

TOSHIBA

Leading Innovation >>>



SMMS
SUPER MODULAR MULTI SYSTEM



AIR CONDITIONING FOR LARGE BUILDINGS



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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 “SMMS-e”, the latest commercial air conditioning for various buildings,

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

With the latest technology improved and developed to make SMMS-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.





SMMS
SUPER MODULAR MULTI SYSTEM



Air Conditioning for large buildings

EXCELLENCE

EXPANSION

EXPERIENCE



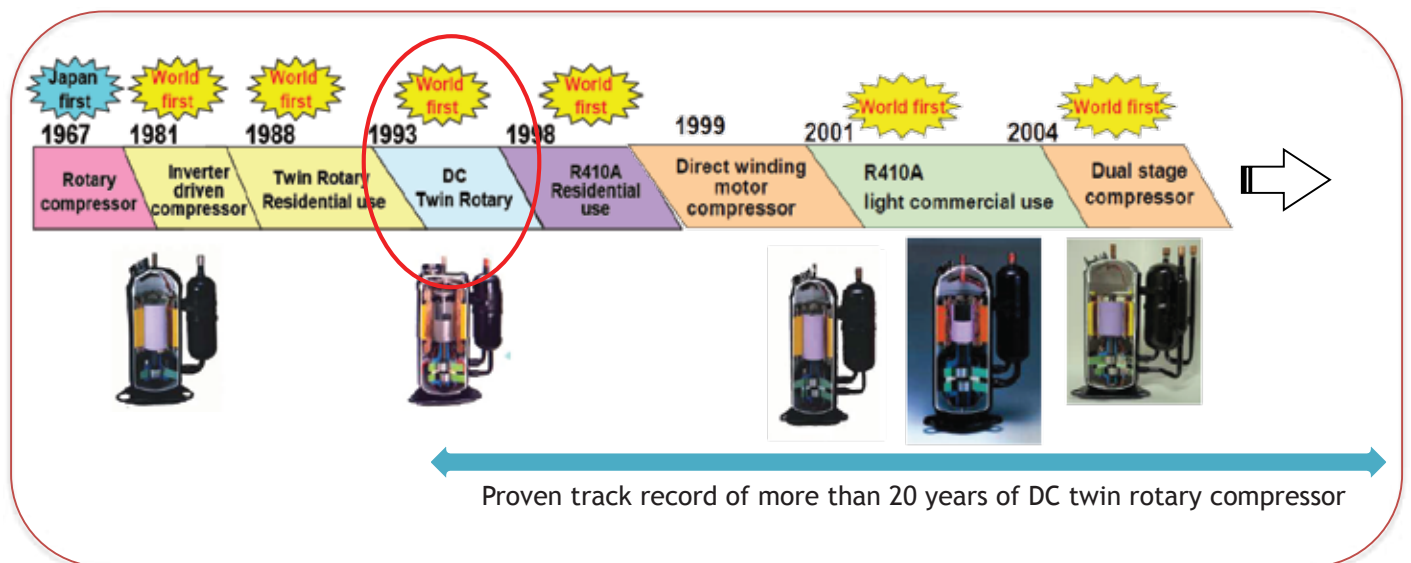
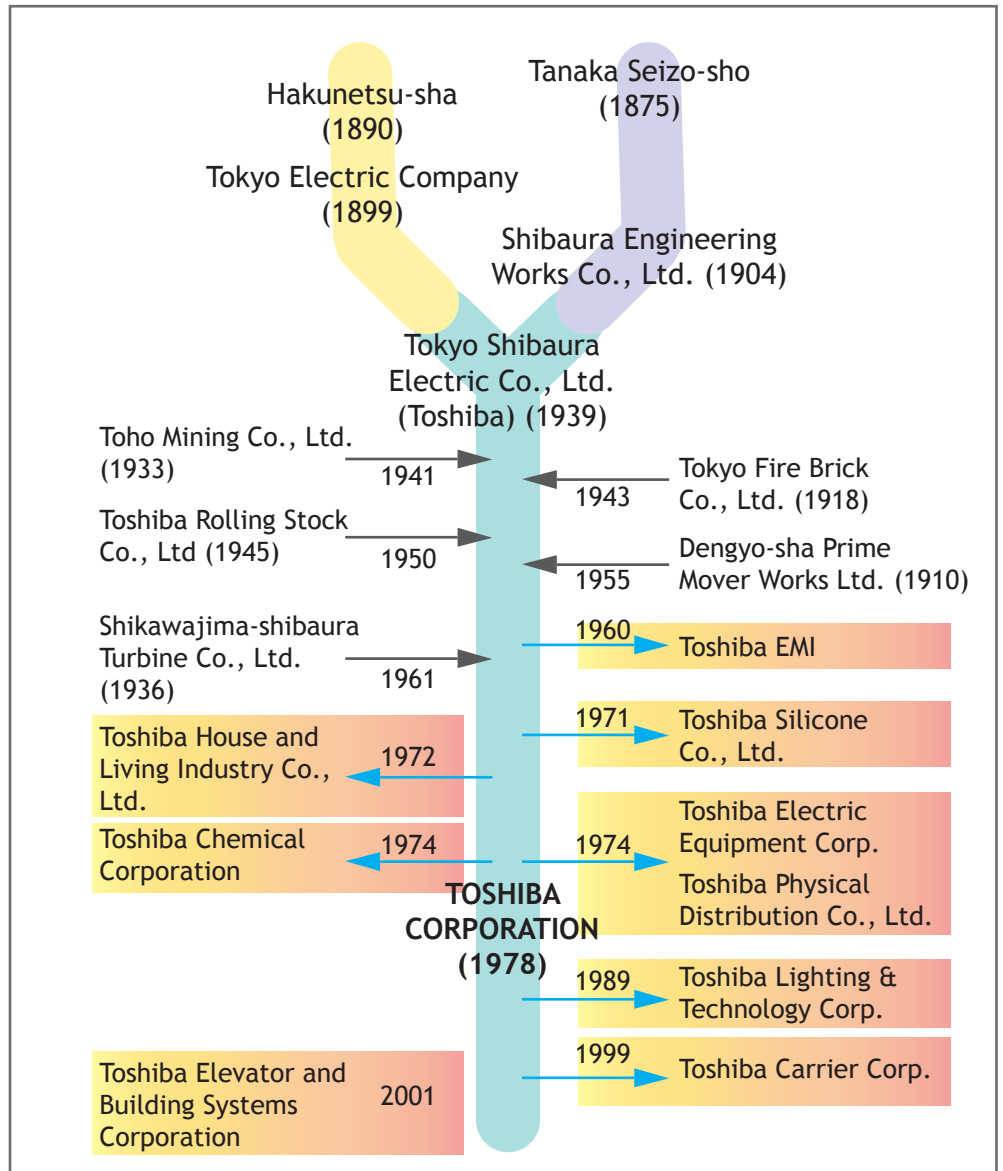
History



Ichisuke Fujioka




Hisashige Tanaka




TOSHIBA VRF History


1985 Multi System AC
Multi System AC




1987 Super Multi
Multi controller




1994 Wide Multi
Optimal ref control
free branch piping




1999 MMS
Module CDU
Oil balance control




2003 SMMS
All inverter control
R410A DC twin rotary comp




2005 Mini SMMS
Small capacity VRF




2010 SMMS-i
3 inverter control,
High energy efficiency




2012 SMMS-i High Ambient
3 inverter control,
Tropical VRF



2015 SMMS-e
Expanded product/
operation range, wave tool



More than 10 years experience with all inverter technology

Approximately 30 Years experience in VRF technology



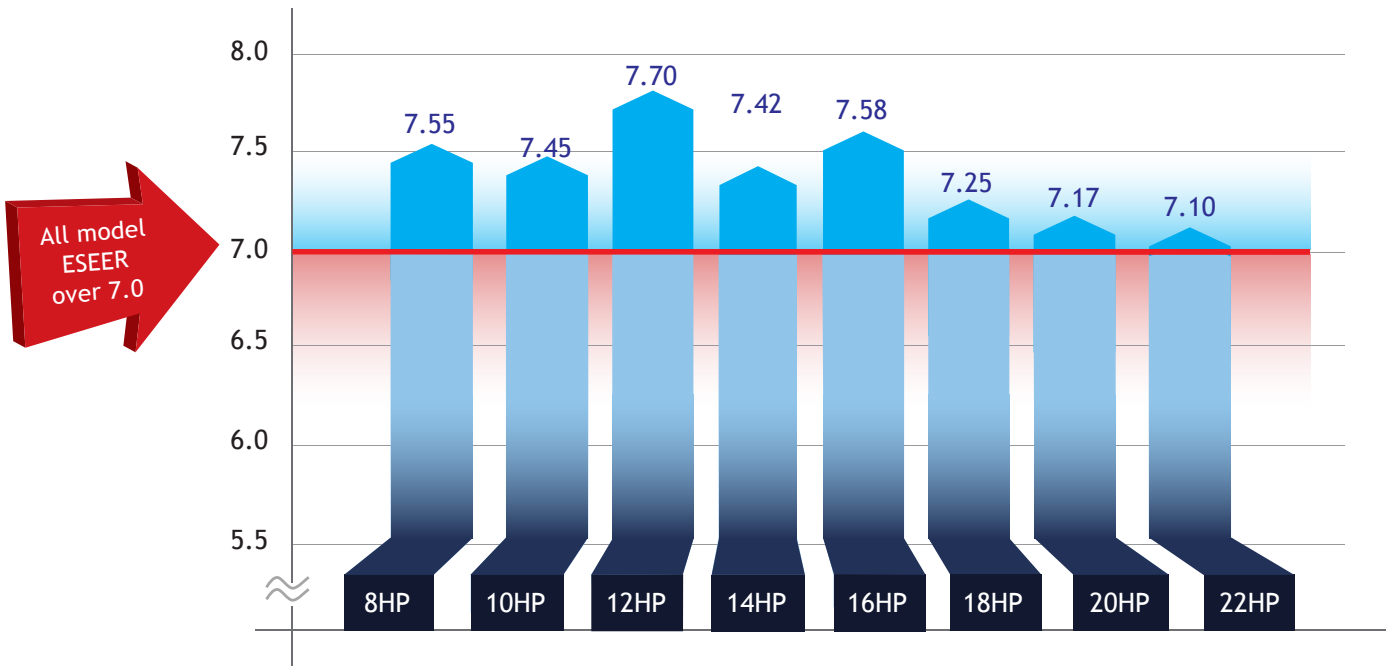
Energy saving

Greater efficiency performance

Adopting the highly efficient new DC twin-rotary compressors with various technologies realized over 7.00 ESEER for all of capacity range.

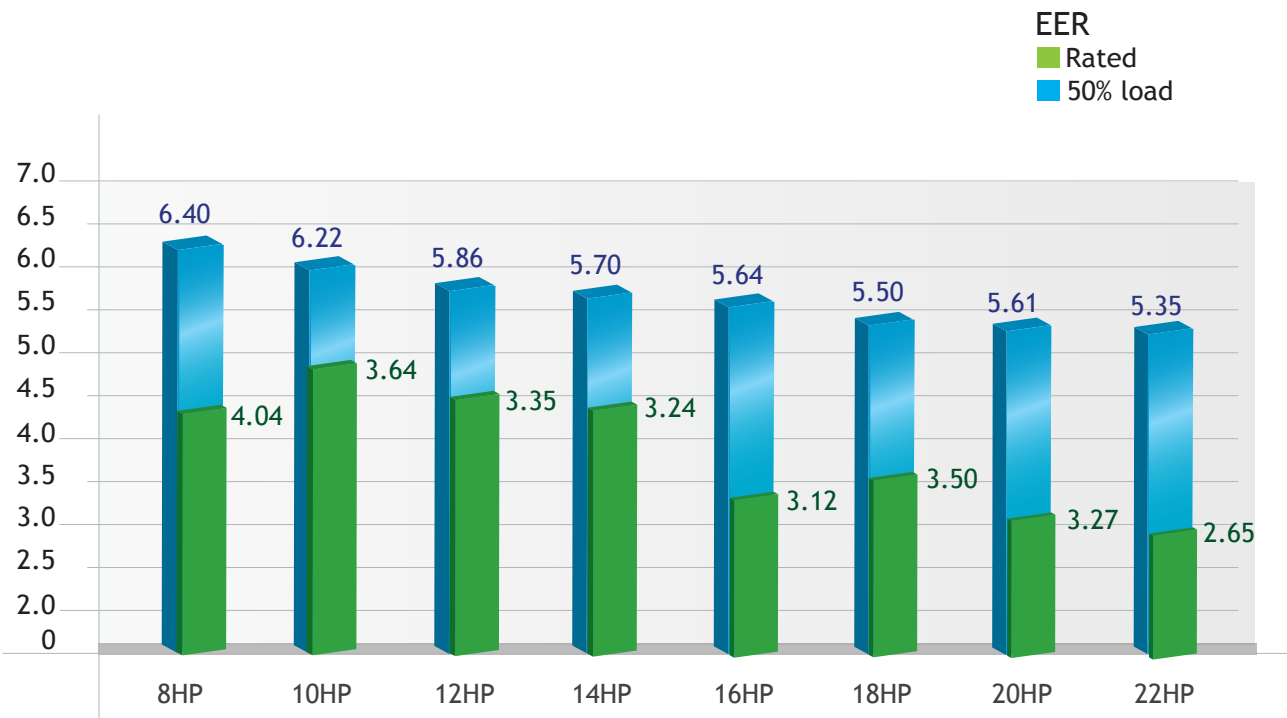
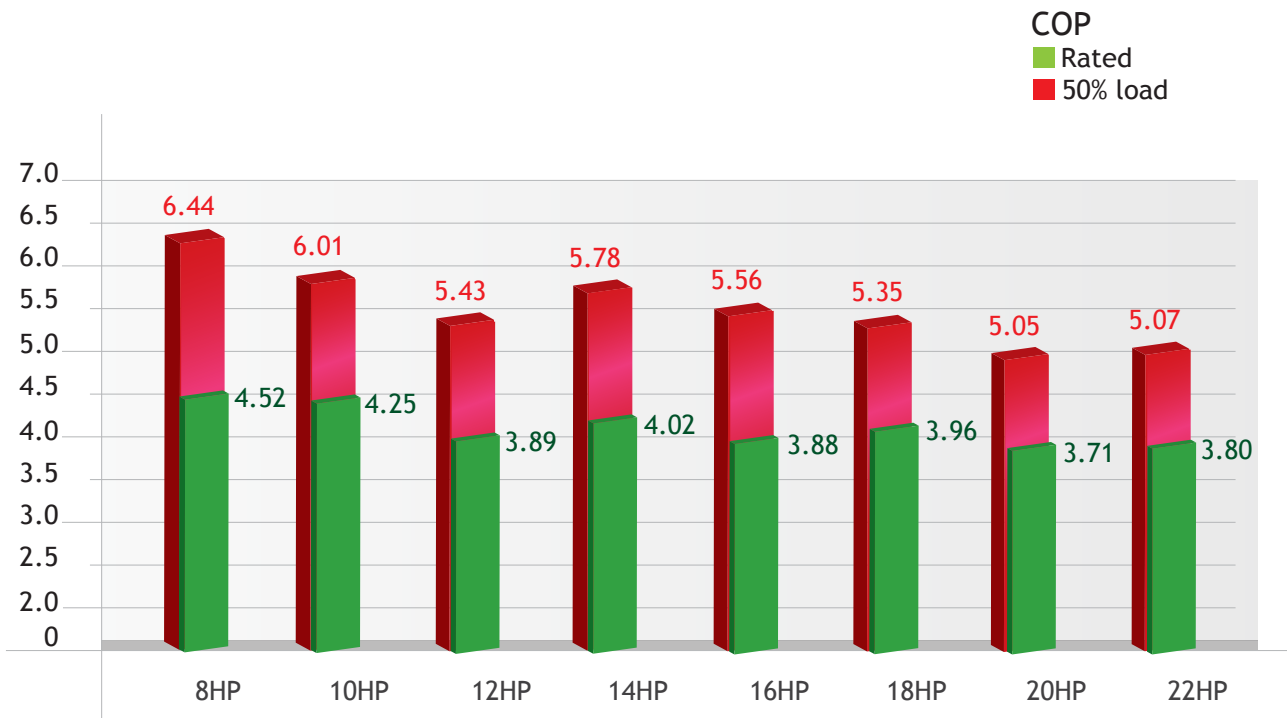


ESEER
Over 7.0 ESEER for all capacity range



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

The overall capacity range and the highest COP and EER of 6.44 and 6.40, the SMMS-e has truly excels as the industry's top class in energy saving.





Capacity range

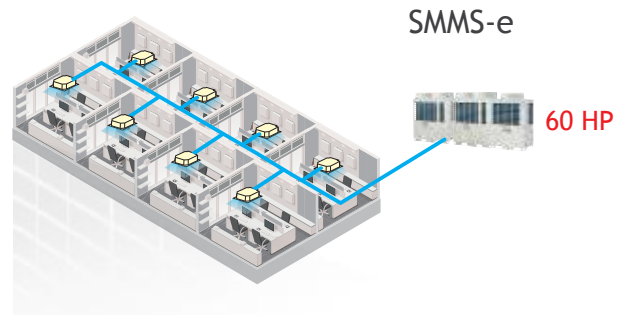
Single unit capacity expanded

SMMS-e comes with 3 new larger capacity units, producing up to 22HP on a single module platform.



