB(A))	64/60/55		67/63/57		69/64/59	72/67/62	

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

High-wall Type (3 series)

MMK-AP*3H1

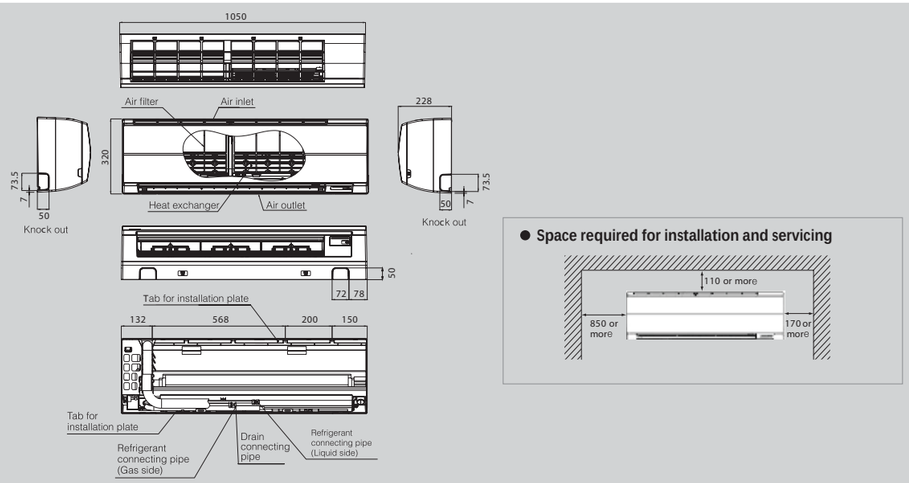
Elegant and slim

This classic high-wall is elegant and slim;
it can easily blend in with any room interior.

Total comfort is granted, thanks also to the 70° directional auto-swing louver that provides uniform air distribution.

Remote controller

MMK-AP0073H1 to AP0243H1

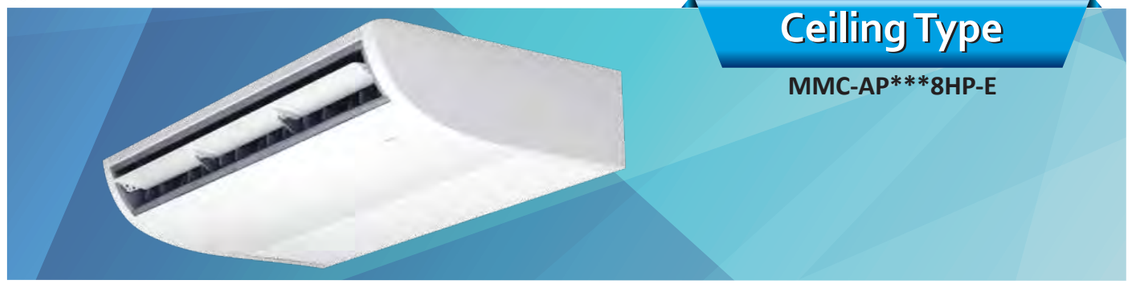


(Unit: mm)

Technical specifications

Model name		MMK-	AP0073H1	AP0093H1	AP0123H1	AP0153H1	AP0183H1	AP0243H1
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)					
	Power consumption 50 Hz	(kW)	0.018	0.021		0.043		0.050
External dimensions	Height	(mm)	320					
	Width	(mm)	1050					
	Depth	(mm)	228					
Total weight		(kg)	15					
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	570/450/390	600/480/390		840/660/540		1020/750/570
	Motor output	(W)	30					
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port	(nominal dia.)	16 (polyvinyl chloride tube)					
Sound pressure level*2	(High/Mid/Low)	(dB(A))	35/31/28	37/32/28		41/36/33		46/39/34
Sound power level	(High/Mid/Low)	(dB(A))	50/46/43	52/47/43		56/51/48		61/54/49

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB



Ceiling Type

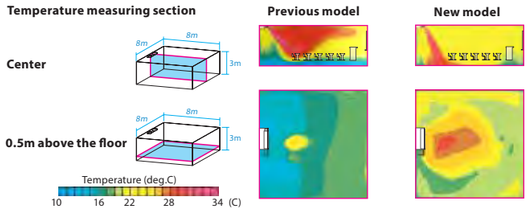
MMC-AP*8HP-E

Smooth curve for pliant Shape

All-new chassis and new rounded design,
This new models have been developed in response to customers' needs for ceiling units that better match their room interiors.

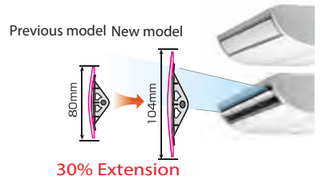
Smooth curve for pliant Shape

New fan has adopted the turbulence prevention rib to optimize the ventilating way.
Air volume has increased and noise level also has decreased compared with previous model. Winds of new ceiling type of 4HP to 6HP can be reached up to 4.3 metre.



New Designed Wide Flap

The new air oulet has realized both High noise reduction and large air volume.



Flap control

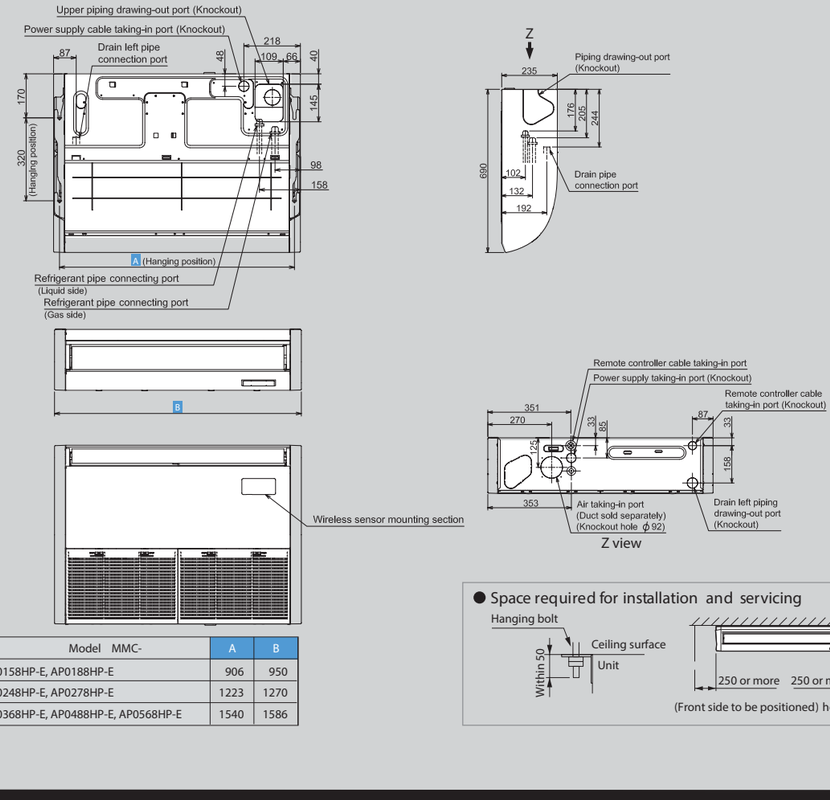
The airflow angle is automatically set to the most suitable setting according to your cooling or heating needs, and an automatic swing mode enables airflow to reach all areas of the room to create a comfortable ambience.