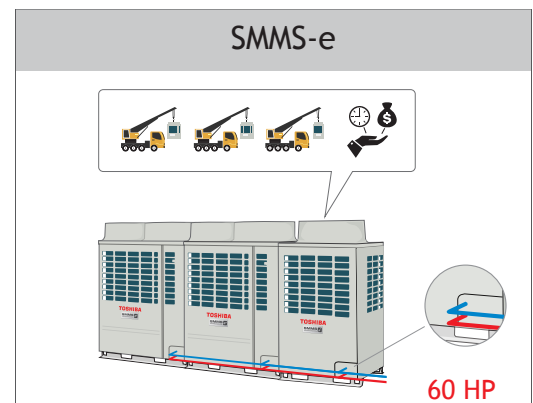
System capacity expanded

With the SMMS-e, it is now possible to connect up to 60HP in one system, with up to 64 connectable indoor units.



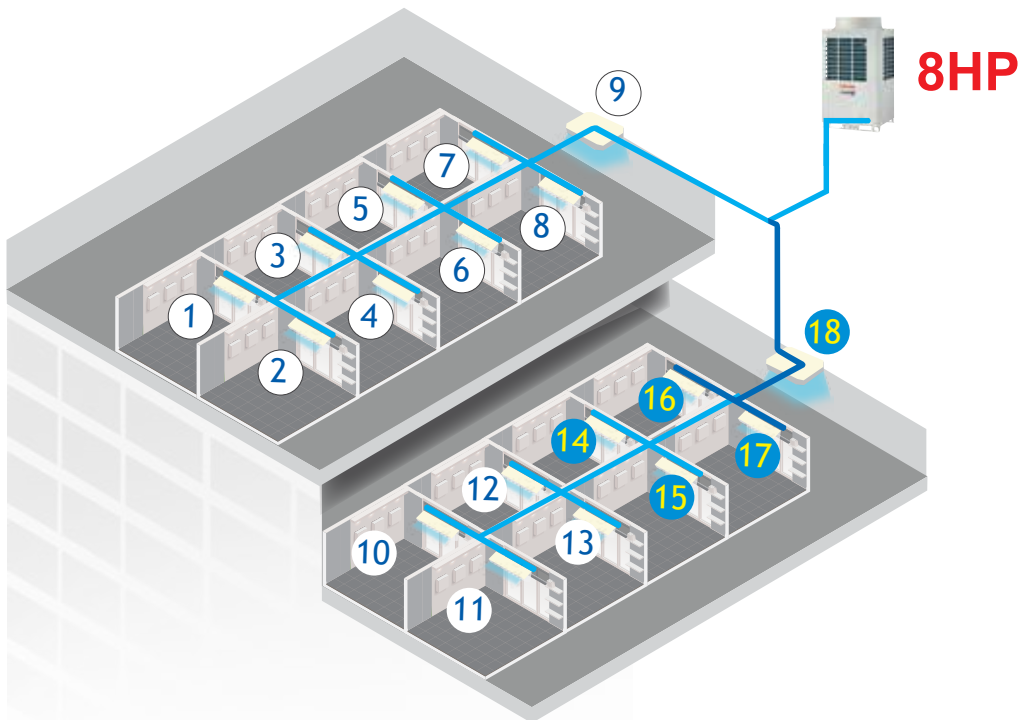
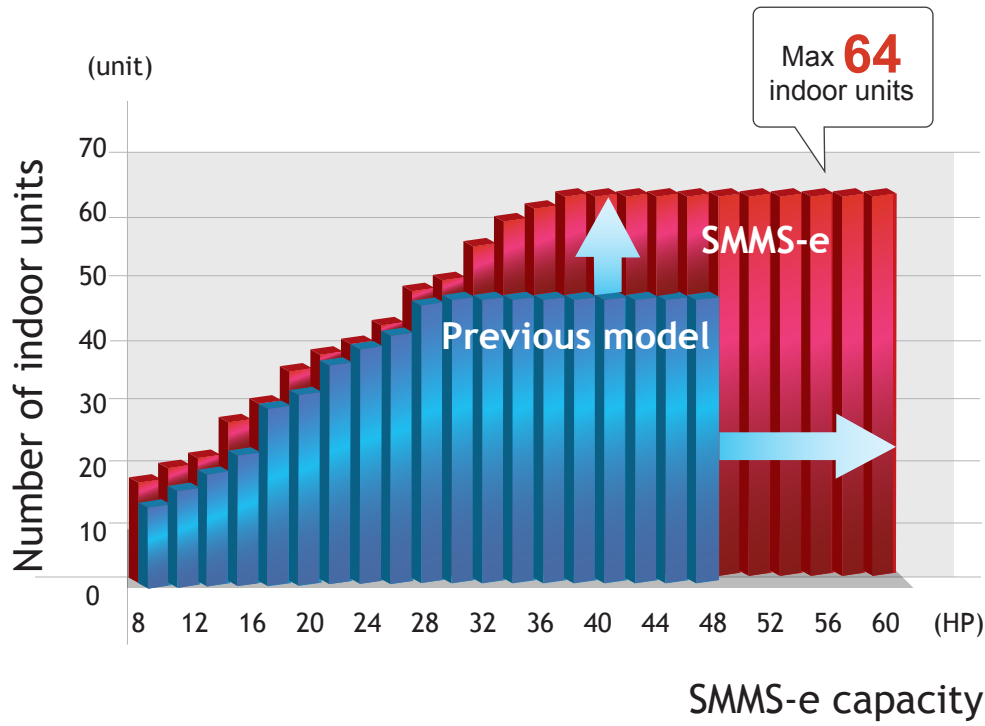
Installation flexibility

While expanding the maximum combination from 48 to 60HP in one system. This helps save more time and expense on additional unit system required in the previous model. The new compact unit design also increases more flexibility on installation with less foot print.



SMMS-e is capable of covering up to 22HP with a single module. Reducing pipe work and overall installation time.

Expansion of connectable number of indoor unit





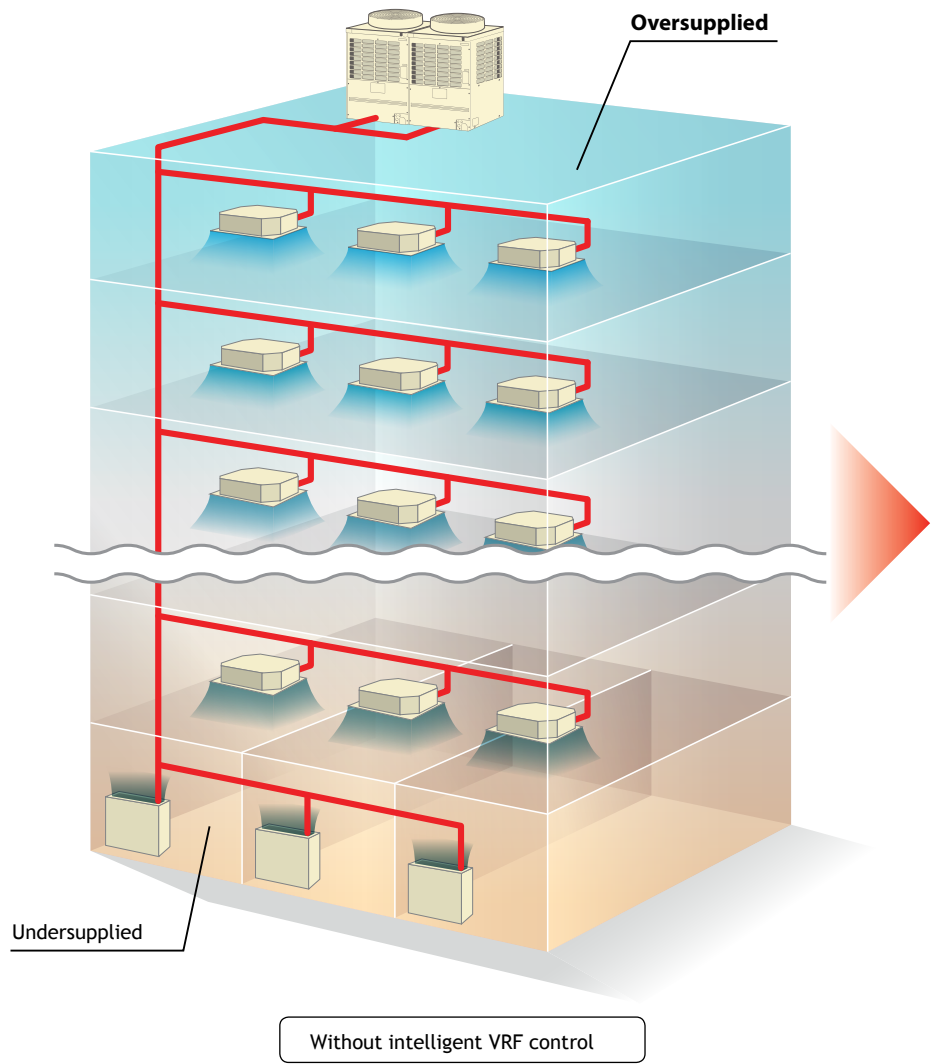
Enhanced Comfort

New intelligent VRF control

Toshiba Carrier systems with intelligent VRF control provide levels of comfort other systems simply cannot match. That's because differing pipe lengths in commercial buildings result in inconsistent levels of performance, especially when several indoor units are connected to a system. This imbalance is caused by pressure loss and thermal leaks that inhibit the optimum refrigerant flow to each indoor unit.

For example, without intelligent control, upper floor indoor units within VRF systems place loads on the refrigerant supply. This causes a delay before enough refrigerant reaches the lower floors to deliver efficient levels of operation.

Without intelligent VRF control, refrigerant flows unevenly throughout the structure, typically oversupplying areas closer to the outdoor unit and undersupplying areas that are farther away.





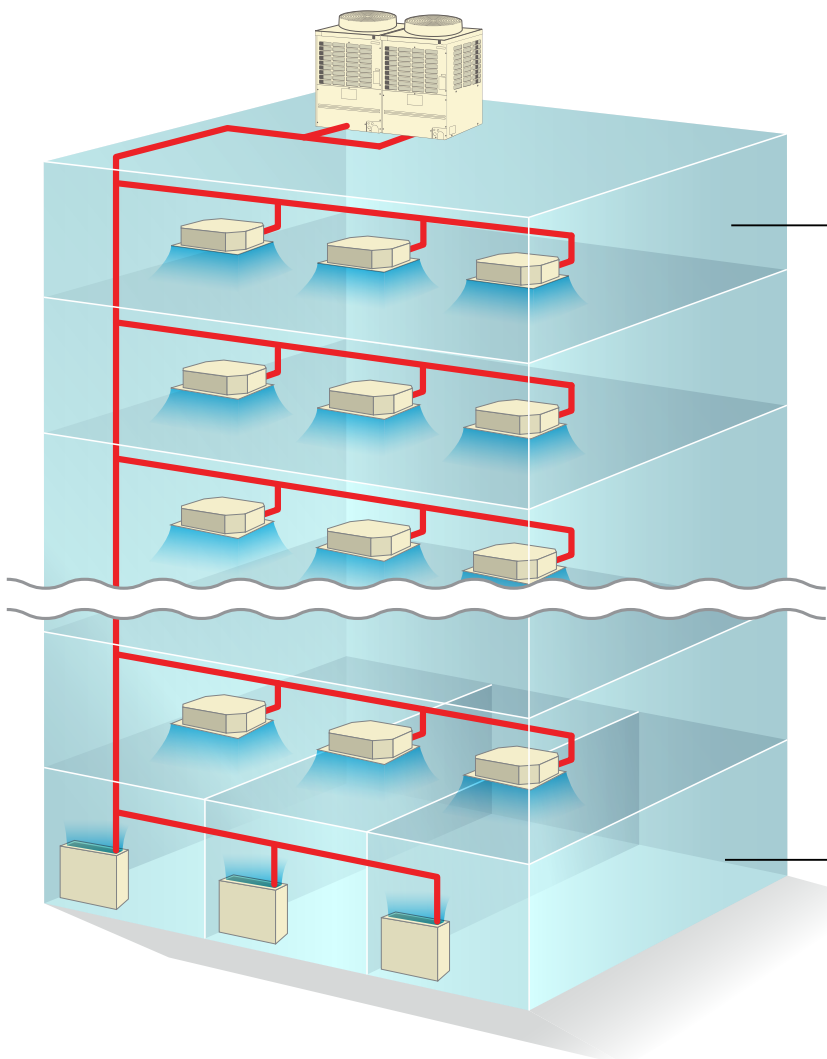
Total system control

Total system control and consistent room-to-room temperature

The Toshiba Carrier intelligent VRF control overcomes these issues by providing precise control of up to 38 indoor units with just electrical wiring and copper refrigerant tubing. It's intelligent because it sends more refrigerant to areas that need it, and supplies less refrigerant to areas that don't. Comfort is distributed evenly regardless of line length. As a result, occupants enjoy greater overall comfort whether they are closest to the outdoor unit or farthest away.

Additionally, Toshiba Carrier SMMS-i systems monitor the flow of refrigerant to each indoor unit while tracking the model number of each indoor unit, pipe length between each indoor unit and the outdoor unit, as well as data on operating conditions. The system computes the amount of refrigerant required by each indoor unit and controls the unit's pulse motor valve to ensure optimal supply across the system with height difference between outdoor unit and indoor unit of up to 230 feet.

Can be adjusted to maintain consistent temperature



With intelligent VRF control

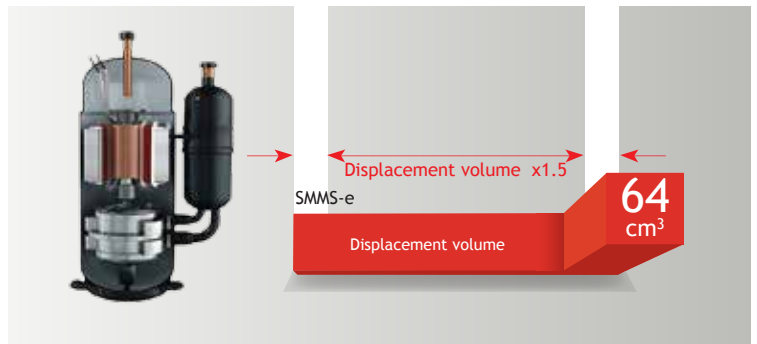
With intelligent VRF control, Toshiba Carrier delivers consistent, room to room comfort across several floors of a commercial structure.



DC twin rotary compressor

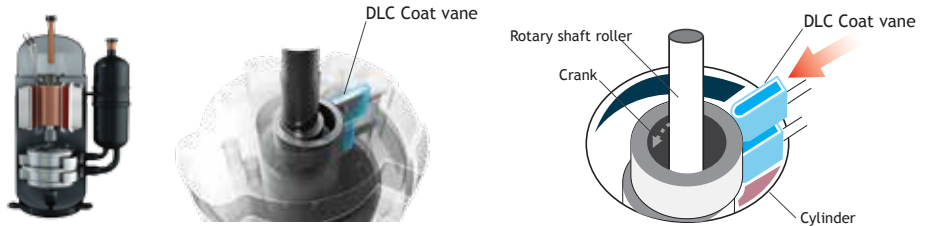
Wide range compressor

More powerful and efficient with the cutting-edge technology of compressor - DC Twin-Rotary operates in wider range of rotation speed.



DLC coated vane

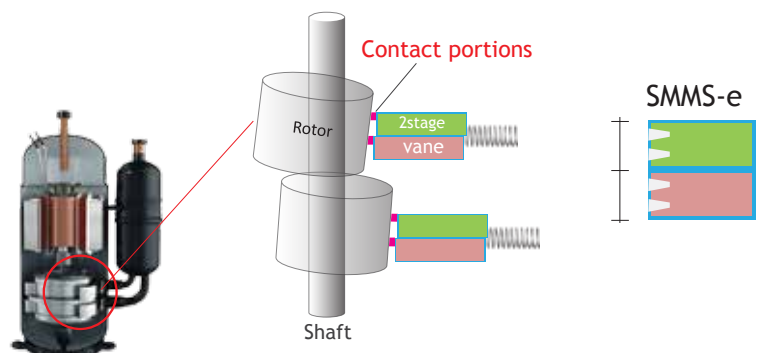
Increased hardness of the DLC coated vane reduces friction and increase both reliability and performance.



* DLC: Diamond Like Carbon

2-stage vane

With 2-stage vane innovatively designed to reduce friction while increasing hardness and enhancing performance at its best.

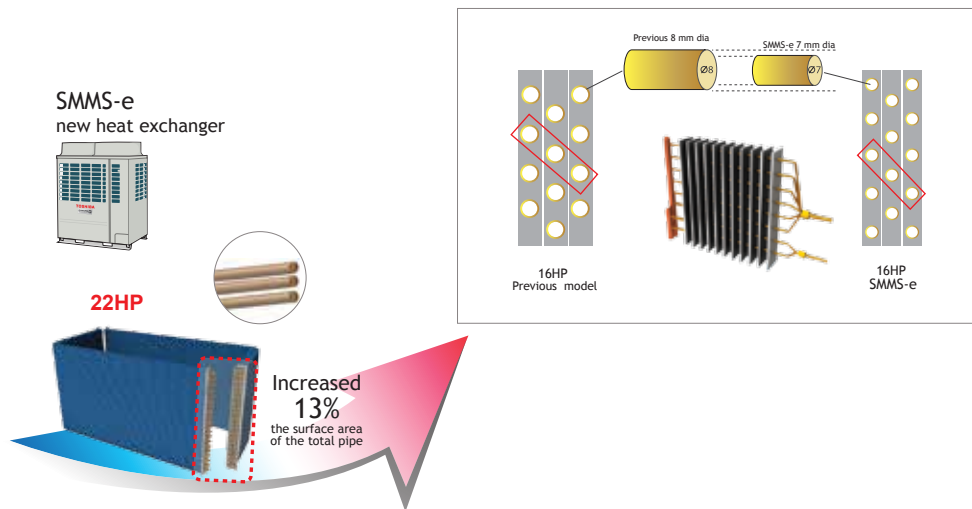




Heat exchanger

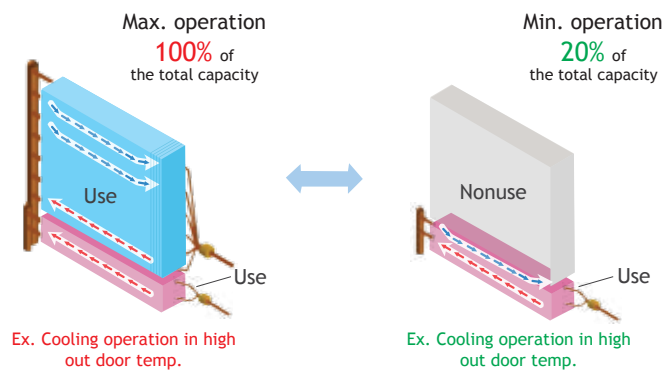
New heat exchanger

New heat exchanger of SMMS-e increases from 2 to 3 rows, providing even more surface area of the total pipe up to 13%.



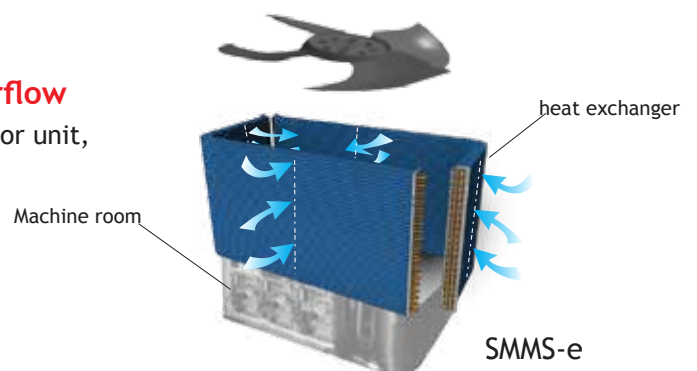
Variable heat exchanger

New system controls allows the outdoor unit to select the most efficient heat exchanger size, which matches the capacity load in order to provide higher energy savings.



4-way heat exchanger can realize balanced airflow

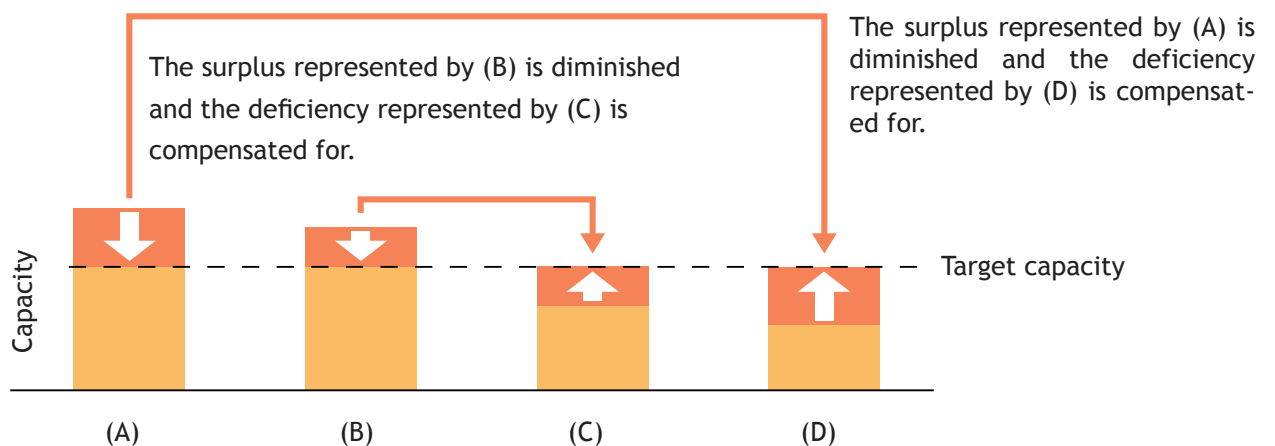
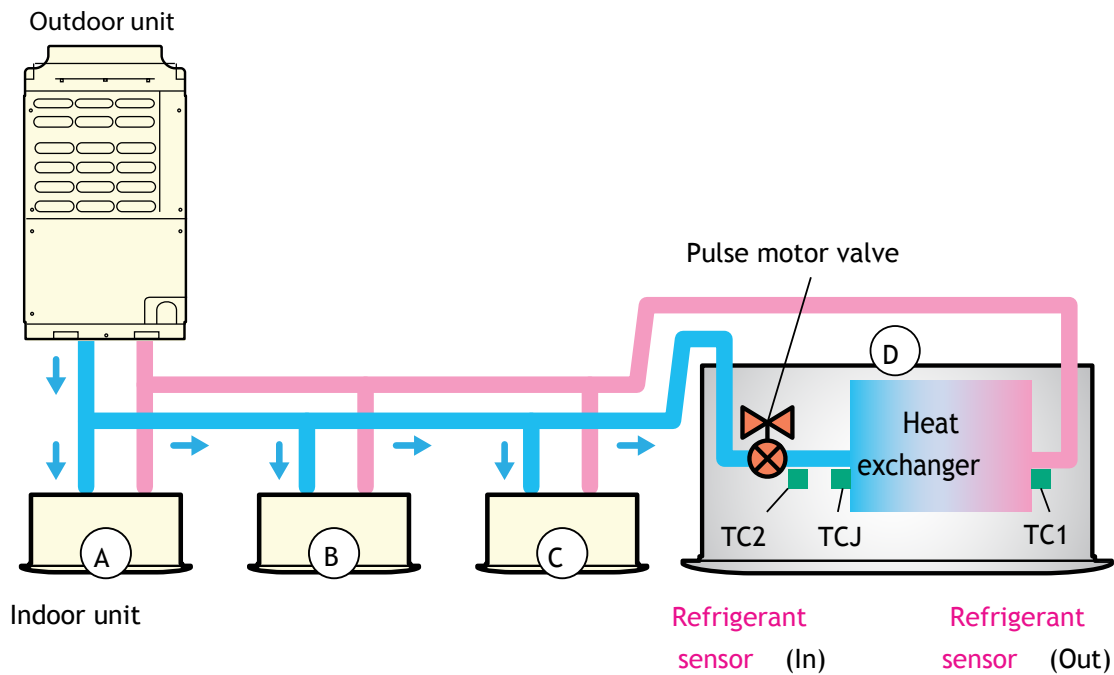
Heat exchangers are located on all four sides of the outdoor unit, ensuring air flow is equal in all directions.





Precise refrigerant flow

One of the keys to delivering precision refrigerant flow and enhanced comfort is the Toshiba Carrier pulse motor valve (PMV) control. The PMV control prevents refrigerant from flowing to indoor units that are not operating. The system reduces bypass loss and achieves tighter control over the compressor capacity of the outdoor unit.





Connectable no. of indoor unit

New line up for 0.6 HP indoor units

New capacity size increases the number of connectable indoor units in the system.



Compact 4-way cassette type



Slim duct type



High wall

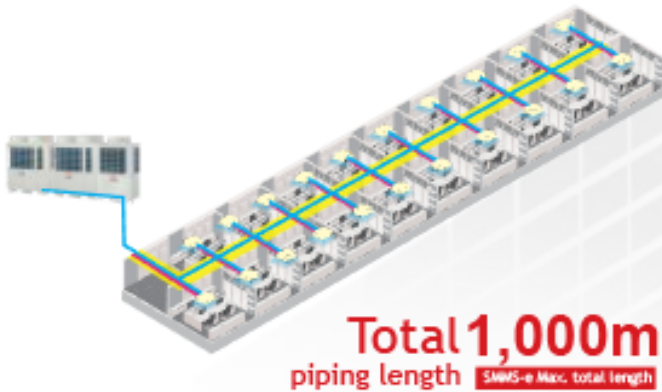
Type	kW HP	Cooling capacity													
		1.7 0.6	2.2 0.8	2.8 1.0	3.6 1.25	4.5 1.7	5.6 2.0	7.1 2.5	8.0 3.0	9.0 3.2	11.2 4.0	14.0 5.0	16.0 6.0	22.4 8.0	28.0 10.0
4-way air discharge cassette type		[Orange bar spanning from 2.2 to 16.0]													
Compact 4-way cassette type (600 x 600)		New	[Orange bar spanning from 2.2 to 7.1]												
2-way air discharge cassette type		[Orange bar spanning from 2.2 to 16.0]													
2-way air discharge cassette type		[Orange bar spanning from 2.2 to 11.2]													
Slim duct type		New	[Orange bar spanning from 2.2 to 8.0]												
Concealed duct high static pressure type		[Orange bar spanning from 5.6 to 16.0]													
Concealed duct high static pressure type		[Orange bar spanning from 16.0 to 28.0]													
Concealed duct type		[Orange bar spanning from 2.2 to 16.0]													
Ceiling type		[Orange bar spanning from 4.5 to 16.0]													
High wall type Series 3		[Orange bar spanning from 4.5 to 8.0]													
High wall type Series 4		New	[Orange bar spanning from 2.2 to 4.5]												
Floor standing concealed type		[Orange bar spanning from 2.2 to 7.1]													
Floor standing cabinet type		[Orange bar spanning from 2.2 to 7.1]													
Console type		[Orange bar spanning from 2.2 to 5.6]													
Floor standing type		[Orange bar spanning from 5.6 to 16.0]													



Piping design flexibility

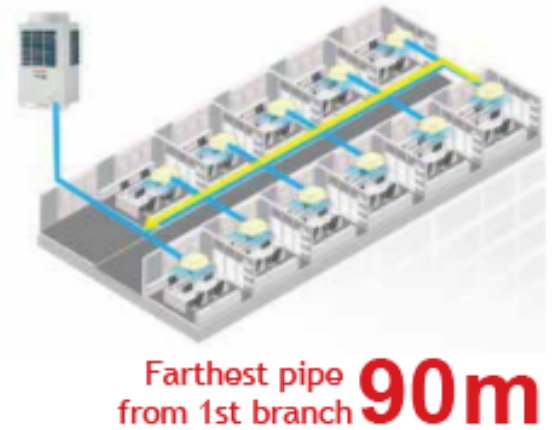
Total piping length

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



Farthest pipe from 1st branch

Even more convenient with the piping distance from the first branch to the furthest indoor unit at 90 meters, increasing the flexibility of the installation within the hotel or office building.



Farthest equivalent length

The maximum equivalent distance between outdoor unit and farthest indoor unit tops at 235 meters, which tops the industry class.



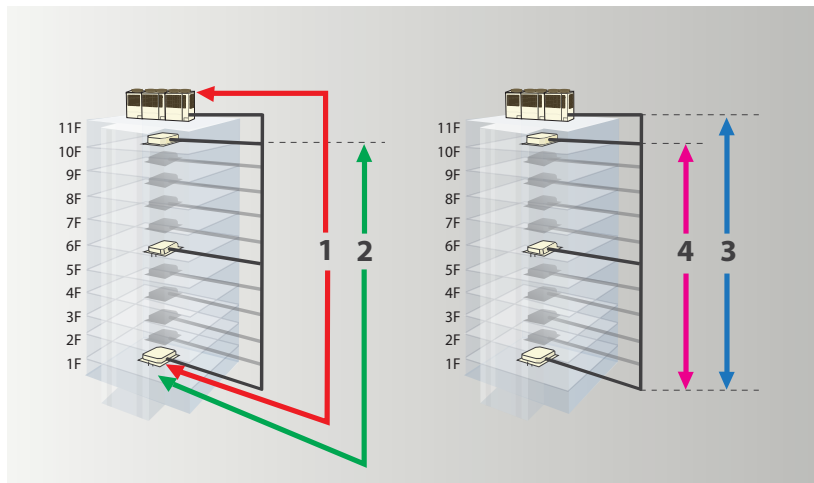
Height between indoor units

Another industry's top class is a maximum vertical distance between indoor units which reaches up to 40 meters, equal to an entire 11-storied building. SMMS-e's enhanced piping capabilities result in more benefits for the system design, installation flexibility, as well as the less installation cost.



Piping capabilities summary

Piping capability can provide more benefits for the system design, the installation flexibility, and the installation cost.



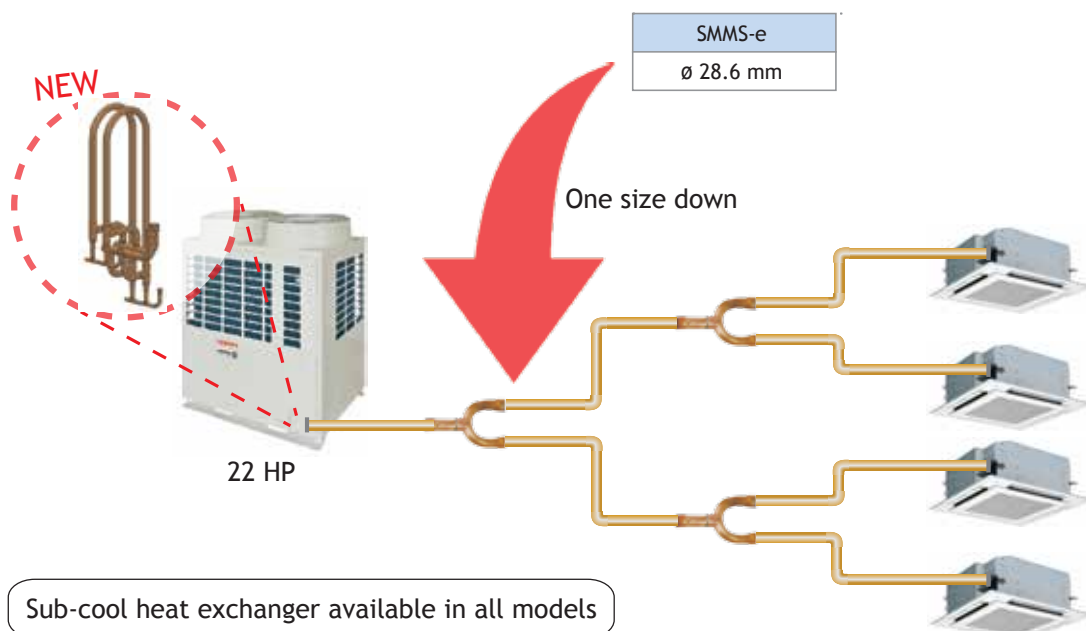
Total length	1,000m*
1. Farthest equivalent length	235m
2. Farthest pipe from 1st branch	90m**
3. Height between outdoor unit - indoor unit (outdoor unit above/below)	90m***/40m
4. Height between indoor unit - indoor unit	40m

- * : 34HP combination or more
- ** : 65m if the height piping length between outdoor unit and indoor unit is more than 3m
- *** : Be sure to refer to local sales person for details of these conditions and requirements.

Slimmer pipe size

Piping saving costs

With the sub-cool heat exchanger less refrigerant is needed therefore now it is possible to use smaller pipes and save in installation costs.



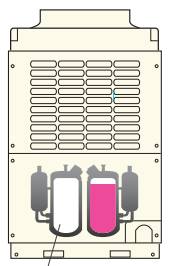


Reliability

Backup operation

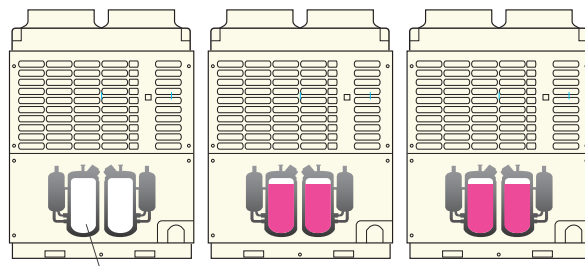
In case of a compressor failure, SMMS-e can keep working with the backup operation under All Inverter Control to compensate a failed compressor or header unit. This backup operation is available in both a single system or as a module.