Technical specifications

Model name		MMC-	AP0158HP-E	AP0188HP-E	AP0248HP-E	AP0278HP-E	AP0368HP-E	AP0488HP-E	AP0568HP-E
Cooling/Heating capacity*1		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)						
	Power consumption 50 Hz/60 Hz	(kW)	0.033/0.033	0.034/0.034	0.067/0.067		0.083/0.083		0.111/0.111
External dimensions	Height	(mm)	235						
	Width	(mm)	950		1,270		1,586		
	Depth	(mm)	690						
Total weight		(kg)	24		30		39		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	840 /690/540	960 /720/540	1440 /1020/750		1860 /1350/1020	1860 /1530/1200	2040 /1650/1260
	Motor	(W)	94		94		139		
Connecting pipe	Gas side	(mm)	ø12.7		ø15.9				
	Liquid side	(mm)	ø6.4		ø9.5				
	Drain port (nominal dia.)		20 (Polyvinyl chloride tube)						
Sound pressure level*2 (High/Mid/Low)		(dB(A))	36/34/28	37/35/28	41/36/29		44/38/32	44/41/35	46/42/36

Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

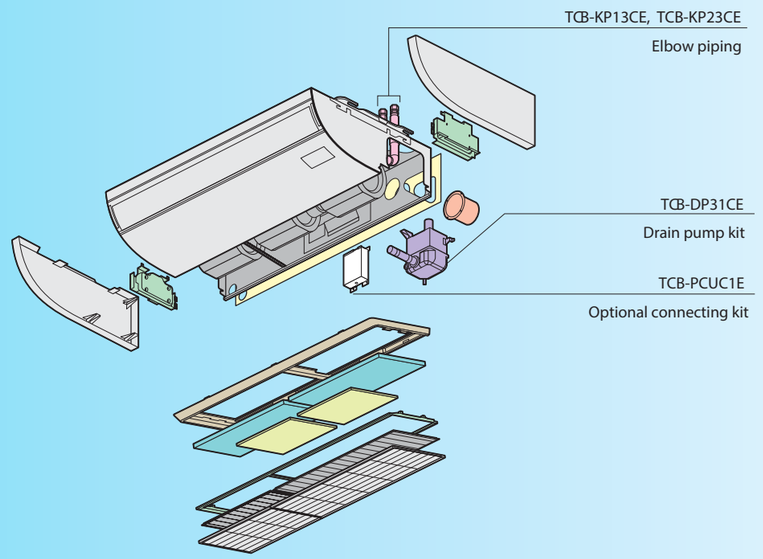
MMC-AP0158HP-E to AP0568HP-E



Model MMC-	A	B
AP0158HP-E, AP0188HP-E	906	950
AP0248HP-E, AP0278HP-E	1223	1270
AP0368HP-E, AP0488HP-E, AP0568HP-E	1540	1586

● Space required for installation and servicing

Options



Air to Air Heat Exchanger with DX-coil

MMD-VN*HEX1E**

Greater comfort and reduced load

Functionality built into the cooling system reduces load on cooling beyond that of the heat exchanger itself. This improves air quality and ensures maximum comfort throughout room being cooled.

Free cooling at night

When the air outdoors is cooler at night, the system expels warm air from the room. This reduces the air conditioning load the next day for improved energy efficiency.

Flexible control

Supply and exhaust fan speed ratios can be changed for improved air volume control that best matches the needs of the environment and location.

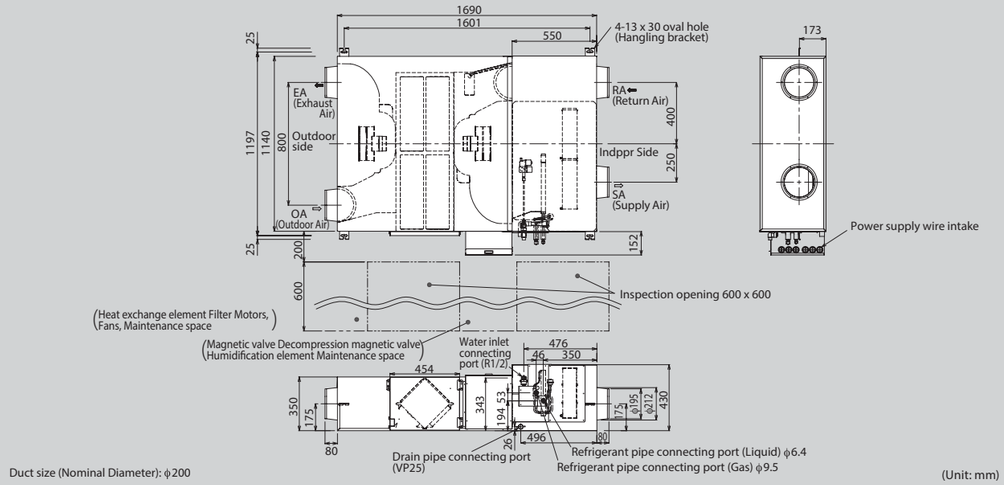
Remote controller
NRC-01HE

Technical specifications

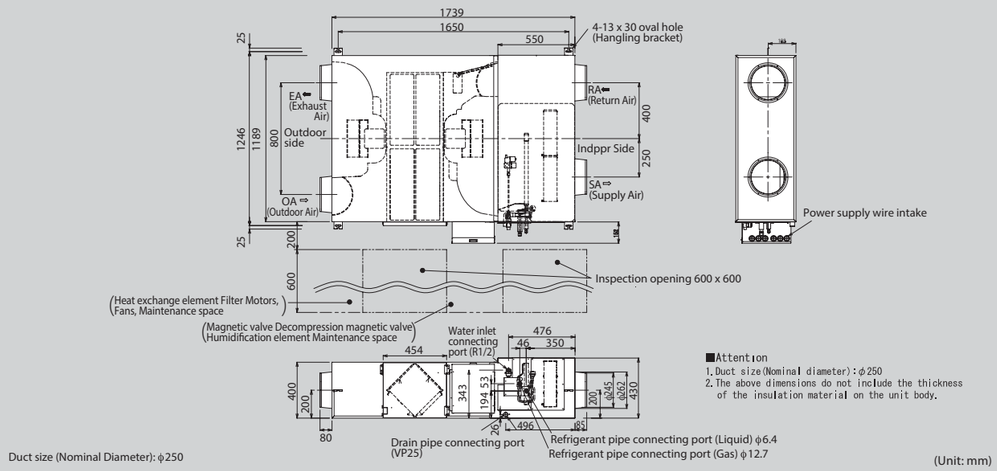
Model name				MMD-	VN502HEX1E	VN802HEX1E	VN1002HEX1E
Fresh air conditioning load	Cooling (*1)			(kW)	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)
	Heating (*1)			(kW)	5.53 (2.33)	8.61 (3.61)	10.92(4.32)
Power supply					1-phase 50Hz 230V (220–240V) (Separate power supply for indoor units required.)		
Temperature exchange efficiency 50Hz / 60Hz	High			(%)	70.5/70.5	70.0/70.0	65.5
	Mid			(%)	70.5/70.5	70.0/70.0	65.5
	Low			(%)	71.5/72.0	72.5/73.0	67.5
Enthalpy exchange efficiency 50Hz / 60Hz	Cooling		High	(%)	56.5/56.5	56.0/56.0	52.0
			Mid	(%)	56.5/56.5	56.0/56.0	52.0
			Low	(%)	57.5/58.0	59.0/59.5	54.5
	Heating		High	(%)	68.5/68.5	70.0/70.0	66.0
			Mid	(%)	68.5/68.5	70.0/70.0	66.0
			Low	(%)	69.0/69.0	73.0/73.5	68.5
Fan unit 50Hz / 60Hz	Standard air flow		High	(m^3/h)	500/500	800/800	950
			Mid	(m^3/h)	500/500	800/800	950
			Low	(m^3/h)	440/410	640/600	820
	External static pressure		High	(Pa)	120/200	120/190	135
			Mid	(Pa)	105/170	100/155	120
			Low	(Pa)	115/150	105/130	105
Sound pressure 50Hz / 60Hz	High			(dB)	37.5/40.0	41.0/43.0	43.0
	Mid			(dB)	36.5/38.0	40.0/42.0	42.0
	Low			(dB)	34.5/36.5	38.0/37.0	40.0
External Dimensions	Height			(mm)	430		
	Width			(mm)	1140	1189	
	Depth			(mm)	1690	1739	
Total weight				(kg)	84	100	101
Connecting piping	Gas side			(mm)	ø9.5	ø12.7	
	Liquid side			(mm)	ø6.4		
Drain port				(Nominal dia .mm)	25(Polyvinyl chloride tube)		

(*1) Cooling and heating capacities are based on the following conditions:
Cooling capacities are based on : indoor temperature :27 °CDB/19°CWB, Outdoor temperature : 35°CDB
Heating capacities are based on : indoor temperature :20 °CDB, Outdoor temperature : 7 °CDB/6°CWB
Fan is based on High and Middle
( ): The figures in ( ) indicate the heat reclaimed from the heat recovery ventilator.