Single outdoor unit backup



Failed compressor

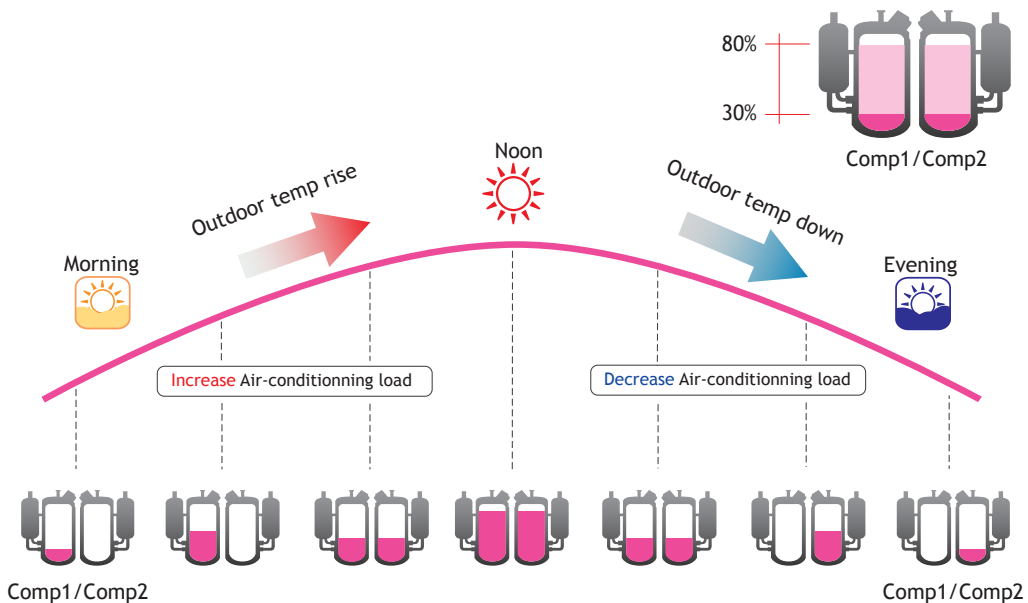
Module outdoor unit backup



Failed outdoor unit

Reliability rotational control

The rotational control in SMMS-e is designed to improve system reliability by controlling the operation of each compressor to work equally under variable conditions.



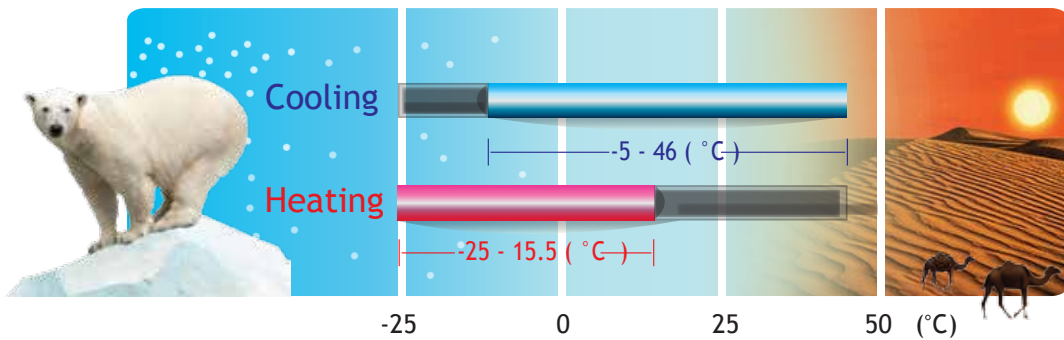


Operating temperature range

Outdoor temperature range

Utilizing the newly designed compressor, SMMS-e can operate under the wider range of outdoor ambience with the expansion of cooling and heating temperature from -25°C to 46°C.

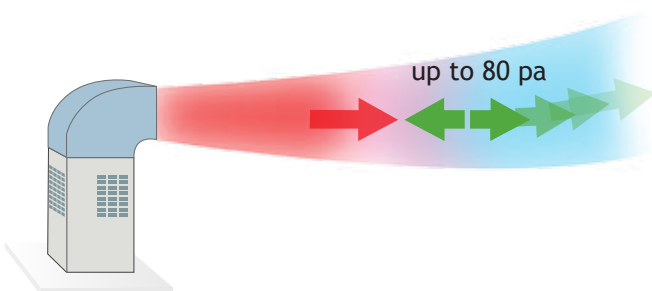
Operation ambient temperature expansion
(Cooling: CDB, Heating: CWB)



Note : Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

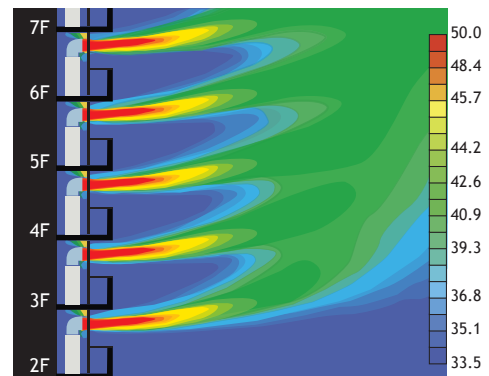
The external static pressure

In case of a compressor failure, SMMS-e can keep working with the backup operation under All Inverter Control to compensate a failed compressor or header unit. This backup operation is available in both a single system or as a module.

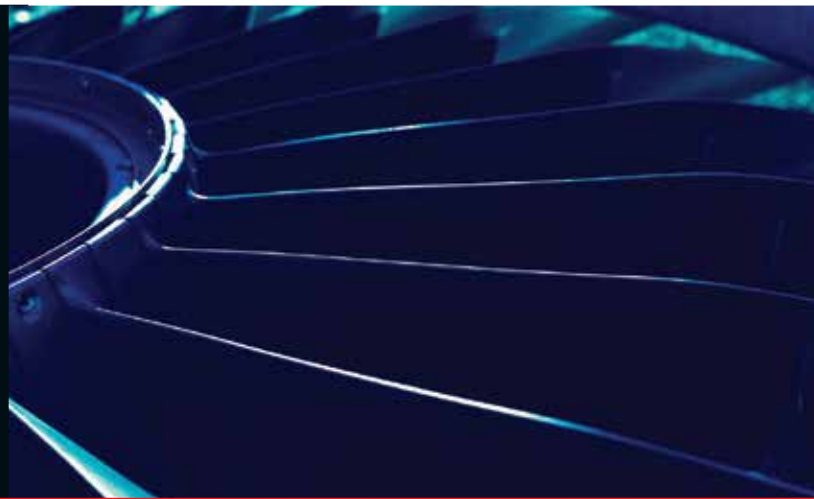


Note: For ESP consult to local sales person.

Air flow simulation diagram



Note : This result is analytical simulation, that does not guarantee actual temperatures.





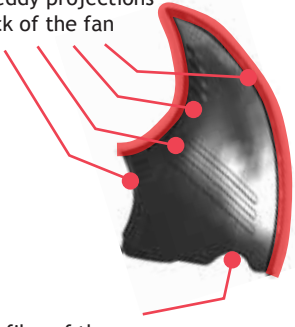


Propeller fan

New advanced blade shapes for a better air flow management

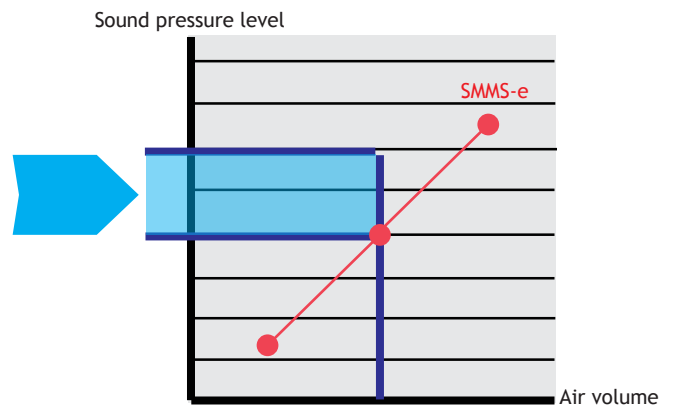
Every single blade is designed with a unique profile, a solution that guarantees a smoother air flow without turbulences. The new propeller deliver the same amount of air with less sound pressure level.



Each blade has a unique profile	Design improvements
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>A</p>  </div> <div style="text-align: center;"> <p>B</p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>C</p>  </div> <div style="text-align: center;"> <p>D</p>  </div> </div>	<p>New anti-eddy projections on the back of the fan</p>  <p>New profiles of the reverse-arc shaped wings</p>

More quiet in comparison with the previous fan

In the same working condition the new design of the propeller ensure a reduction of 1.5 dB compared to the previous models

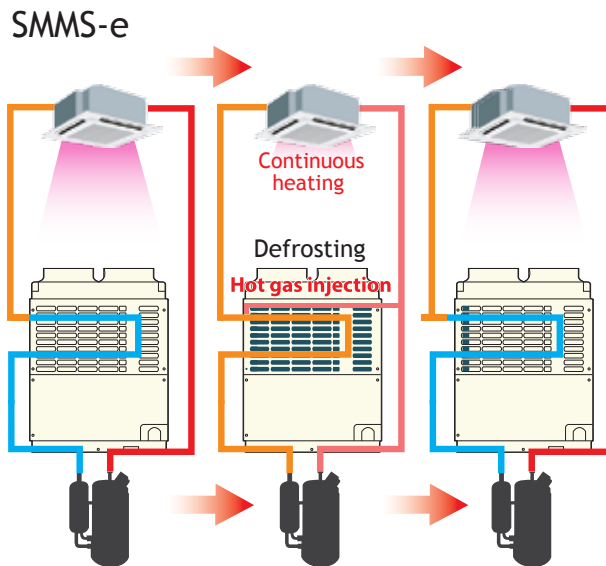




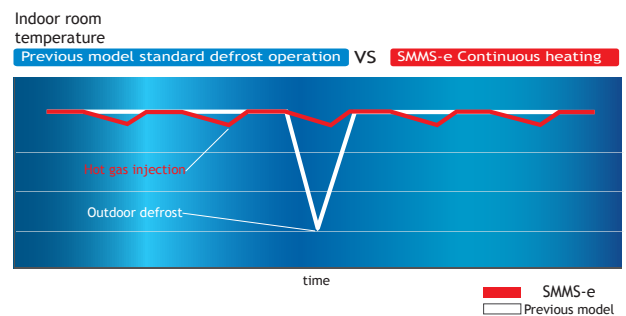
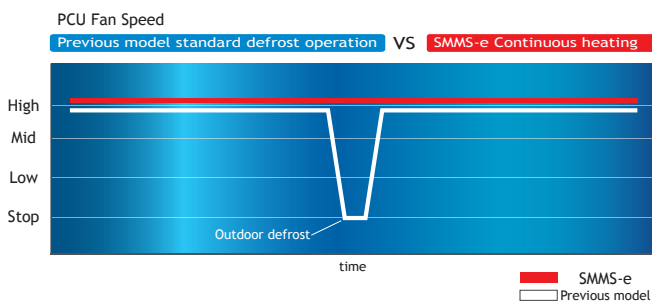
Continuous heating

New design and control logic

Enable continuous heating during defrost operation



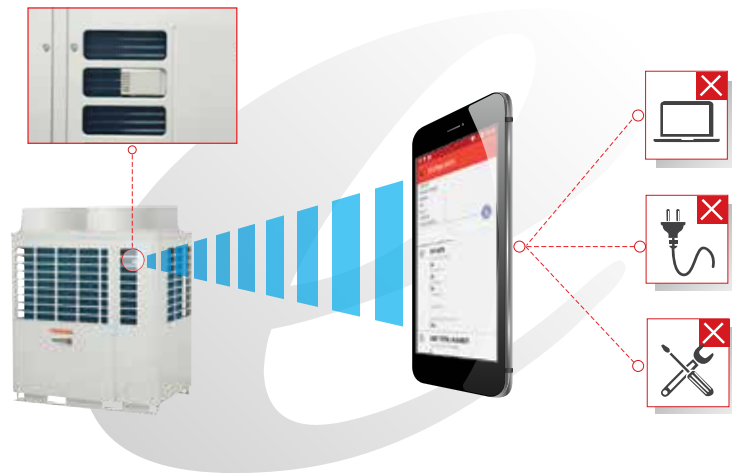
Hot gas bypass into the outdoor unit heat exchanger enables the indoor units to operate in heating mode for longer periods of time when compared to the previous model. Hot gas injection can be used also to identify the amount of frosting on the outdoor coil, so that outdoor defrosts occur only when absolutely required.





SMMS wave tool

With SMMS wave Tool, you can read and write data from outdoor unit directly on your smart phone without the needs of connecting PC or opening cabinet.



By the new smart phone application, the testing and commissioning can be done without opening the cabinet.



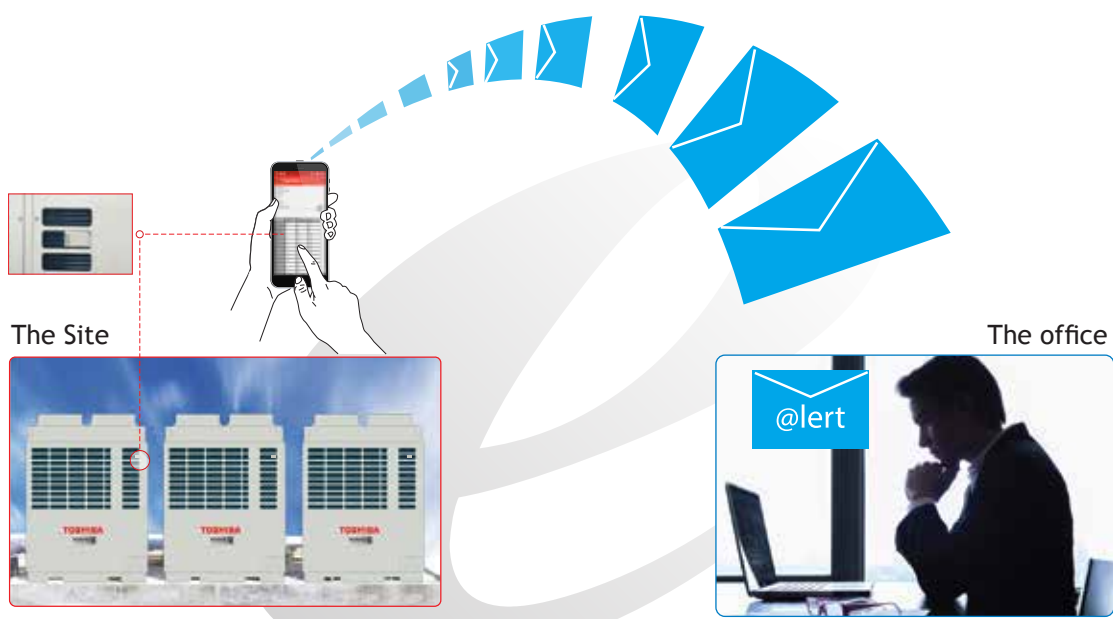
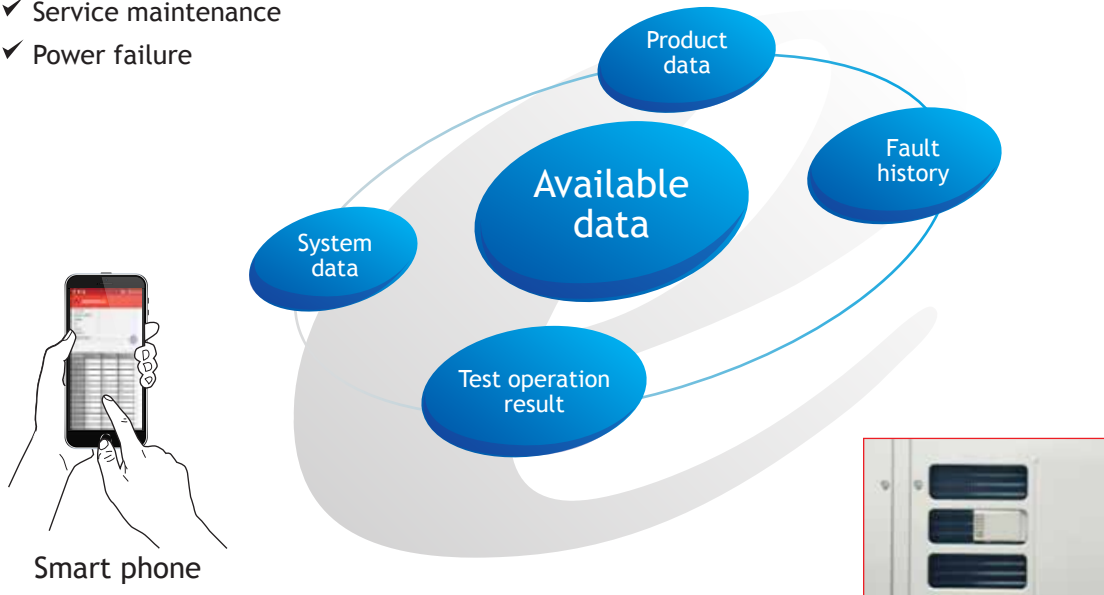
*Smartphone specification : Android™ OS 5.0

Available data

Whether the product data, system data, fault history or testing and commissioning, all can be obtained easily even in case of under service maintenance or power failure. The data can be easily sent to the distant office via email. Possible to receive system data by e-mail without moving from your office and the operation conditions can be checked in the office.