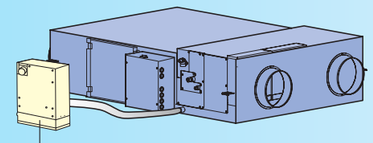
MMD-VN502HEX1E



MMD-VN802HEX1E to VN1002HEX1E



Options



Drain pump kit
TCB-DP31HEXE

Air to Air Heat Exchanger (Stand alone unit)

VN-M***HE

Greater comfort and reduced load

Easily integrated into air conditioning systems of 150m³/h to 2000m³/h air volume, the air-to-air heat exchangers use exhaust air to pre-condition the incoming air, thus reducing the cooling or heating load and the overall size of the required system.

Flexible control

Supply and exhaust fan speed ratios can be changed for improved air volume control that best matches the needs of the environment and location.

Free cooling at night

When the air outdoors is cooler at night, the system expels warm air from the room. This reduces the air conditioning load the next day for improved energy efficiency.

Easy maintenance

The heat exchange element can be washed in water.

Remote controller
NRC-01HE

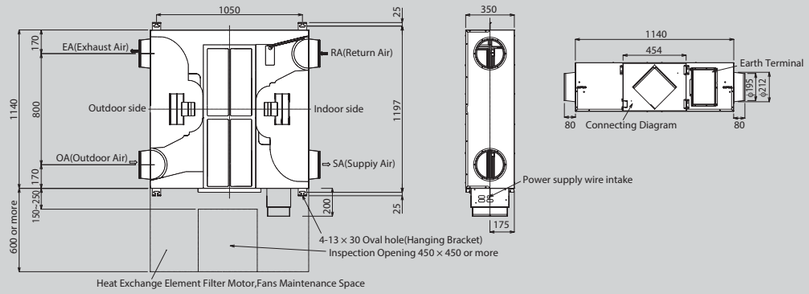
*** Does not connect to refrigerant piping from outdoor unit. Control wires can be connected.**

Technical specifications

Model name			VN-	M150HE	M250HE	M350HE	M500HE	M650HE	M800HE	M1000HE	M1500HE	M2000HE
Power supply (V)	Fan speed			1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)								
Power consumption 50Hz/60Hz (W)	(Extra high)			68-78/76	123-138/131	165-182/209	214-238/260	262-290/307	360-383/446	532-569/622	751-786/928	1084-1154/1294
	High			59-67/65	99-111/105	135-145/162	176-192/206	240-258/283	339-353/408	494-538/589	708-784/830	1032-1080/1220
	Low			42-47/45	52-59/54	82-88/94	128-142/144	178-191/206	286-300/333	353-370/411	570-607/660	702-742/818
Air volume (m³/h)	(Extra high)			150/150	250/250	350/350	500/500	650/650	800/800	1000/1000	1500/1500	2000/2000
	High			150/150	250/250	350/350	500/500	650/650	800/800	1000/1000	1500/1500	2000/2000
	Low			110/110	155/155	210/210	390/390	520/520	700/700	755/755	1200/1200	1400/1400
External static pressure (Pa)	(Extra high)			82-102/99	80-98/97	114-125/167	134-150/181	91-107/134	142-158/171	130-150/185	135-156/165	124-143/165
	High			52-78/59	34-65/38	56-83/33	69-99/63	58-82/68	102-132/102	97-122/120	103-129/108	92-116/102
	Low			47-64/46	28-40/22	65-94/39	62-92/44	61-96/52	76-112/58	84-127/55	112-142/109	110-143/87
Sound pressure level (dB(A))	(Extra high)			26-28/27.5	29.5-30/31.5	34-35/35.5	32.5-34/33.5	34-36/35.5	37-38.5/38	39.5-40.5/41.5	38-39/39.5	41-42.5/42.5
	High			24-25.5/24.5	25-27/25	30-32/29.5	29.5-31/29	33-34/34	35.5-37/35	38.5-40/39	36.5-37.5/36.5	39.5-41/40
	Low			20-22/20	21-22/21	27-29/23.5	26-29/24.5	31-32.5/29.5	33.5-35/32.5	34-35.5/33.5	36-37.5/35.5	37-38/36.5
Temperature exchange efficiency (%)	(Extra high)			81.5/81.5	78/78	74.5/74.5	76.5/76.5	75/75	76.5/76.5	73.5/73.5	76.5/76.5	73.5/73.5
	High			81.5/81.5	78/78	74.5/74.5	76.5/76.5	75/75	76.5/76.5	73.5/73.5	76.5/76.5	73.5/73.5
	Low			83/83	81.5/81.5	79.5/79.5	78/78	76.5/76.5	77.5/77.5	77/77	79/79	77.5/77.5
Enthalpy exchange efficiency (%)	for heating	(Extra high)		74.5/74.5	70/70	65/65	72/72	69.5/69.5	71/71	68.5/68.5	71/71	68.5/68.5
		High		74.5/74.5	70/70	65/65	72/72	69.5/69.5	71/71	68.5/68.5	71/71	68.5/68.5
		Low		76/76	74/74	71.5/71.5	73.5/73.5	71.5/71.5			73.5/73.5	72/72
	for cooling	(Extra high)		69.5/69.5	65/65	60.5/60.5	64.5/64.5	61.5/61.5	64/64	60.5/60.5	64 /64	60.5/60.5
		High		69.5/69.5	65/65	60.5/60.5	64.5/64.5	61.5/61.5	64/64	60.5/60.5	64/64	60.5/60.5
		Low		71/71	69/69	67/67	66.5/66.5	64/64	65.5/65.5	64.5/64.5	67/67	65.5/65.5
Dimensions (Length x Width x Height) (mm)				900 x 900 x 290			1140 x 1140 x 350		1189 x 1189 x 400		1189 x 1189 x 810	
Weight (kg)				36		38	53		70		143	
Duct diameter (mm)				100	150		200		250		inside: 250, outside: 283 x 730	
Operating range	Around unit			-10°C – 40°C 80% RH or less								
	Outdoor Air (OA)			-15°C (*1) – 43°C RH								
	Return Air (RA)			5°C – 40°C 0% RH or less								

* Air volume can be changed over to high (extra high) mode or low mode.
* Sound pressure level is measured 1.5m below the center of the unit.
*Sound pressure level is the value which was measured at the acoustic room.
*The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.
* Sound pressure level is less than 70 dBA

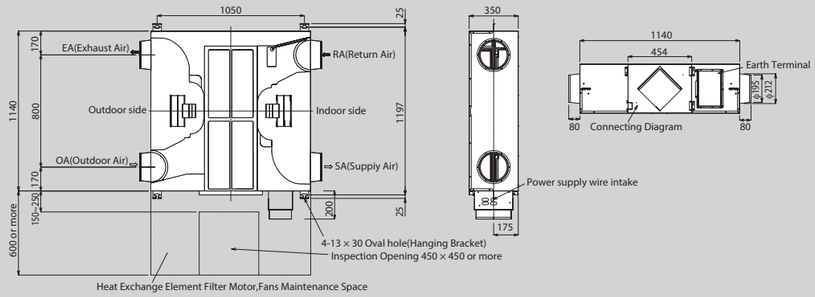
VN-M150HE to VN-M350HE



Duct size (Nominal Diameter): ϕ200

(Unit: mm)

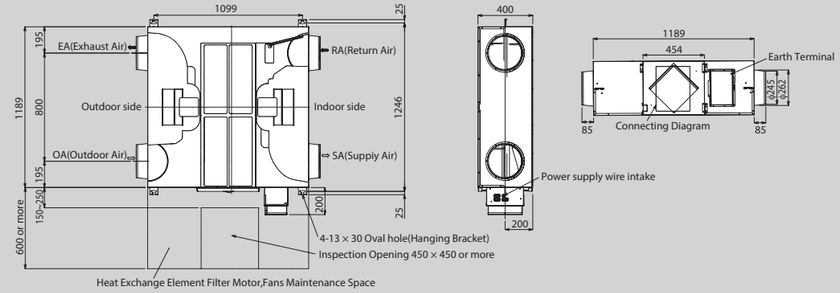
VN-M500HE, VN-M650HE



Duct size (Nominal Diameter): ϕ200

(Unit: mm)

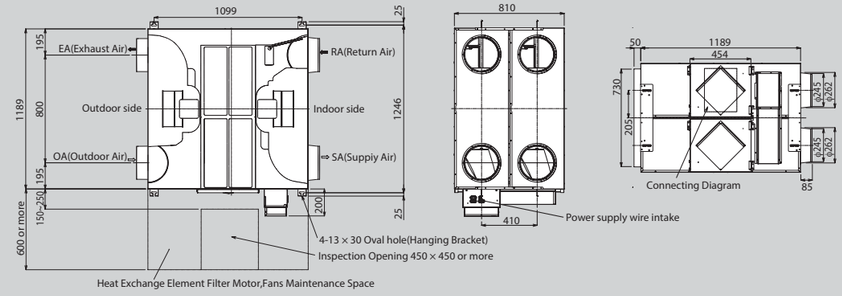
VN-M800HE, VN-M1000HE



Duct size (Nominal Diameter): ϕ250

(Unit: mm)

VN-M1500HE, VN-M2000HE



Duct size (Nominal Diameter): ϕ250

(Unit: mm)

Indoor unit accessories

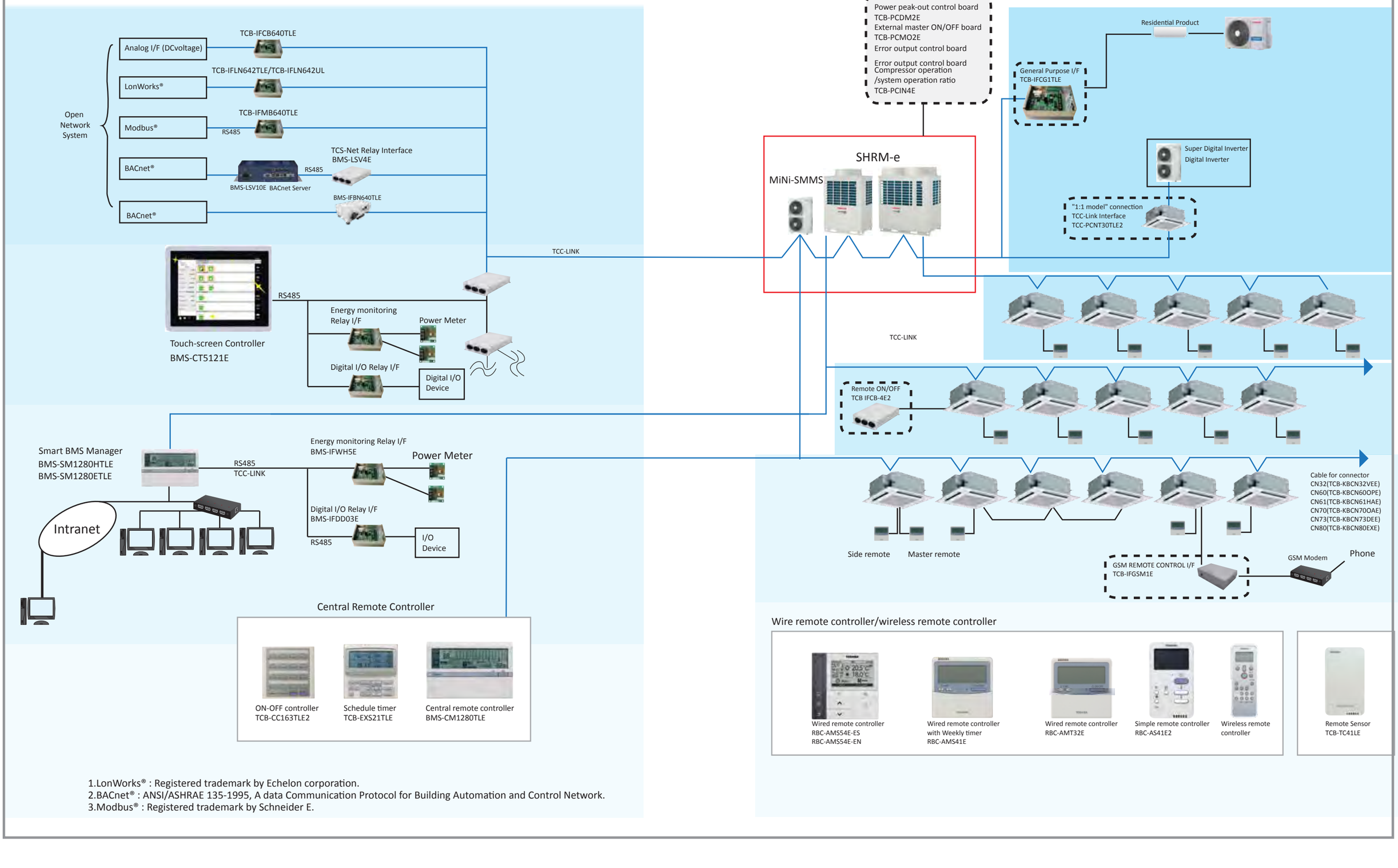
Indoor unit	Parts Name	Model Name	Applied Model	Notes	Remarks
4-way air discharge cassette type	Ceiling panel	RBC-U31PGP(W)-E	MMU-AP***4HP1-E	Required accessory	
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)	Use with TCB-GFC1602UE
	Fresh air filter chamber	TCB-GFC1602UE		For fresh air inlet box	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
	Spacer for height	TCB-SP1602UE		Height=50 mm	
	Air discharge direction kit	TCB-BC1602UE		Air direction charge by cutting off air discharge port (3 pcs.)	
Compact 4-way cassette type	Ceiling panel	RBC-UM21PG(W)E	MMU-AP***7MH-E	Required accessory	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
	Occupancy sensor	TCB-SIR41UM-E		Wireless remote controller kit and Occupancy sensor cannot be used on the same indoor unit.	
2-way air discharge cassette type	Ceiling panel	RBC-UW283PG(W)-E	MMU-AP0072 to 0152WH1	Required accessory	
		RBC-UW803PG(W)-E	MMU-AP0182 to 0302WH1		
		RBC-UW1403PG(W)-E	MMU-AP0362/0482/0562WH1		
	Super long life filter	TCB-LF283UW-E	MMU-AP0072 to 0152WH1	Dust collecting effect: 50% (Weight method)	Use with TCB-FC283UW-E
		TCB-LF803UW-E	MMU-AP0182 to 0302WH1		Use with TCB-FC803UW-E
		TCB-LF1403UW-E	MMU-AP0362/0482/0562WH1		Use with TCB-FC1403UW-E
	Filter chamber	TCB-FC283UW-E	MMU-AP0072 to 0152WH1	For super long life filter	
		TCB-FC803UW-E	MMU-AP0182 to 0302WH1		
		TCB-FC1403UW-E	MMU-AP0362/0482/0562WH1		
	Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH1	For fresh air intake by using the knockout hole of indoor unit.	
1-way air discharge cassette type	Ceiling panel	RBC-UY136PG	MMU-AP***4YH1-E	Required accessory	
		RBC-US21PGE	MMU-AP***4SH1-E	Required accessory	
	Front air discharge unit	TCB-BUS21HWE			
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SPH1-E	For fresh air intake by using the knockout hole of indoor unit. (dia.=100	
Concealed duct type	Spigot shaped flange	TCB-SF56C6BPE	MMD-AP0076 to 0186BHP1-E		
		TCB-SF80C6BPE	MMD-AP0246/0276/0306BHP1-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0566BHP1-E		
Concealed duct high static pressure type	Long Life Filter Kit	TCB-LK801D-E	MMD-AP0186/0246/0276HP1-E		
		TCB-LK1401D-E	MMD-AP0366/0486/0586HP1-E		
	Spigot Shaped Flange	TCB-SF80C6BPE	MMD-AP0186/0246/0276HP1-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0586HP1-E		
	Auxiliary fresh air flange	TCB-SF160C6BPE	MMD-AP***6HP1-E		
	Long life filter kit	TCB-LK2801DP-E	MMD-AP0726/0966HP-E	Flange shaped, Mount chassis directly, Upside down mountable	
	Drain pump kit	TCB-DP40DPE	MMD-AP0726/0966HP-E	Lift up 500 mm	
Ceiling type	Drain pump kit	TCB-DP31CE	MMC-AP0158/0188HP-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP13CE
			MMC-AP0248 to 0568HP-E		Use with TCB-KP23CE
	Elbow piping kit	TCB-KP13CE	MMC-AP0158/0188HP-E	Needed when drain pump kit is used	
		TCB-KP23CE	MMC-AP0248 to 0568HP-E		
Air to Air Heat Exchanger with DX-coil	Drain pump kit	TCB-DP31HEXE	MMD-VN502 to 1002HEX1E	Stand-up 330 mm or less (from bottom face of ceiling)	
Fresh air intake indoor unit type	High-efficiency filter 65	TCB-UFM3DE	MMD-AP0721/0961HFE	Dust collecting effect: 65% (NBS Colorimemtric method)	Use with TCB-PF3DE
		TCB-UFM4D-1E	MMD-AP0481HFE		Use with TCB-PF4D-1E
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0721/0961HFE	Dust collecting effect: 90% (NBS Colorimemtric method)	Use with TCB-PF3DE
		TCB-UFH8D-1E	MMD-AP0481HFE		Use with TCB-PF4D-1E
	Long life prefilter	TCB-PF3DE	MMD-AP0721/0961HFE	Dust collecting effect: 50% (Weight method)	
		TCB-PF4D-1E (2pcs)	MMD-AP0481HFE		
	Filter chamber	TCB-FCY51DFE (2pcs)	MMD-AP0481HFE	For high-efficiency filter or long life prefilter	
		TCB-FCY100DE	MMD-AP0721/0961HFE		
	Drain pump kit	Drain pump kit	MMD-AP0481HFE/0721/0961HFE	Stand-up 330 or less (from bottom face of ceiling)	