In case of below situation


- ✓ Installation
- ✓ Service maintenance
- ✓ Power failure





Outdoor units

Standard model

								
Capacity	8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP
Model Name (MMY-)	MAP0806HT8P-E	MAP1006HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1606HT8P-E	MAP1806HT8P-E	MAP2006HT8P-E	MAP2206HT8P-E
Cooling capacity (kW)	22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5
Heating capacity (kW)	25.0	31.5	37.5	45.0	50.0	56.0	63.0	64.0
No's of connectable Indoor units	18	22	27	31	36	40	45	49

								
Capacity	24HP	26HP	28HP	30HP	32HP	34HP	36HP	38HP
Model Name (MMY-)	AP2416HT8P-E	AP2616HT8P-E	AP2816HT8P-E	AP3016HT8P-E	AP3216HT8P-E	AP3416HT8P-E	AP3616HT8P-E	AP3816HT8P-E
Units in combination	MMY-MAP1206HT8P-E MMY-MAP1206HT8P-E	MMY-MAP1406HT8P-E MMY-MAP1206HT8P-E	MMY-MAP1606HT8P-E MMY-MAP1206HT8P-E	MMY-MAP1606HT8P-E MMY-MAP1406HT8P-E	MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E	MMY-MAP1806HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2006HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2206HT8P-E MMY-MAP1606HT8P-E
Cooling capacity (kW)	67.0	73.5	78.5	85.0	90.0	95.4	101.0	106.5
Heating capacity (kW)	75.0	82.5	87.5	95.0	100.0	106.0	113.0	114.0
No's of connectable Indoor units	54	58	63	64	64	64	64	64

						
Capacity	40HP	42HP	44HP	46HP	48HP	
Model Name (MMY-)	AP4016HT8P-E	AP4216HT8P-E	AP4416HT8P-E	AP4616HT8P-E	AP4816HT8P-E	
Units in combination	MMY-MAP2006HT8P-E MMY-MAP2006HT8P-E	MMY-MAP2206HT8P-E MMY-MAP2006HT8P-E	MMY-MAP2206HT8P-E MMY-MAP2206HT8P-E	MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E MMY-MAP1406HT8P-E	MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E	
Cooling capacity (kW)	112.0	117.5	123.0	130.0	135.0	
Heating capacity (kW)	126.0	127.0	128.0	145.0	150.0	
No's of connectable Indoor units	64	64	64	64	64	

						
Capacity	50HP	52HP	54HP	56HP	58HP	60HP
Model Name (MMY-)	AP5016HT8P-E	AP5216HT8P-E	AP5416HT8P-E	AP5616HT8P-E	AP5816HT8P-E	AP6016HT8P-E
Units in combination	MMY-MAP1806HT8P-E MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2006HT8P-E MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2206HT8P-E MMY-MAP1606HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2006HT8P-E MMY-MAP2006HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2206HT8P-E MMY-MAP2006HT8P-E MMY-MAP1606HT8P-E	MMY-MAP2206HT8P-E MMY-MAP2206HT8P-E MMY-MAP1606HT8P-E
Cooling capacity (kW)	140.4	146.0	151.5	157.0	162.5	168.0
Heating capacity (kW)	156.0	163.0	164.0	176.0	177.0	178.0
No's of connectable Indoor units	64	64	64	64	64	64

* Power: 3-phase 50 Hz 400V (380 - 415V)





* The source voltage must not fluctuate more than ±10%.

* Rated conditions


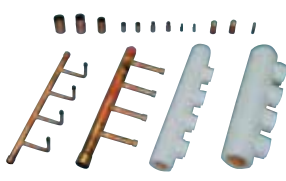

Cooling: Indoor air temperature 27°C DB/19°C WB, outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, outdoor air temperature 7°C DB/6°C WB

High efficiency/heating capacity priority model

										
Capacity	20HP		22HP		36HP		38HP		40HP	
Model Name (MMY-)	AP2026HT8P-E		AP2226HT8P-E		AP3626HT8P-E		AP3826HT8P-E		AP4026HT8P-E	
Units in combination	MMY-MAP1006HT8P-E MMY-MAP1006HT8P-E		MMY-MAP1206HT8P-E MMY-MAP1006HT8P-E		MMY-MAP1206HT8P-E MMY-MAP1206HT8P-E MMY-MAP1206HT8P-E		MMY-MAP1406HT8P-E MMY-MAP1206HT8P-E MMY-MAP1206HT8P-E		MMY-MAP1406HT8P-E MMY-MAP1406HT8P-E MMY-MAP1206HT8P-E	
Cooling capacity (kW)	56.0		61.5		100.5		107.0		113.5	
Heating capacity (kW)	63.0		69.0		112.5		120.0		127.5	
No's of connectable Indoor units	45		49		64		64		64	

												
Capacity	42HP				44HP				54HP			
Model Name (MMY-)	AP4226HT8P-E				AP4426HT8P-E				AP5426HT8P-E			
Units in combination	MMY-MAP1406HT8P-E MMY-MAP1406HT8P-E MMY-MAP1406HT8P-E				MMY-MAP1606HT8P-E MMY-MAP1406HT8P-E MMY-MAP1406HT8P-E				MMY-MAP2006HT8P-E MMY-MAP2006HT8P-E MMY-MAP1406HT8P-E			
Cooling capacity (kW)	120.0				125.0				152.0			
Heating capacity (kW)	135.0				140.0				171.0			
No's of connectable Indoor units	64				64				64			

												
Appearance					(4-branch headers)							
Model name	RBM-BY55E	RBM-BY105E	RBM-BY205E	RBM-BY305E	RBM-HY1043E	RBM-HY2043E	RBM-HY1083E	RBM-HY2083E	RBM-BT14E		RBM-BT24E	
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	16HP	
Model name	Heat Pump	(MMY-)	MAP0806HT8P-E	MAP1006HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1606HT8P-E	
Outdoor unit type			Inverter					
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V)					
Cooling (*2)	Capacity 100%		(kW)	22.4	28.0	33.5	40.0	45.0
	Power consumption		(kW)	5.54	7.69	10.0	12.3	14.3
	EER (Energy Efficiency Ratio)	Capacity 100%		4.04	3.64	3.35	3.24	3.12
		Capacity 80%		4.97	4.47	4.23	4.21	4.01
		Capacity 50%		6.40	6.22	5.86	5.70	5.64
ESEER			7.55	7.45	7.7	7.42	7.58	
Heating (*2)	Capacity 100%		(kW)	25.0	31.5	37.5	45.0	50.0
	Power consumption		(kW)	5.53	7.41	9.65	11.2	12.9
	COP (Efficiency of Performance)	Capacity 100%		4.52	4.25	3.89	4.02	3.88
		Capacity 80%		5.52	5.20	4.63	4.92	4.63
		Capacity 50%		6.44	6.01	5.43	5.78	5.56
External dimensions (Height / Width / Depth)			(mm)	1,830 / 990 / 780	1,830 / 990 / 780	1,830 / 990 / 780	1,830 / 1,210 / 780	1,830 / 1,210 / 780
Total weight			(kg)	242	242	242	300	300
Compressor	Motor output		(kW)	2.1 x 2	3.1 x 2	3.9 x 2	4.8 x 2	5.8 x 2
Fan unit	Motor output		(kW)	1.0	1.0	1.0	1.0	1.0
	Air volume		(m ³ /h)	9,700	9,700	12,200	12,200	12,600
Refrigerant piping	Main pipe diameter	Gas side	(mm)	ø 19.1	ø 22.2	ø 28.6	ø 28.6	ø 28.6
		Liquid side	(mm)	ø 12.7	ø 12.7	ø 12.7	ø 15.9	ø 15.9
		Balance pipe	(mm)	ø 9.5	ø 9.5	ø 9.5	ø 9.5	ø 9.5
Sound pressure level (Cooling/Heating)			(dB(A))	55/56	57/58	59/61	60/62	62/64
Sound power level (Cooling/Heating)			(dB(A))	74/74	74/74	80/82	80/82	81/83
Connectable indoor units			(nos)	18	22	27	31	36

Standard model (Single unit)			Technical specifications			
Equivalent HP			18HP	20HP	22HP	
Model name	Heat Pump	(MMY-)	MAP1806HT8P-E	MAP2006HT8P-E	MAP2206HT8P-E	
Outdoor unit type			Inverter			
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V)			
Cooling (*2)	Capacity 100%		(kW)	50.4	56.0	61.5
	Power consumption		(kW)	14.6	17.3	23.2
	EER (Energy Efficiency Ratio)	Capacity 100%		3.50	3.27	2.65
		Capacity 80%		4.25	4.03	3.49
		Capacity 50%		5.50	5.61	5.35
ESEER			7.25	7.17	7.10	
Heating (*2)	Capacity 100%		(kW)	56.0	63.0	64.0
	Power consumption		(kW)	14.1	17.0	17.1
	COP (Efficiency of Performance)	Capacity 100%		3.96	3.71	3.80
		Capacity 80%		4.62	4.29	4.36
		Capacity 50%		5.35	5.05	5.07
External dimensions (Height / Width / Depth)			(mm)	1,830/1,600/780	1,830/1,600/780	1,830/1,600/780
Total weight			(kg)	371	371	371
Compressor	Motor output		(kW)	6.5 x 2	7.6 x 2	9.0 x 2
Fan unit	Motor output		(kW)	2.0	2.0	2.0
	Air volume		(m ³ /h)	17,300	17,900	18,500
Refrigerant piping	Main pipe diameter	Gas side	(mm)	ø 28.6	ø 28.6	ø 28.6
		Liquid side	(mm)	ø 15.9	ø 15.9	ø 19.1
		Balance pipe	(mm)	ø 9.5	ø 9.5	ø 9.5
Sound pressure level (Cooling/Heating)			(dB(A))	60/61	61/62	61/62
Sound power level (Cooling/Heating)			(dB(A))	81/83	82/84	83/84
Connectable indoor units			(nos)	40	45	49

*1 The source voltage must not fluctuate more than ±10%.

*2 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
Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

*3 ESEER formula: EER at 35°C DB*0.03+EER at 30°C DB*0.33+EER at 25°C DB*0.41+EER at 20°C DB*0.23.

Outdoor unit specifications

Standard model (Combination)			Technical specifications					
Equivalent HP			24HP		26HP		28HP	
Model name	Heat Pump (MMY-)		AP2416HT8P-E		AP2616HT8P-E		AP2816HT8P-E	
Outdoor unit type			Inverter					
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model (MMY-)			MAP1206HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1206HT8P-E	MAP1606HT8P-E	MAP1206HT8P-E
Cooling (*2)	Capacity 100% (kW)		67.0		73.5		78.5	
	Power consumption (kW)		20.0		22.3		24.3	
	EER (Energy Efficiency Ratio)	Capacity 100%	3.35		3.30		3.23	
		Capacity 80%	4.23		4.22		4.10	
		Capacity 50%	5.86		5.77		5.73	
ESEER		7.71		7.55		7.64		
Heating (*2)	Capacity 100% (kW)		75.0		82.5		87.5	
	Power consumption (kW)		19.7		20.85		22.55	
	COP (Efficiency of Performance)	Capacity 100%	3.89		3.96		3.88	
		Capacity 80%	4.63		4.78		4.63	
		Capacity 50%	5.42		5.61		5.50	
Total weight (kg)			242	242	300	242	300	242
Compressor	Motor output (kW)		3.9 x 2	3.9 x 2	4.8 x 2	3.9 x 2	5.8 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	12,200	12,200	12,200	12,600	12,200
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 34.9		ø 34.9		ø 34.9	
		Liquid side (mm)	ø 19.1		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))			62/64		62.5/64.5		64/66	
Sound power level (Cooling/Heating) (dB(A))			83/85		83/85		83.5/85.5	
Connectable indoor units (nos)			54		58		63	

Standard model (Combination)			Technical specifications					
Equivalent HP			30HP		32HP		34HP	
Model name	Heat Pump (MMY-)		AP3016HT8P-E		AP3216HT8P-E		AP3416HT8P-E	
Outdoor unit type			Inverter					
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model (MMY-)			MAP1606HT8P-E	MAP1406HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1806HT8P-E	MAP1606HT8P-E
Cooling (*2)	Capacity 100% (kW)		85.0		90.0		95.4	
	Power consumption (kW)		26.6		28.6		28.9	
	EER (Energy Efficiency Ratio)	Capacity 100%	3.20		3.15		3.30	
		Capacity 80%	4.10		4.01		4.13	
		Capacity 50%	5.67		5.64		5.56	
ESEER		7.51		7.59		7.40		
Heating (*2)	Capacity 100% (kW)		95.0		100.0		106.0	
	Power consumption (kW)		24.1		25.8		27.0	
	COP (Efficiency of Performance)	Capacity 100%	3.94		3.88		3.93	
		Capacity 80%	4.76		4.63		4.63	
		Capacity 50%	5.66		5.56		5.48	
Total weight (kg)			300	300	300	300	371	300
Compressor	Motor output (kW)		5.8 x 2	4.8 x 2	5.8 x 2	5.8 x 2	6.5 x 2	5.8 x 2
Fan unit	Motor output (kW)		1.0	1.0	1.0	1.0	2.0	1.0
	Air volume (m ³ /h)		12,600	12,200	12,600	12,600	17,300	12,600
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 34.9		ø 34.9		ø 34.9	
		Liquid side (mm)	ø 19.1		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))			64.5/66.5		65/67		64.5/66.0	
Connectable indoor units (nos)			64		64		64	

*1 The source voltage must not fluctuate more than ±10%.

*2 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
 BBased on equivalent piping length of 7.5 m and piping height difference of 0 m.

*3 ESEER formula: EER at 35 °C DB*0.03+EER at 30 °C DB*0.33+EER at 25 °C DB*0.41+EER at 20 °C DB *0.23.

Outdoor unit specifications

Standard model (Combination)

Technical specifications

Equivalent HP		36HP		38HP		40HP		
Model name	Heat Pump (MMY-)	AP3616HT8P-E		AP3816HT8P-E		AP4016HT8P-E		
Outdoor unit type		Inverter						
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)						
Outdoor unit model (MMY-)		MAP2006HT8P	MAP1606HT8P	MAP2206HT8P	MAP1606HT8P	MAP2006HT8P	MAP2006HT8P	
Cooling (*2)	Capacity 100% (kW)	101.0		106.5		112.0		
	Power consumption (kW)	31.6		37.5		34.6		
	EER (Energy Efficiency Ratio)	Capacity 100%	3.20		2.84		3.24	
		Capacity 80%	4.02		3.69		4.03	
		Capacity 50%	5.49		5.46		5.38	
ESEER	7.35		7.3		7.17			
Heating (*2)	Capacity 100% (kW)	113.0		114.0		126.0		
	Power consumption (kW)	29.9		30.0		34.0		
	COP (Efficiency of Performance)	Capacity 100%	3.78		3.8		3.71	
		Capacity 80%	4.44		4.48		4.29	
		Capacity 50%	5.26		5.27		5.05	
Total weight (kg)	371		300		371		371	
Compressor	Motor output (kW)	7.6 x 2	5.8 x 2	9.0 x 2	5.8 x 2	7.6 x 2	7.6 x 2	
Fan unit	Motor output (kW)	2.0	1.0	2.0	1.0	2.0	2.0	
	Air volume (m ³ /h)	17,900	12,600	18,500	12,600	17,900	17,900	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3		ø 41.3		ø 41.3	
		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))		64.5/66.5		64.5/66.5		64/65		
Sound power level (Cooling/Heating) (dB(A))		84.5/86.5		85.5/86.5		85/87		
Connectable indoor units (nos)		64		64		64		

Standard model (Combination)

Technical specifications

Equivalent HP		42HP		44HP		46HP		48HP		
Model name	Heat Pump (MMY-)	AP4216HT8P-E		AP4416HT8P-E		AP4616HT8P-E		AP4816HT8P-E		
Outdoor unit type		Inverter								
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)								
Outdoor unit model (MMY-)		MAP2206HT8P-E	MAP2006HT8P-E	MAP2206HT8P-E	MAP2206HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1406HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E
Cooling (*2)	Capacity 100% (kW)	117.5		123.0		130.0		135.0		
	Power consumption (kW)	40.5		40.5		40.9		42.9		
	EER (Energy Efficiency Ratio)	Capacity 100%	2.90		2.65		3.18		3.15	
		Capacity 80%	3.73		3.49		4.07		4.01	
		Capacity 50%	5.36		5.34		5.66		5.64	
ESEER	7.13		7.11		7.53		4.59			
Heating (*2)	Capacity 100% (kW)	127.0		128.0		145.0		150.0		
	Power consumption (kW)	34.1		34.2		37.0		38.7		
	COP (Efficiency of Performance)	Capacity 100%	3.72		3.74		3.92		3.88	
		Capacity 80%	4.33		4.36		4.72		4.63	
		Capacity 50%	5.06		5.07		5.62		5.56	
Total weight (kg)	371		371		300		300		300	
Compressor	Motor output (kW)	9.0 x 2	7.6 x 2	9.0 x 2	9.0 x 2	5.8 x 2	5.8 x 2	4.8 x 2	5.8 x 2	4.8 x 2
Fan unit	Motor output (kW)	2.0	2.0	2.0	2.0	1.0	1.0	1.0	1.0	1.0
	Air volume (m ³ /h)	18,500	17,900	18,500	18,500	12,600	12,600	12,600	12,600	12,600
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3		ø 41.3		ø 41.3		ø 41.3	
		Liquid side (mm)	ø 22.2		ø 22.2		ø 22.2		ø 22.2	
		Balance pipe (mm)	ø 9.5		ø 9.5		ø 9.5		ø 9.5	
Sound pressure level (Cooling/Heating) (dB(A))		64/65		64/65		66.5/68.5		67/69		
Sound power level (Cooling/Heating) (dB(A))		85.5/87		86/87		85.5/87.5		86/88		
Connectable indoor units (nos)		64		64		64		64		

*1 The source voltage must not flucture more than ±10%.

*2 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

The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.