CombinationPattern

1) Accessory for 4-way air discharge cassette type: combination pattern

		1	2	3	4	5	6
		Ceiling panel	Fresh air inletbox + Fresh air filter chamber	Fresh air filter chamber	Auxiliary fresh air flange	Spacer for height adjustment	Air discharge direction kit
1	Ceiling panel		OK	OK	OK	OK	OK
2	Fresh air inlet box + Fresh air filter chamber	OK			OK	—	OK
3	Fresh airfilter chamber	OK			OK	OK	OK
4	Auxiliary fresh airflange	OK	OK	OK		OK	OK
5	Spacer for height adjustment	OK	—	OK	OK		OK
6	Air discharge directon kit	OK	OK	OK	OK	OK	

Air-conditioning Management System on site



Wire remote controller/wireless remote controller

1.LonWorks® : Registered trademark by Echelon corporation.
2.BACnet® : ANSI/ASHRAE 135-1995, A data Communication Protocol for Building Automation and Control Network.
3.Modbus® : Registered trademark by Schneider E.

Wired remote controller

Wired remote controller

RBC-AMS54E-ES
RBC-AMS54E-EN

Wired remote controller with a built in 7-day timer-featuring a new multi-language,
LCD display with backlight, energy saving options and a return back function.

- Possibility to set and display the room name to easily set-up and monitor the working parameter.
- New modern and desirable controller design with menu driven display.
- Save mode by schedule timer to optimise energy consumption.
- Room temperature display always available.
- Two "Hot Keys" (F1, F2) for easy operation of air conditioner functions.
- Easy to read layout including display of indoor unit model name and serial number.
- Built-in backup power. Settings are kept in memory up to 72 hours in case of power failure.
- Remote TA sensor available in controller.
- Can be connected to a single indoor unit or a group of up to 8 indoor units.

Standard Remote controller
RBC-AMT32E

Standard wired remote controller can be connected to a single indoor unit or a group of up to 8 indoor units.

Power save operation limits the greatest current value.The remote controller allows error to be displayed while the protective device works or a error occurs.

Remote controller with weekly timer (7-day timer function)

RBC-AMS41E

- **Clock display**
- **Schedule timer:**
  Possible to program schedule timer (7-day timer) function
  Possible to program 8 functions for each day of the week

*The following items can be set in program:
operation time,
operation start/stop, operation mode,
temperature setting,
restriction on button operation

Simple wired remote controller
RBC-AS41E2

- Start/Stop
- Temperature setting
- Air flow changing
- Check code display

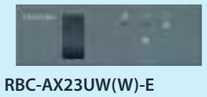
Wireless remote controller

RBC-AX33CE2
Integral receiver
(For ceiling) (MMC-AP***8HP-E)
(MMU-AP***4SH1-E)

RBC-AX32U(W)-E
RBC-AX32U(WS)-E
Integral receiver
(For 4-way air discharge cassette)
(MMU-AP***4HP1-E)

RBC-AX32UM(W)-E
Integral receiver
(For compact 4-way cassette)
(MMU-AP***7MH-E)

TCB-AX32E2
Stand alone receiver
(For 4-way air discharge cassette, compact 4-way cassette
(600 x 600), 2-way air discharge cassette, ceiling, concealed
duct standard, slim duct, floor standing cabinet, floor
standing, 1-way discharge cassette
(MMU-AP ***4YH1-E/SH1-E)



RBC-AX23UW(W)-E
Integral receiver (For 2-way air discharge cassette) (MMU-AP ***2WH1)

Wireless remote controller kit & sensor unit (receiver unit)

- Start/Stop •Changing mode •Temperature setting
- Air flow changing
- Timer function
  Either "ON" time or "OFF" time or "CYCLIC" can be set how many 30 min. later ON or OFF is operated.
- Control by 2 remote controllers is available.
  Two wireless remote controllers can operate one indoor unit. The indoor unit can then be operated separately from the two different locations.
- Check code display
  The wireless remote control cannot be connected to concealed duct high static pressure type.