*3 ESEER formula: EER at 35 °C DB*0.03+EER at 30 °C DB*0.33+EER at 25 °C DB*0.41+EER at 20 °C DB *0.23.

Outdoor unit specifications

Standard model (Combination)

Technical specifications

Equivalent HP		50HP									52HP			54HP		
Model name	Heat Pump (MMY-)	AP5016HT8P-E									AP5216HT8P-E			AP5416HT8P-E		
Outdoor unit type		Inverter														
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)														
Outdoor unit model (MMY-)		MAP1806HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP2006HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP2206HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	MAP1606HT8P-E	
Cooling (*2)	Capacity 100% (kW)	140.4			146.0			151.5								
	Power consumption (kW)	43.2			45.9			51.8								
	EER (Energy Efficiency Ratio)	Capacity 100%	3.25			3.18			2.92							
		Capacity 80%	4.09			4.02			3.78							
		Capacity 50%	5.59			5.54			5.52							
ESEER	7.46			7.42			7.38									
Heating (*2)	Capacity 100% (kW)	156.0			163.0			164.0								
	Power consumption (kW)	39.9			42.8			42.9								
	COP (Efficiency of Performance)	Capacity 100%	3.91			3.81			3.82							
		Capacity 80%	4.63			4.49			4.52							
		Capacity 50%	5.50			5.35			5.35							
Total weight (kg)	371	300	300	371	300	300	371	300	300							
Compressor	Motor output (kW)	6.5 x 2	5.8 x 2	5.8 x 2	7.6 x 2	5.8 x 2	5.8 x 2	9.0 x 2	5.8 x 2	5.8 x 2						
Fan unit	Motor output (kW)	2.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0	1.0						
	Air volume (m ³ /h)	17,300	12,600	12,600	17,900	12,600	12,600	18,500	12,600	12,600						
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3			ø 41.3							
		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			66.5/68.5			66.5/68.5								
Sound power level (Cooling/Heating) (dB(A))		86/88			86.5/88.5			86.5/88.5								
Connectable indoor units (nos)		64			64			64								

Standard model (Combination)

Technical specifications

Equivalent HP		56HP			58HP			60HP			
Model name	Heat Pump (MMY-)	AP5616HT8P-E			AP5816HT8P-E			AP6016HT8P-E			
Outdoor unit type		Inverter									
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model (MMY-)		MAP2006HT8P-E	MAP2006HT8P-E	MAP1606HT8P-E	MAP2206HT8P-E	MAP2006HT8P-E	MAP1606HT8P-E	MAP2206HT8P-E	MAP2206HT8P-E	MAP1606HT8P-E	
Cooling (*2)	Capacity 100% (kW)	157.0			162.5			168.0			
	Power consumption (kW)	48.9			54.8			60.7			
	EER (Energy Efficiency Ratio)	Capacity 100%	3.21			2.97			2.77		
		Capacity 80%	4.02			3.8			3.62		
		Capacity 50%	5.45			5.43			5.42		
ESEER	7.28			7.25			7.23				
Heating (*2)	Capacity 100% (kW)	176.0			177.0			178.0			
	Power consumption (kW)	46.9			47.0			47.1			
	COP (Efficiency of Performance)	Capacity 100%	3.75			3.77			3.78		
		Capacity 80%	4.38			4.41			4.43		
		Capacity 50%	5.18			5.19			5.20		
Total weight (kg)	371	371	300	371	371	300	371	371	300		
Compressor	Motor output (kW)	7.6 x 2	7.6 x 2	5.8 x 2	9.0 x 2	7.6 x 2	5.8 x 2	9.0 x 2	9.0 x 2	5.8 x 2	
Fan unit	Motor output (kW)	2.0	2.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	
	Air volume (m ³ /h)	17,900	17,900	12,600	18,500	17,900	12,600	18,500	18,500	12,600	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3			ø 41.3		
		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))		66.5/67.5			66.5/67.5			66.5/67.5			
Sound power level (Cooling/Heating) (dB(A))		86.5/88.5			87/88.5			87.5/88.5			
Connectable indoor units (nos)		64			64			64			

*1 The source voltage MUST not flucture more than ±10%.

*2 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

The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.

*3 ESEER formula: EER at 35 °C DB*0.03+EER at 30 °C DB*0.33+EER at 25 °C DB*0.41+EER at 20 °C DB *0.23.

Outdoor unit specifications

High efficiency / Heating capacity priority model (Combination)

Technical specifications

Equivalent HP		20HP			22HP		36HP			
Model name	Heat Pump (MMY-)	AP2026HT8P-E			AP2226HY8P-E		AP3626HY8P-E			
Outdoor unit type		Inverter								
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)								
Outdoor unit model (MMY-)		MAP1006HT8P-E	MAP1006HT8P-E	MAP1206HT8P-E	MAP1006HT8P-E	MAP1206HT8P-E	MAP1206HT8P-E	MAP1206HT8P-E	MAP1206HT8P-E	
Cooling (*2)	Capacity 100% (kW)	56.0			61.5		100.5			
	Power consumption (kW)	15.38			17.69		30.00			
	EER (Energy Efficiency Ratio)	Capacity 100%	3.64			3.48		3.35		
		Capacity 80%	4.47			4.34		4.23		
		Capacity 50%	6.21			6.02		5.86		
ESEER	7.45			7.56		7.71				
Heating (*2)	Capacity 100% (kW)	63.0			69.0		112.5			
	Power consumption (kW)	14.7			17.06		29.0			
	COP (Efficiency of Performance)	Capacity 100%	4.25			4.04		3.89		
		Capacity 80%	5.20			4.87		4.63		
		Capacity 50%	5.98			5.66		5.42		
Total weight (kg)	242	242	242	242	242	242	242	242		
Compressor	Motor output (kW)	3.1 x 2	3.1 x 2	3.9 x 2	3.1 x 2	3.9 x 2	3.9 x 2	3.9 x 2		
Fan unit	Motor output (kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
	Air volume (m ³ /h)	9,700	9,700	12,200	9,700	12,200	12,200	12,200		
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 28.6			ø 28.6		ø 41.3		
		Liquid side (mm)	ø 15.9			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))		60/61			61.5/63		64/66			
Sound power level (Cooling/Heating) (dB(A))		77/77			81/83		85/87			
Connectable indoor units (nos)		45			49		64			

High efficiency / Heating capacity priority model (Combination)

Technical specifications

Equivalent HP		38HP			40HP			42HP			
Model name	Heat Pump (MMY-)	AP3826HT8P-E			AP4026HT8P-E			AP4226HT8P-E			
Outdoor unit type		Inverter									
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model (MMY-)		MAP1406HT8P-E	MAP1206HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1406HT8P-E	MAP1206HT8P-E	MAP1406HT8P-E	MAP1406HT8P-E		
Cooling (*2)	Capacity 100% (kW)	107.0			113.5			120.0			
	Power consumption (kW)	32.3			34.6			36.9			
	EER (Energy Efficiency Ratio)	Capacity 100%	3.31			3.28			3.25		
		Capacity 80%	4.22			4.22			4.21		
		Capacity 50%	5.8			5.75			5.70		
ESEER	7.6			7.51			7.42				
Heating (*2)	Capacity 100% (kW)	120.0			127.5			135.0			
	Power consumption (kW)	30.5			32.1			33.6			
	COP (Efficiency of Performance)	Capacity 100%	3.93			3.98			4.02		
		Capacity 80%	4.73			4.83			4.92		
		Capacity 50%	5.55			5.67			5.78		
Total weight (kg)	300	242	242	300	300	242	300	300			
Compressor	Motor output (kW)	4.8 x 2	3.9 x 2	3.9 x 2	4.8 x 2	4.8 x 2	3.9 x 2	4.8 x 2			
Fan unit	Motor output (kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
	Air volume (m ³ /h)	12,200	12,200	12,200	12,200	12,200	12,200	12,200			
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3		ø 41.3			
		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))		64.5/66.5			64.5/66.5			65/67			
Sound power level (Cooling/Heating) (dB(A))		85/87			85/87			85/87			
Connectable indoor units (nos)		64			64			64			

*1 The source voltage must not fluctuate more than ±10%.

*2 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

The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.

*3 ESEER formula: EER at 35°C DB*0.03+EER at 30°C DB*0.33+EER at 25°C DB*0.41+EER at 20°C DB *0.23.

Outdoor unit specifications

High efficiency / Heating capacity priority model (Combination)

Technical specifications

Equivalent HP		44HP			54HP			
Model name	Heat Pump (MMY-)	AP4426HT8P-E			AP5426HT8P-E			
Outdoor unit type		Inverter						
Power supply (*1)		3phase 4wires 50Hz 400V (380-415V)						
Outdoor unit model (MMY-)		MAP1606HT8P-E	MAP1406HT8P-E	MAP1406HT8P-E	MAP2006HT8P-E	MAP2006HT8P-E	MAP1406HT8P-E	
Cooling (*2)	Capacity 100%	125.0			152.0			
	Power consumption	38.9			46.9			
	EER (Energy Efficiency Ratio)	Capacity 100%	3.21			3.24		
		Capacity 80%	4.14			4.08		
		Capacity 50%	5.68			5.46		
ESEER	7.48			7.23				
Heating (*2)	Capacity 100%	140.0			171.0			
	Power consumption	35.3			45.2			
	COP (Efficiency of Performance)	Capacity 100%	3.97			3.78		
		Capacity 80%	4.81			4.44		
		Capacity 50%	5.7			5.22		
Total weight	(kg)	300	300	300	371	371	300	
Compressor	Motor output	(kW)	5.8 x 2	4.8 x 2	4.8 x 2	7.6 x 2	7.6 x 2	4.8 x 2
	Fan unit	Motor output	(kW)	1.0	1.0	1.0	2.0	2.0
Fan unit	Air volume	(m ³ /h)	12,600	12,200	12,200	17,900	17,900	12,200
	Refrigerant piping	Main pipe diameter	Gas side	ø 41.3			ø 41.3	
Liquid side			ø 22.2			ø 22.2		
Balance pipe			ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)		(dB(A))	65.5/67.5			65.5/67		
Sound power level (Cooling/Heating)		(dB(A))	85.5/87.5			86.5/88.5		
Connectable indoor units		(nos)	64			64		

*1 The source voltage must not fluctuate more than ±10%.

*2 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

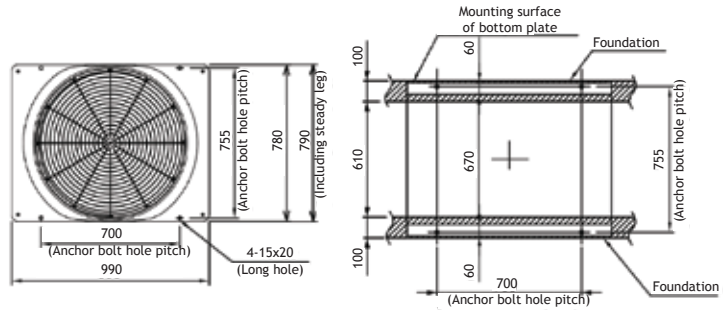
The standard piping means that main pipe length is 5m, branching pipe length is 2.5m of branch piping connected with a 0 meter height.

*3 ESEER formula: EER at 35°C DB*0.03+EER at 30°C DB*0.33+EER at 25°C DB*0.41+EER at 20°C DB *0.23.



Model : MMY-MAP0806HT8P-E
MMY-MAP1006HT8P-E
MMY-MAP1206HT8P-E

Model Name	ø A
MAP0806 type	ø 19.1
MAP1006 type	ø 22.2
MAP1206 type	ø 28.6



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.

Square hole (for freight handling) 2-60 x 200

Balance pipe connection port ø9.5

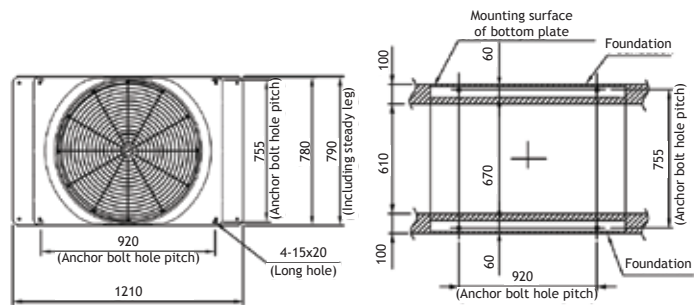
(*) Cutting position of L-shape pipe

Gas pipe connection port øA

Liquid pipe connection port ø12.7

(Unit:mm)

Model : MMY-MAP1406HT8P-E
MMY-MAP1606HT8P-E



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.

Square hole (for freight handling) 2-60 x 200

Balance pipe connection port ø9.5

(*) Cutting position of L-shape pipe

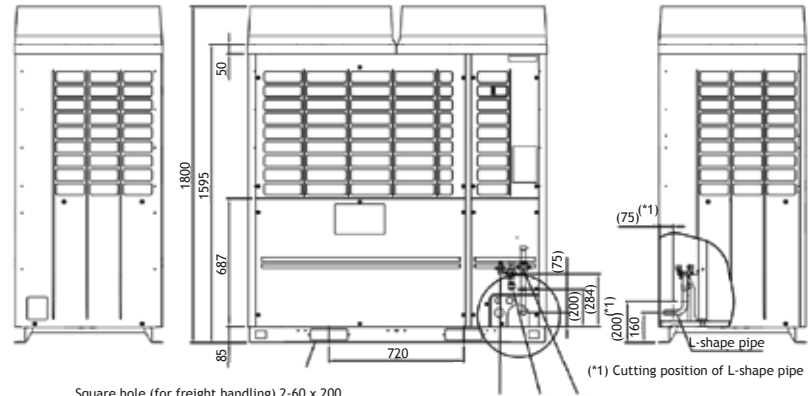
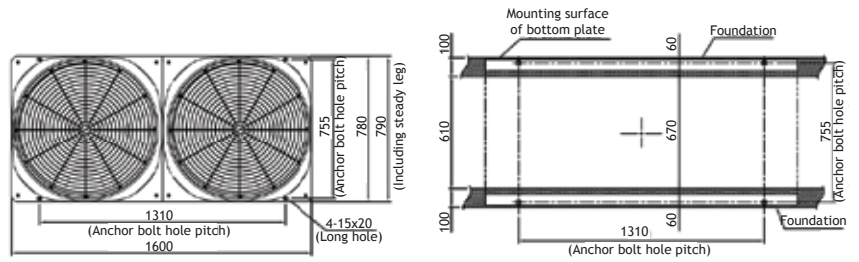
Gas pipe connection port ø28.6

Liquid pipe connection port ø15.9

(Unit:mm)

Model : MMY-MAP1806HT8P-E
MMY-MAP2006HT8P-E
MMY-MAP2206HT8P-E

Model Name	∅ A
MAP1806 type	∅ 15.9
MAP2006 type	∅ 15.9
MAP2206 type	∅ 19.1



Square hole (for freight handling) 2-60 x 200

Gas pipe connection port ∅28.6

Balance pipe connection port ∅9.5

Liquid pipe connection port ∅A

(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.