Central remote controller

Central remote controller

BMS-CM1280TLE

- **Operation**
  Individual operation of 128 indoor units available
  Return Back Operation
  Weekly Schedule Operation*
  (ON/OFF)
  * Schedule timer necessary
- **Monitoring**
  Zone setting (64 zones x 2)
  Individual unit operation mode operation restriction
  Alarm display
  Control input
  Status output

ON-OFF controller
TCB-CC163TLE2

- Individual control of up to 16 indoor units.
- Setting of simultaneous ON/OFF 3times per day combined with the weekly timer.

Schedule timer
TCB-EXS21TLE

- **Schedule timer mode**
  – 6 programmings per day
  – Enabling 8 groups to be programmed
  – A maximum of 64 indoor units can be controlled
  – A maximum of 100 hours back-up power supply
- **Weekly timer mode**
  – 7 types of weekly schedule and 3 programmings per day

Other

Remote sensor
TCB-TC41LE

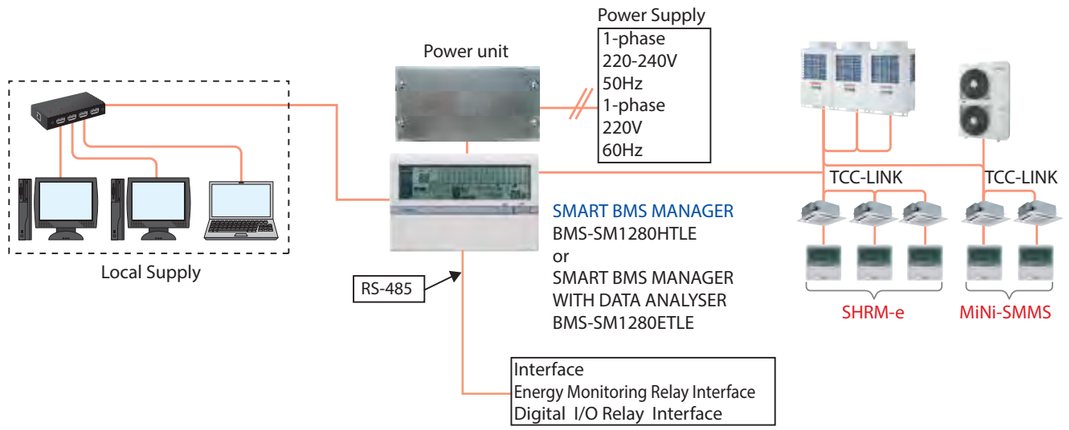
Install this sensor when outside air has been introduced or when overcooling and overheating are to be minimised.

Wired remote controller for air to air heat exchanger
NRC-01HE

- Up to 8 units of the Air to Air Heat Exchanger can be operated using this remote controller.
- Control by 2 remote controllers is available.
  Two remote controllers can operate a single Air to Air Heat Exchanger.
- Air conditioning units may be controlled in addition to controlling the Air to Air Heat Exchanger.
- Central control allows linked ON/OFF operation of air conditioner and Air to Air Heat Exchanger.
- Central control can be set to allow standalone operation of the Air to Air Heat Exchanger.
- Switchable ventilation modes (Automatic/Air to Air/Normal)
- Switchable ventilation air volume (Extra-high/High-Low)

Building management systems

SMART MANAGER / SMART MANAGER WITH DATA ANALYSER



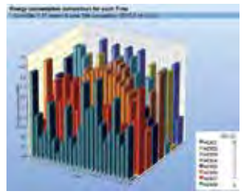
SMART BMS MANAGER
BMS-SM1280HTLE

SMART MANAGER WITH DATA ANALYSER
BMS-SM1280ETLE

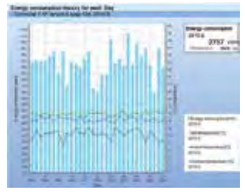
Web browser control software

- List View available - Displays all indoor units in one screen
- Set View available - Shows basic indoor unit settings on main screen
- Advanced operation and master schedule functions available
- Advanced operation & master schedules can be set on a calendar
- Up to 4 concurrent users can be connected
- Up to 32 user accounts can be programmed with different levels of access (at least 1 must be administrator level)
- Energy monitoring and billing functions available
- Additional digital I/O device available
- Thin profile controller and separate power supply unit enables easy installation.

Energy monitoring display



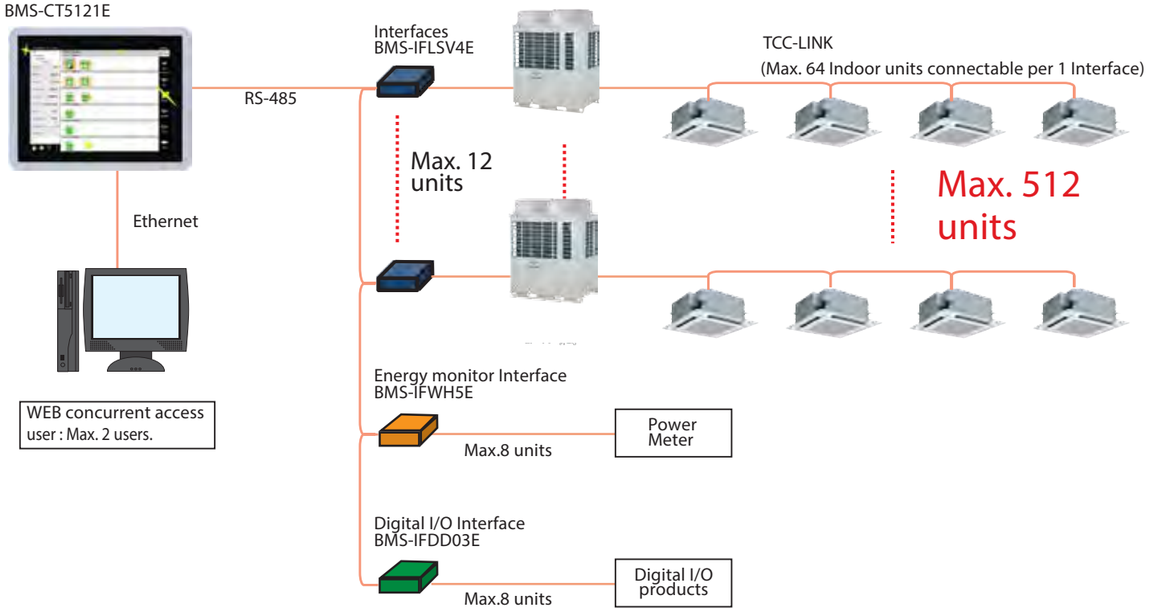
3D energy view



Daily energy view

Touch screen controller

TOUCH SCREEN CONTROLLER
BMS-CT5121E



TOUCH SCREEN CONTROLLER
BMS-CT5121E

• Touch screen controller

Using the touch screen controller provides a clear display and enables easy operation.
A maximum of 512 units / groups are controllable.

• Energy monitoring and billing application

Power meter interface, power meter locally supplied Energy Monitoring relay I/F (BMS-IFWH5E)

• Power meter

(Local Supply)
1 kWh/pulse or 10 kWh/pulse
(Pulse duration 50 to 1000 ms)
(Maximum 8 power meters per interface)

Relay Interface BMS-IFWH5E
For Energy Monitoring

Relay Interface BMS-IFDD03E
For Digital I/O

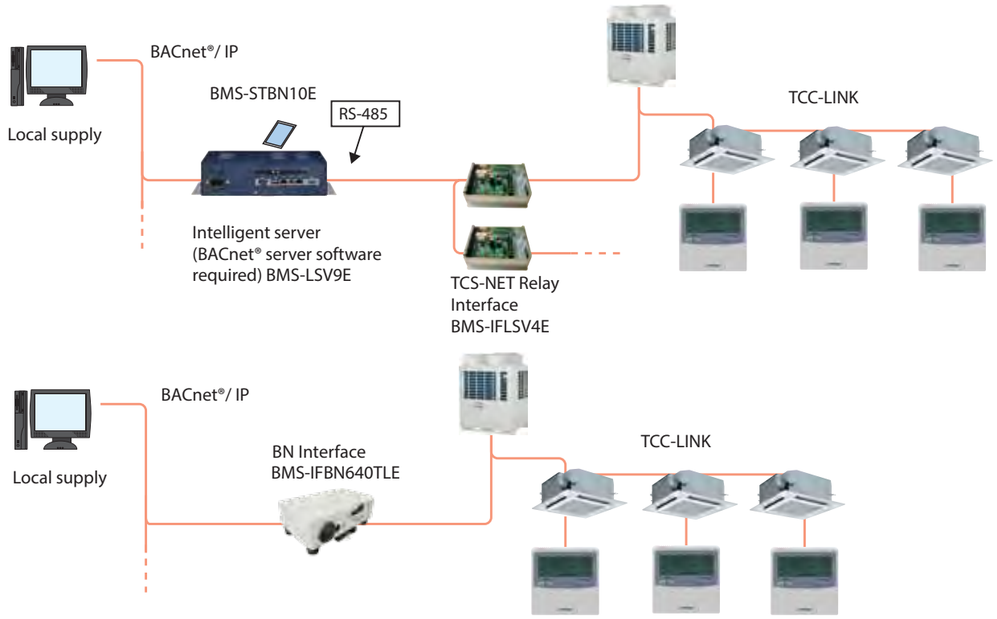
Relay Interface BMS-IFLSV4E
For TCS-NET

FEATURES

• Icon display	OK
• Return back function	OK
• Save & demand control for outdoor unit	OK
• Ventilation unit control & monitoring	OK
• Setting temp. range control	OK
• Setting temp. shift	OK

Open network systems

BACnet® system



Intelligent Server
BMS-LSV9E

BACnet® Server Software
BMS-STBN10E

Relay Interface BMS-IFLSV4E
For TCS-NET

• **BACnet®**

The BACnet® system operates in conjunction with the BACnet®.
Signals and provides the following functions:

• **Control**
– ON/OFF
– Temperature setting
– Fan speed

• **Monitoring**
– ON/OFF
– Operation mode
– Temperature setting
– Room temperature
– Local remote controller : permit / prohibit

BN Interface
BMS-IFBN640TLE

• **BACnet®**

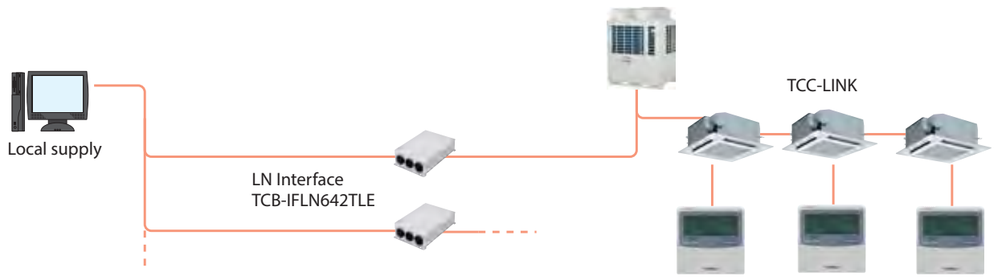
The BACnet® system operates in conjunction with the BACnet®.
Signals and provides the following functions:

• **Control**
– ON/OFF
– Temperature setting
– Fan speed

• **Monitoring**
– ON/OFF
– Operation mode
– Temperature setting
– Room temperature
– Local remote controller : permit / prohibit

• **Feature**
– Relay I/F (BMS-IFLSV4E) is unnecessary
– Up to 64 indoor units connection

LonWorks®



LN Interface
TCB-IFLN642TLE

• LonWorks® LN Interface

The LonWorks® interface manages the SHRM-e air conditioning system as a Lon device to communicate with the custormer's Building Management System and to monitor operational status.
A maximum of 64 units / groups are controllable per interface.

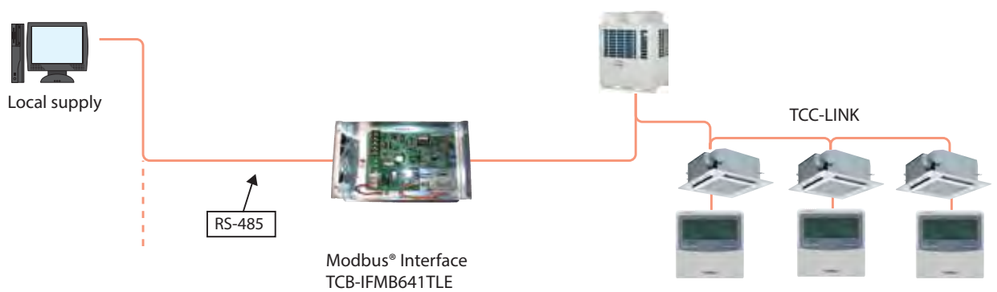
• SNVT signal

Signals and provides the following functions:

• Control
– ON/OFF
– Temperature setting
– Fan speed

• Monitoring
– ON/OFF
– Operation mode
– Temperature setting
– Room temperature
– Local remote controller : permit / prohibit

Modbus®



Modbus® Interface
TCB-IFMB641TLE
TCB-IFMB640TLE

• Modbus®

The Modbus® interface manages the SHRM-e air conditioning system as a Modbus® device to communicate with the custormer's Building Management System.
Accessible to 64 units / groups per one TCB-IFMB641TLE, 15 TCB-IFMB641TLEs on one Modbus® Master (prepared by user).
Signals and provides the following functions:

• Control
– ON/OFF
– Temperature setting
– Fan speed

• Monitoring
– ON/OFF
– Operation mode
– Temperature setting
– Room temperature
– Local remote controller : permit / prohibit

1. LonWorks®: Registered trademark Echelon corporation.
2. BACnet®: ANSI/ASHRAE 135-2008, A data Communication Protocol for Building Automation and Control Networks.
3. Modbus® is a registered trademark of Schneider E.

TCB-PCDM4E

Size: 71 × 85 (mm)

Power peak-cut control

• **Feature**

The upper limit capacity of the outdoor unit is restricted based on the outdoor power peak selected setting.

• **Function**

Two control settings are selectable by setting SW07 on the interface P.C. board on the outdoor unit.

TCB-PCMO4E

Size: 55.5 × 60 (mm)

Snowfall fan control

• **Feature**

The upper limit capacity of the outdoor unit is restricted based on the outdoor power peak selected setting.

External master ON/OFF control

• **Feature**

The outdoor unit starts or stops the system.

Night operation (Sound reduction) control

• **Feature**

Sound level can be reduced by restricting the compressor and fan speeds.

Operation mode selection control

• **Feature**

This control can restrict the selectable operation modes.

TCB-PCIN4E

Size: 73 × 79 (mm)

Error/Operation output control

• **Feature**

Enables external output of error and operation signals.

Compressor operation output

• **Feature**

Enables external signal output for each compressor that is in operation within any given outdoor unit. This feature provides a practical method for calculating total operating times for each compressor.

Operating rate output

• **Feature**

External output of system operating rates enables remote monitoring of operating conditions.