Indoor units line-up



Cooling capacity (HP equivalent)	4-way air discharge cassette type	Compact 4-way cassette (600 × 600) type	2-way air discharge cassette type	1-way air discharge cassette type	Slim duct type
005 type 1.7 kw (0.6HP)		MMU-AP0056MH-E			MMD-AP0056SPH-E
007 type 2.2 kw (0.8HP)		MMU-AP0076MH-E	MMU-AP0072MH-E	MMU-AP0074YH-E	MMD-AP0074SPH-E
009 type 2.8 kw (1HP)	MMU-AP0094HP-E	MMU-AP0096MH-E	MMU-AP0092MH-E	MMU-AP0094YH-E	MMD-AP0094SPH-E
012 type 3.6 kw (1.25HP)	MMU-AP0124HP-E	MMU-AP0126MH-E	MMU-AP0122MH-E	MMU-AP0124YH-E	MMD-AP0124SPH-E
015 type 4.5 kw (1.7HP)	MMU-AP0154HP-E	MMU-AP0156MH-E	MMU-AP0152MH-E	MMU-AP0154SH-E	MMD-AP0154SPH-E
018 type 5.6 kw (2HP)	MMU-AP0184HP-E	MMU-AP0186MH-E	MMU-AP0182MH-E	MMU-AP0184SH-E	MMD-AP0184SPH-E
024 type 7.1 kw (2.5HP)	MMU-AP0244HP-E		MMU-AP0242MH-E	MMU-AP0244SH-E	MMD-AP0244SPH-E
027 type 8.0 kw (3HP)	MMU-AP0274HP-E		MMU-AP0272MH-E		MMD-AP0274SPH-E
030 type 9.0 kw (3.2HP)	MMU-AP0304HP-E		MMU-AP0302MH-E		
036 type 11.2 kw (4HP)	MMU-AP0364HP-E		MMU-AP0362MH-E		
048 type 14.0 kw (5HP)	MMU-AP0484HP-E		MMU-AP0482MH-E		
056 type 16.0 kw (6HP)	MMU-AP0564HP-E		MMU-AP0562MH-E		



Cooling capacity (HP equivalent)	Concealed duct high static pressure type	Concealed duct	Ceiling type	Floor standing type	Console
005 type 1.7 kw (0.6HP)					
007 type 2.2 kw (0.8HP)		MMD-AP0076BHP-E			MML-AP0074NH-E
009 type 2.8 kw (1HP)		MMD-AP0096BHP-E			MML-AP0094NH-E
012 type 3.6 kw (1.25HP)		MMD-AP0126BHP-E			MML-AP0124NH-E
015 type 4.5 kw (1.7HP)		MMD-AP0156BHP-E	MMC-AP0157HP-E	MMF-AP0156H-E	MML-AP0154NH-E
018 type 5.6 kw (2HP)	MMD-AP0186HP-E	MMD-AP0186BHP-E	MMC-AP0187HP-E	MMF-AP0186H-E	MML-AP0184NH-E
024 type 7.1 kw (2.5HP)	MMD-AP0246HP-E	MMD-AP0246BHP-E	MMC-AP0247HP-E	MMF-AP0246H-E	
027 type 8.0 kw (3HP)	MMD-AP0276HP-E	MMD-AP0276BHP-E	MMC-AP0277HP-E	MMF-AP0276H-E	
030 type 9.0 kw (3.2HP)		MMD-AP0306BHP-E			
036 type 11.2 kw (4HP)	MMD-AP0366HP-E	MMD-AP0366BHP-E	MMC-AP0367HP-E	MMF-AP0366H-E	
048 type 14.0 kw (5HP)	MMD-AP0486HP-E	MMD-AP0486BHP-E	MMC-AP0487HP-E	MMF-AP0486H-E	
056 type 16.0 kw (6HP)	MMD-AP0566HP-E	MMD-AP0566BHP-E	MMC-AP0567HP-E	MMF-AP0566H-E	
072 type 22.4 kw (8HP)	MMD-AP0724H-E				
096 type 28.0 kw (10HP)	MMD-AP0964H-E				



Cooling capacity (HP equivalent)	High wall type 3 series	High wall type 4 series	Floor standing cabinet type	Floor standing concealed type	Hot water module
005 type 1.7 kw (0.6HP)		MMK-AP0054MHP-E			
007 type 2.2 kw (0.8HP)	MMK-AP0073H	MMK-AP0074MH-E	MML-AP0074H-E	MML-AP0074BH-E	
009 type 2.8 kw (1HP)	MMK-AP0093H	MMK-AP0094MH-E	MML-AP0094H-E	MML-AP0094BH-E	
012 type 3.6 kw (1.25HP)	MMK-AP0123H	MMK-AP0124MH-E	MML-AP0124H-E	MML-AP0124BH-E	
015 type 4.5 kw (1.7HP)	MMK-AP0153H		MML-AP0154H-E	MML-AP0154BH-E	
018 type 5.6 kw (2HP)	MMK-AP0183H		MML-AP0184H-E	MML-AP0184BH-E	
024 type 7.1 kw (2.5HP)	MMK-AP0243H		MML-AP0244H-E	MML-AP0244BH-E	
027 type 8.0 kw (3HP)					MMW-AP0271LQ-E
030 type 9.0 kw (3.2HP)					
036 type 11.2 kw (4HP)					
048 type 14.0 kw (5HP)					
056 type 16.0 kw (6HP)					MMW-AP0561LQ-E

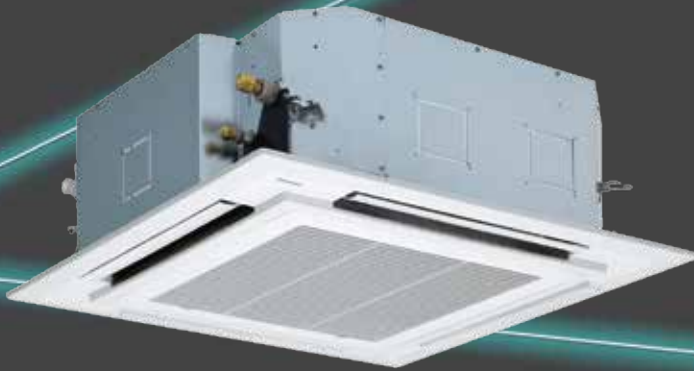


Cooling capacity (HP equivalent)	Fresh air intake indoor unit type	Air-to-air heat exchanger with DX-coil type	Air-to-air heat exchanger with DX coil humid filter	Air volume	Air-to-air heat exchanger*
005 type 1.7 kw (0.6HP)				150 m ³ /h	VN-M150HE
007 type 2.2 kw (0.8HP)				250 m ³ /h	VN-M250HE
009 type 2.8 kw (1HP)				350 m ³ /h	VN-M350HE
012 type 3.6 kw (1.25HP)		MMD-VN502HEXE	MMD-VNK502HEXE	500 m ³ /h	VN-M500HE
015 type 4.5 kw (1.7HP)				650 m ³ /h	VN-M650HE
018 type 5.6 kw (2HP)		MMD-VN802HEXE	MMD-VNK802HEXE	800 m ³ /h	VN-M800HE
024 type 7.1 kw (2.5HP)		MMD-VN1002HEXE	MMD-VNK1002HEXE	1000 m ³ /h	VN-M1000HE
027 type 8.0 kw (3HP)				1500 m ³ /h	VN-M1500HE
030 type 9.0 kw (3.2HP)				2000 m ³ /h	VN-M2000HE
036 type 11.2 kw (4HP)	MMD-AP0481HFE				
048 type 14.0 kw (5HP)	MMD-AP0721HFE				
056 type 16.0 kw (6HP)	MMD-AP0961HFE				
072 type 22.4 kw (8HP)					
096 type 28.0 kw (10HP)					

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

4-way air discharge cassette type

MMU-AP*4HP-E**



Individual louver control

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

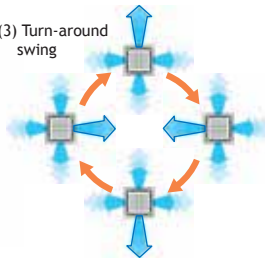
(1) Standard swing



(2) Diagonally opposite swing



(3) Turn-around swing



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

Technical specifications

Model name	MMU-	AP0094HP-E	AP0124HP-E	AP0154HP-E	AP0184HP-E	AP0244HP-E	AP0274HP-E	AP0304HP-E	AP0364HP-E	AP0484HP-E	AP0564HP-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	0.112/0.112						
Appearance (Ceiling panel)	Model	RBC-U31PGP(W)-E															
External dimensions: Main unit (Ceiling panel)*	Height	256 (30)*							319 (30)*								
	Width	840 (950)*															
	Depth	840 (950)*															
Total weight: Main unit (Ceiling panel)*	(kg)	18 (4)*			20 (4)*				25 (4)*								
Fan unit	Standard air flow (High/Mid/Low)	800/730/680		930/830/790		1050/920/800		1320/1110/850		1970/1430/1070		2130/1430/1130		2130/1520/1230			
	Motor output	14				20				68		72					
Connecting pipe	Gas side	ø9.5			ø12.7			ø15.9									
	Liquid side	ø6.4						ø9.5									
	Drain port (nominal dia.)	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.

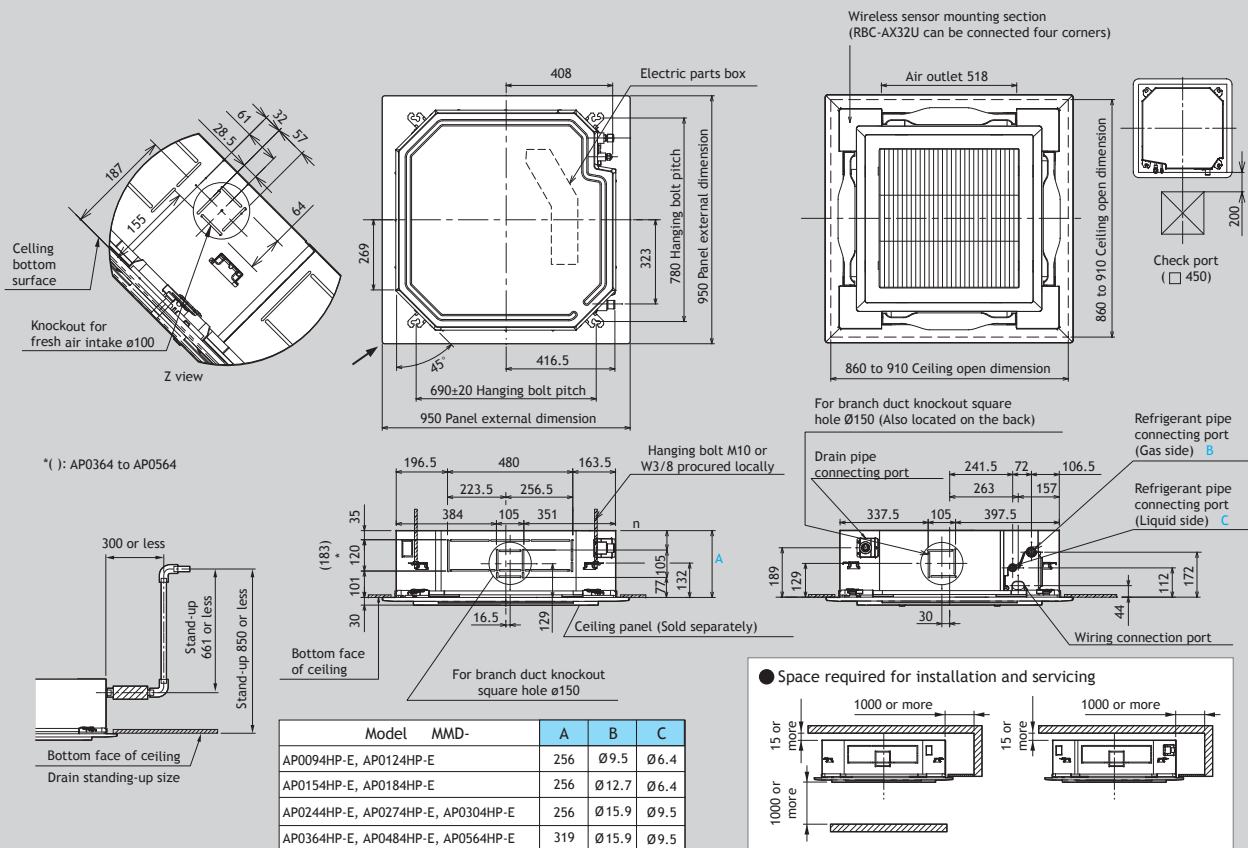
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

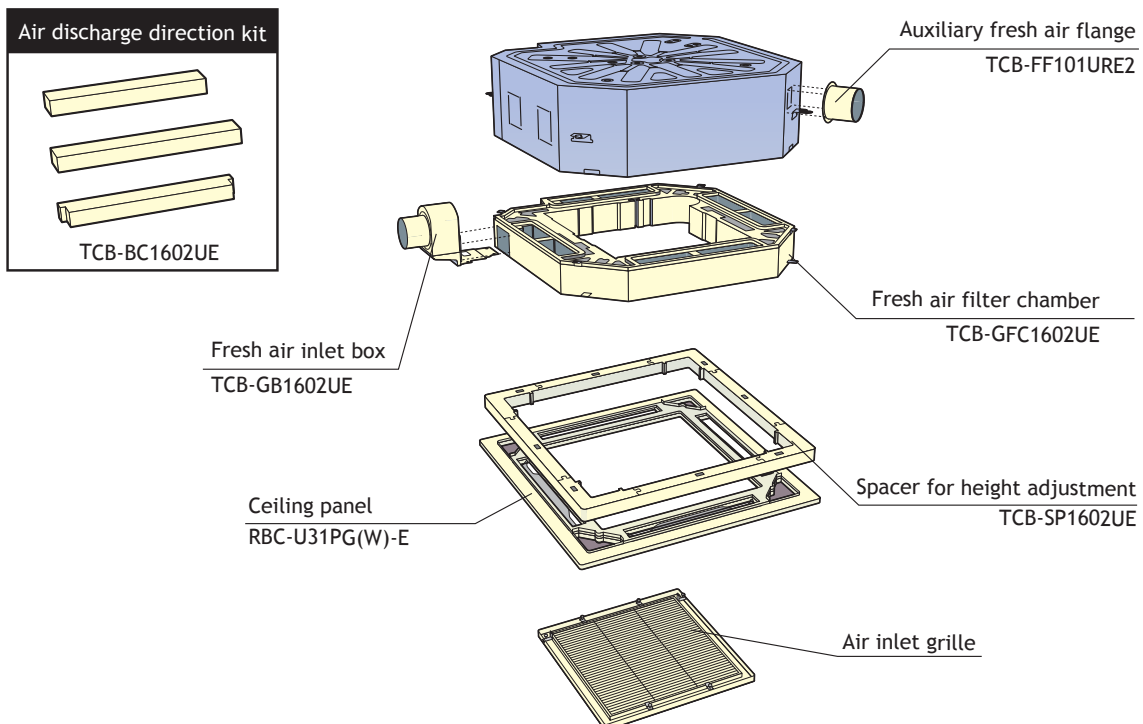
MMU-AP0094HP-E to AP0564HP-E



* The figure shows the RBC-U31PG(W)-E panel

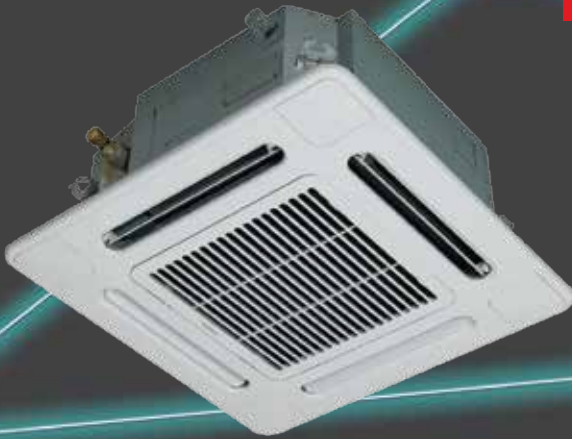
(Unit:mm)

Options



Compact 4-way Cassette (600 × 600) Type

MMU-AP*4MH-E**
MMU-AP*6MH-E**



Perfect for grid system ceiling

This compact unit (575 × 575 mm) fits perfectly into ceilings and matches standard architectural modules, without the need to cut ceiling tiles. The flaps fold tightly against the ceiling when operation stops so that the ceiling is affected only slightly even if air conditioning is installed.



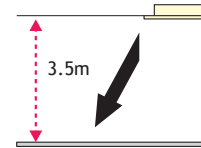
RBC-UM11PG(W)E

Designed for simple & easy installation and maintenance

The slim design is only 268 mm in height even when an electrical box is located inside the unit. Easy installation is also possible using the panel adjust pocket. Use the “adjust pocket” function for fine adjustments after installation. Available for ceilings up to 3.5 m in height. The drain-checking hole makes it possible to check the drain pan through the side case.



Drain-checking hole



Maximum height

Technical specifications

Model name		MMU-	AP0056MH-E	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184HP-E
Cooling/Heating capacity*1		(kW)	1.7/1.9	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)	0.033/0.033	0.034/0.034	0.036/0.036	0.038/0.038	0.041/0.041	0.052/0.052
Appearance (Ceiling panel)		Model	RBC-UM11PG(W)-E					
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	268 (27)*					
	Width	(mm)	575 (700)*					
	Depth	(mm)	575(700)*					
Total weight: Main unit (Ceiling panel)*		(kg)	17 (3)*					
Fan unit	Standard air flow (High/Mid/Low)	(m ³ /h)	430/400/365	552/462/378	570/468/378	590/504/402	660/552/468	762/642/522
	Motor output	(w)	60					
Connecting pipe	Gas side	(mm)	ø9.5				ø12.7	
	Liquid side	(mm)	ø6.4					
	Drain port (nominal dia.)	(mm)	25 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	35/32/28	36/32/28	37/33/28	37/33/29	40/35/30	44/39/34
Sound power level (High/Mid/Low)		(dB(A))	50/47/43	51/47/43	52/48/43	52/48/44	55/50/45	59/54/49

* Figures in parentheses are for ceiling panels.