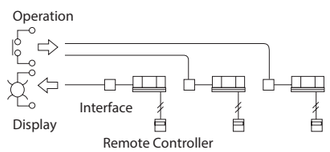
TCB-IFCB-4E2

Size: 200 × 170 × 66 (mm)

Remote location ON/OFF control box

• **Feature**

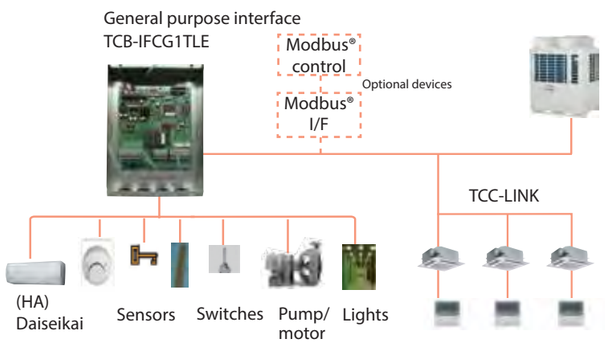
Start and stop of the air conditioner is possible by an external signal and indication of operation/ alarm externally.



Monitoring

ON/OFF status (for indoor unit)
Alarm status (system & indoor unit stop)
ON/OFF command
Air conditioner can be turned ON/OFF by the external signals.
The external ON/OFF signals will initiate the signals shown below.

General Purpose Interface



Concept

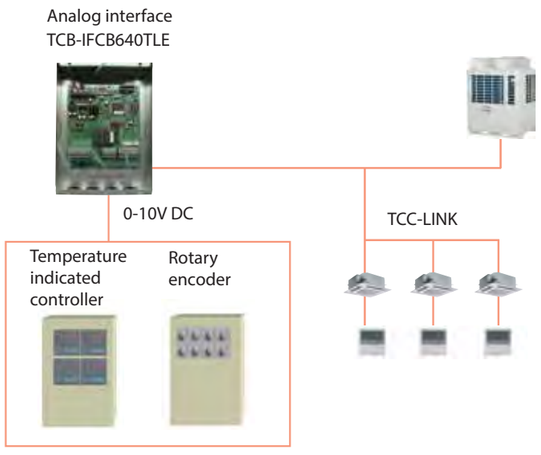
• Controls the operation status of each indoor unit.

• ON/OFF control of peripheral equipment via the relay point of Toshiba's BMS. (1pt only)

Standard function
Central remote controller and Building Management System devices can control ON/OFF function via digital I/O ports.

Optional function
Control using the following channels: 4-channel relay control, 6-channel digital input, 2-channel analog voltage input and output, and 2-channel temperature measurement functions via Modbus® I/F.

Analog Interface



Concept

• Provides access to 64 indoor units.

• Does not require special network knowledge.

• Can control each indoor unit on TCC-LINK, (on/off, temperature setting, airflow volume, louver position), and monitor status based on 0-10V DC voltage input.

• Enables relay control and status monitoring of general-purpose I/F TCB-IFCG1TLE.

Installation and the use of refrigerants not specified by Toshiba Carrier Corporation

Toshiba refrigeration and air-conditioning units are designed and manufactured on the assumption that the product is used with a specific refrigerant suitable for each unit.

We have recently seen some cases where the type of refrigerant used is different from the one originally installed in the product. Such actions may cause mechanical defects, malfunctions, failures and in some cases result in a serious safety issue. Therefore do not install any refrigerant other than the one specified by Toshiba Carrier Corporation for its respective products.

The type of the refrigerant used for each of our products is shown in the accompanying owners manual, or on the product label attached on the product itself.

Toshiba Carrier Corporation shall not assume any liability for failures, malfunctions or safety in its products if the refrigerant used is different from the one specified.

⚠ SAFETY PRECAUTIONS

For operation:

• Before use, read through the operating instructions to ensure proper use.

Concerning the purpose for which the air conditioners are to be used

• The air conditioners presented in this catalogue are air conditioning/heating units to be used solely by general consumers.
  – Do not use these air conditioners for special applications such as for the storage of food items, animals, plants, precision machines or works of art. Doing so may degrade the quality of the items.
  – Do not use these air conditioners for air-conditioning applications in vehicles or ships. Doing so may cause water and/or power leakages.

Precautions for using air conditioners

Concerning the automatic defrosting unit

When the outdoor air temperature drops, frost may form on the heat exchanger of the outdoor unit. In such cases, the automatic defrosting unit will be activated, and it will take 5 to 8 minutes for the heating operation to be restored.

Concerning the air conditioner's operating conditions and their selection

(1) Avoid using the air conditioner in the following locations.
- Locations with acidic or alkaline atmospheres (locations at which highly acidic or alkaline air is directly drawn in, such as in hot springs areas from which sulfur gases are given off, or where chemicals, vinegar, exhaust air from burners, etc., are given off) The heat exchangers and other parts may become corroded.
- Locations with atmospheres filled with coolant or other machine oil or steam exhaust (such as at food preparation factories or machine plants). The heat exchangers may corrode; frost may form as a result of heat exchanger malfunction; air conditioner operating performance may be compromised or condensation may form as a result of clogged filters; plastic parts may incur damage; heat-insulation materials may become separated, etc.

(2) Before using an air conditioner in any of the following locations, consult with your dealer or a qualified contractor.
- Locations where vapors from edible oils are given off (such as in bakeries or kitchens and restaurants that use edible oils) ...The air conditioner's operating performance may be compromised or condensation may form as a result of clogged filters, and the plastic parts may incur damage. In line with the prevailing conditions, take countermeasures such as tailoring the installation conditions in accordance with the conditions, using air conditioners designed for kitchens or oil guard filters, etc.
- Locations with disinfectant-induced chlorine atmospheres (water tanks, etc.) The metal parts in the heat exchangers, motors, etc., may become corroded.
- Locations with high salinity (coastal areas, etc.) Corrosion may occur so use outdoor units specifically designed to withstand exposure to salt.
- Locations where power is supplied from independent power generators. The power line frequency and/or voltage may fluctuate, possibly causing the air conditioner to malfunction.
- Locations where high frequencies or electrical noise is generated (from high-frequency welders used for vinyl welding and processing, high-frequency therapeutic devices used for thermotherapy, etc.) The electronic components may be adversely affected, possibly causing the air conditioner to malfunction.
- Locations where electronic equipment is installed. Electrical noise may adversely affect the operation of the electronic equipment.

(3) Concerning use in locations with high ceilings
- In locations with high ceilings, use of circulators for improving the temperature distribution during heating is recommended.

(4) Concerning use in high-humidity environments
- When the ceiling-recessed type of indoor unit is installed in a location, such as those described below, and it is very hot and humid inside the ceiling, condensation may form on the external surfaces of the indoor unit and drip down. In such cases, add external heat-insulating materials.
  – Locations such as food preparation sites in which the areas above the ceilings are hot and humid
  – Locations in which outside air is drawn in and routed above the ceiling
  – Above ceilings with a slate roof or tiled roof overhead

(5) Even when an air conditioner is shut down, it will still consume a small amount of power to protect the unit. If the air conditioner will not be used for a prolonged period, turn OFF the main switch (ground fault circuit breaker). However, before the unit is to be used again, turn ON the main switch (ground fault circuit breaker) for at least 12 hours in order to prevent trouble.

ISO 9001 Quality Management
ISO 14001 Environmental Management
OHSAS 18001 Occupational Health & Safety Management
R-410A HFC

Notice: - Products listed in this leaflet use HFC refrigerant R410A with a GWP of 2,088*.
- Toshiba is committed to continuously improving its products to ensure the highest quality and reliability standards, and to meet local regulations and market requirements. All features and specifications are subject to change without prior notice.

*The GWP value is calculated based on information provided in the EU F-gas Regulation and IPCC Fourth Assessment Report.

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