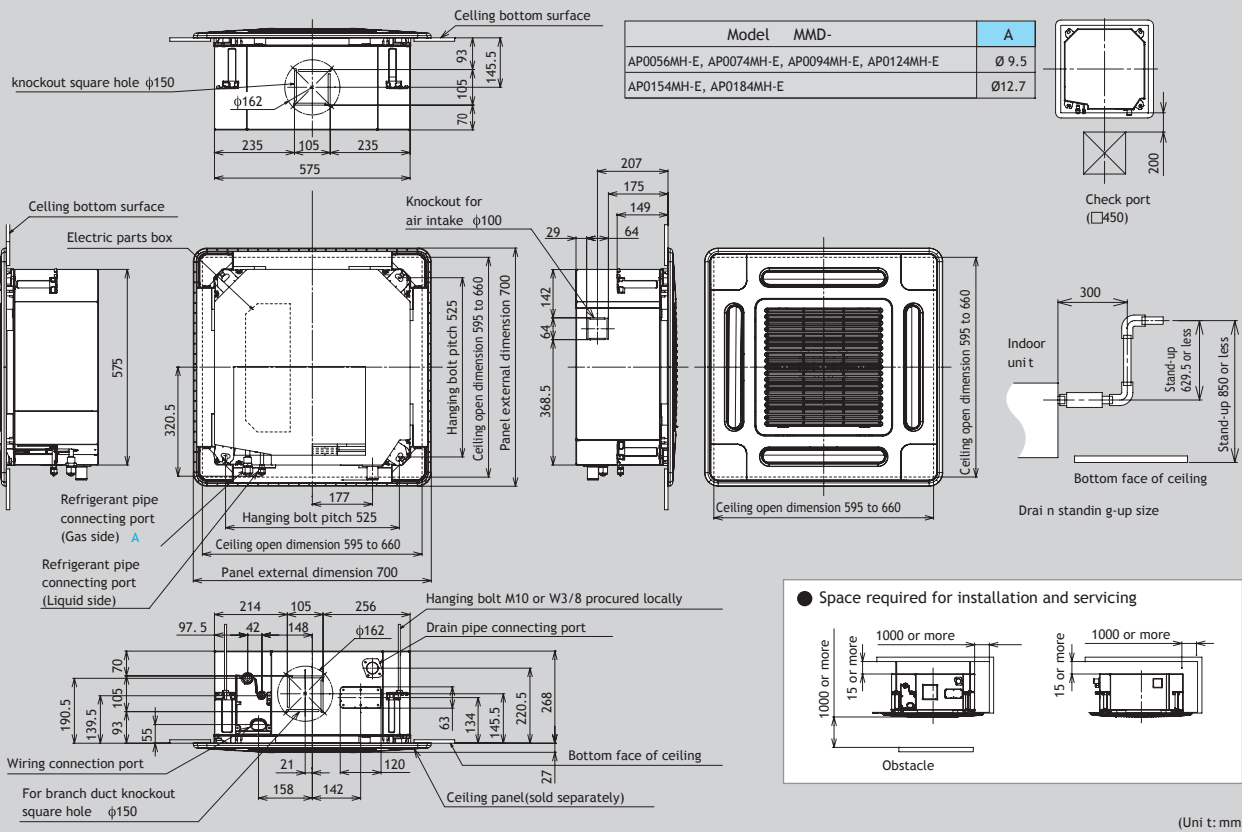
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

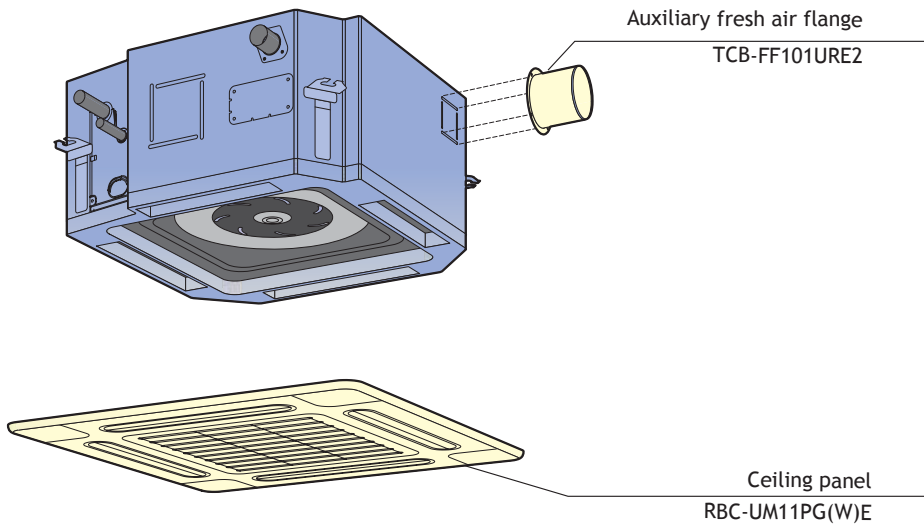
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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-AP0056MH-E, MMU-AP0074MH-E to AP0184MH-E

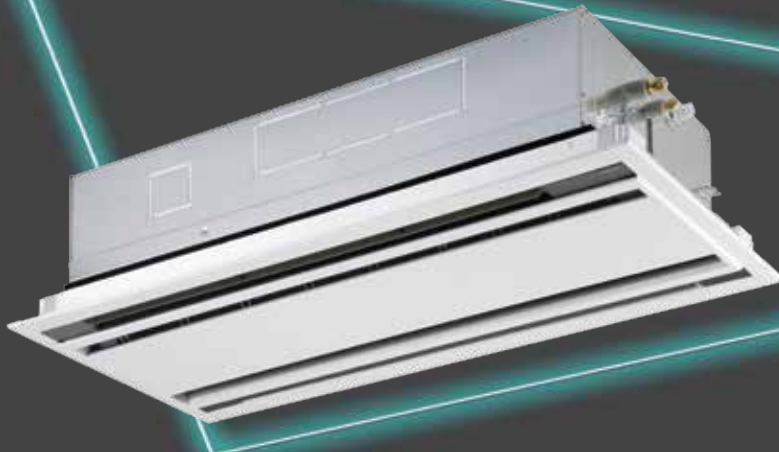


Options



2-way air discharge cassette type

MMU-AP***2WH



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.

REMOTE CONTROLS



RBC-AX32UW(W)-E RBC-AMS41E RBC-AMS51E

Technical specifications

Model name	MMU-	AP0072WH	AP0092WH	AP0122WH	AP0152WH	AP0182WH	AP0242WH	AP0272WH	AP0302WH	AP0362WH	AP0482WH	AP0562WH	
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.) (mm)	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.

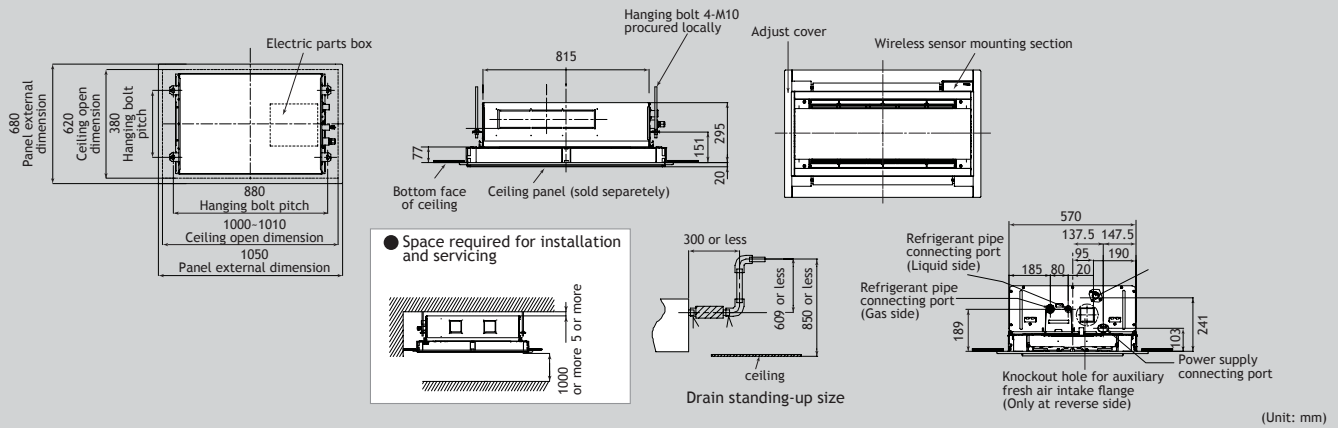
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

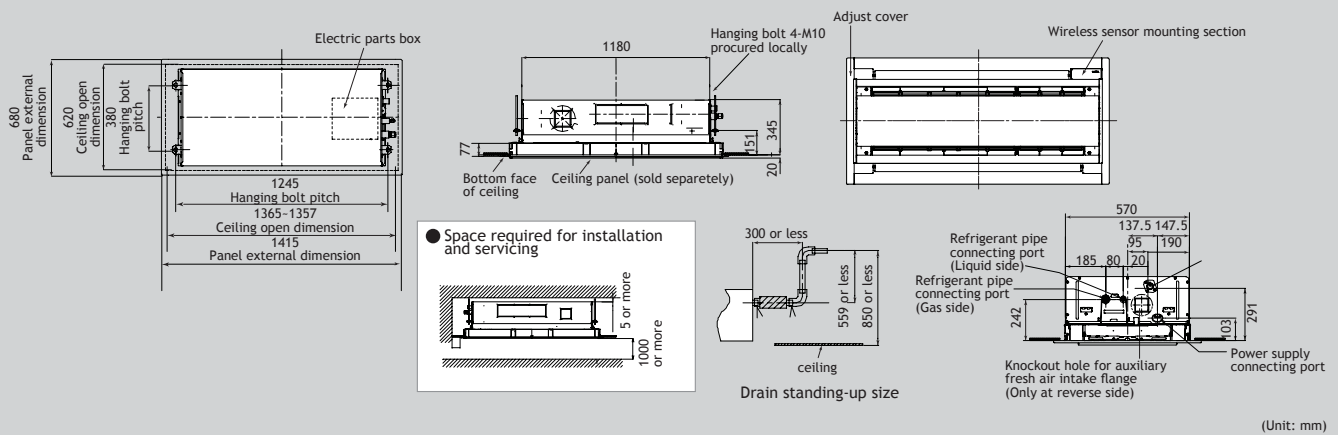
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

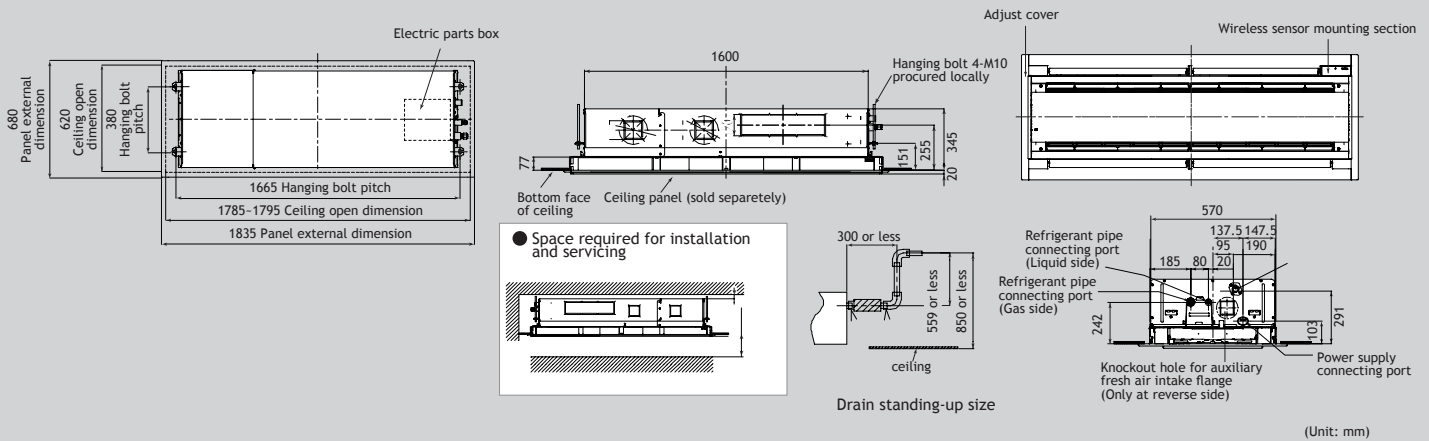
MMU-AP0072WH to AP0152WH



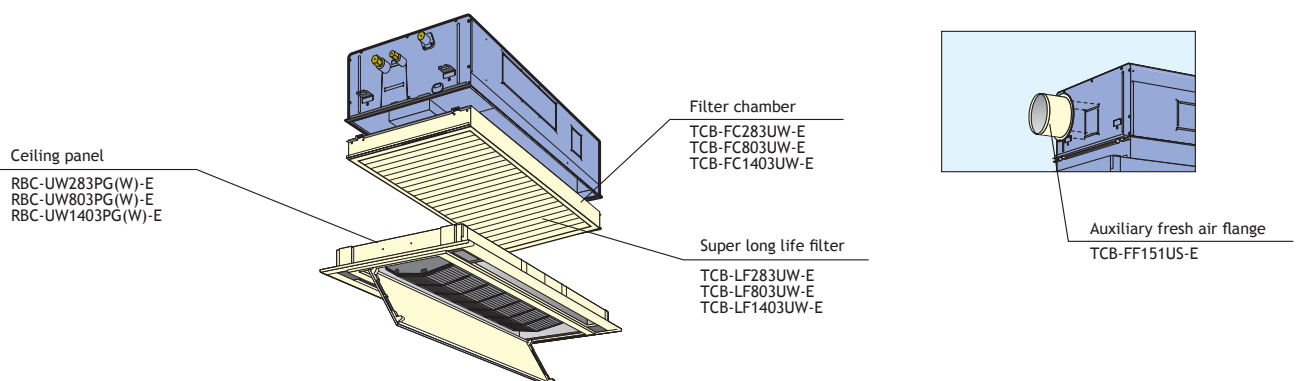
MMU-AP0182WH to AP0302WH



MMU-AP0362WH to AP0562WH

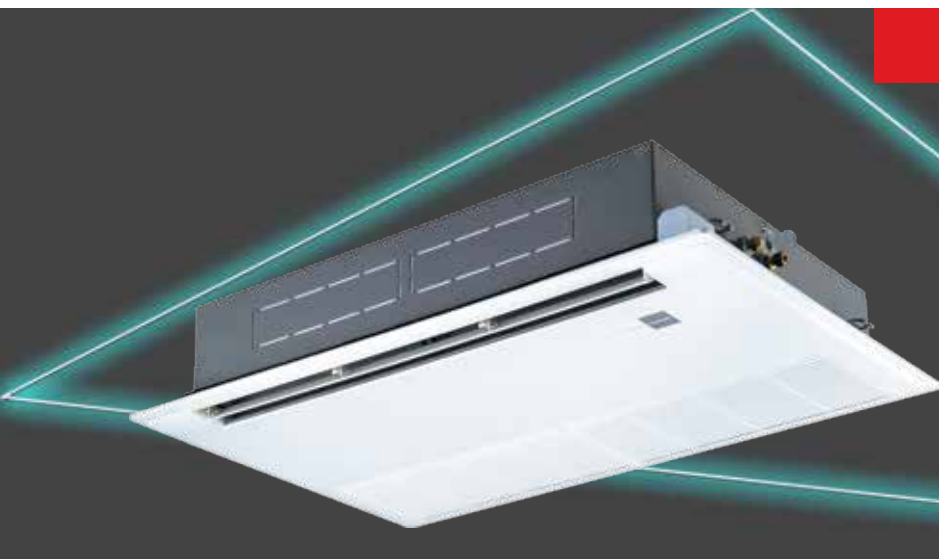


Options



1-way air discharge cassette type

MMU-AP*4YH-E**
MMU-AP*4SH-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*4SH-E)**

Preparations/connection possible with a circle duct flange.

REMOTE CONTROLS



TBC-AX32E2
For series SH- RBC-AX33CE2 RBC-AMS41E RBC-AMS51E

Technical specifications

Model name	MMU-	AP0074YH-E	AP0094YH-E	AP0124YH-E	AP0154SH-E	AP0184SH-E	AP0244SH-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)	22			30				
Connecting pipe	Gas side (mm)	ø9.5			ø12.7		ø15.9		
	Liquid side (mm)	ø6.4							
	Drain port (nominal dia.) (mm)	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.

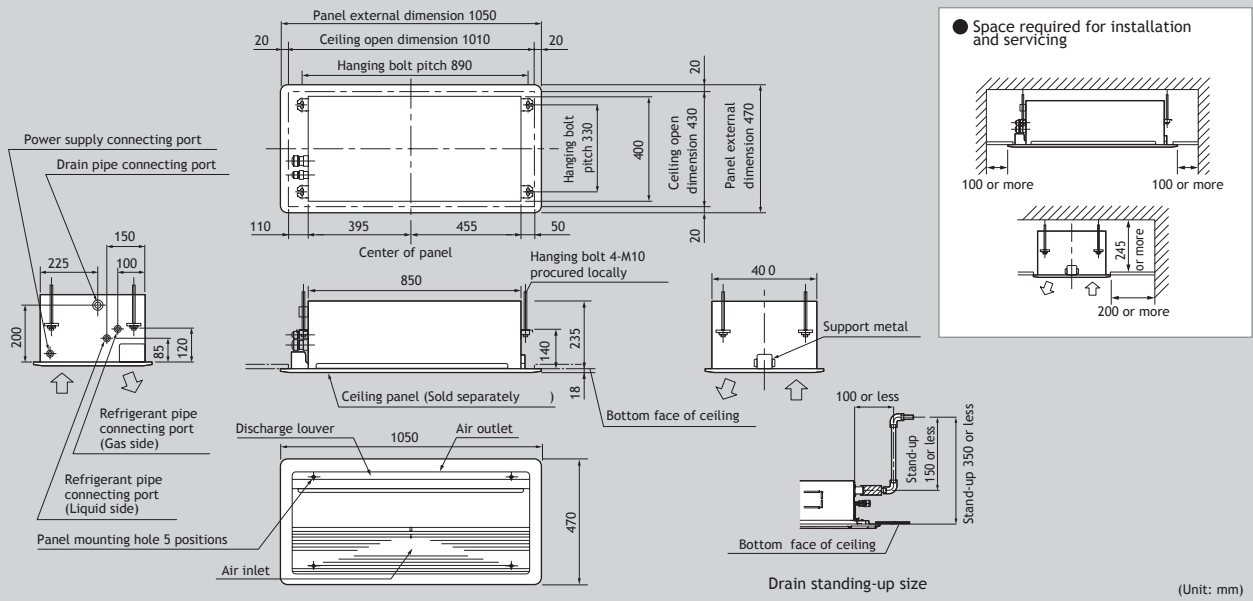
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

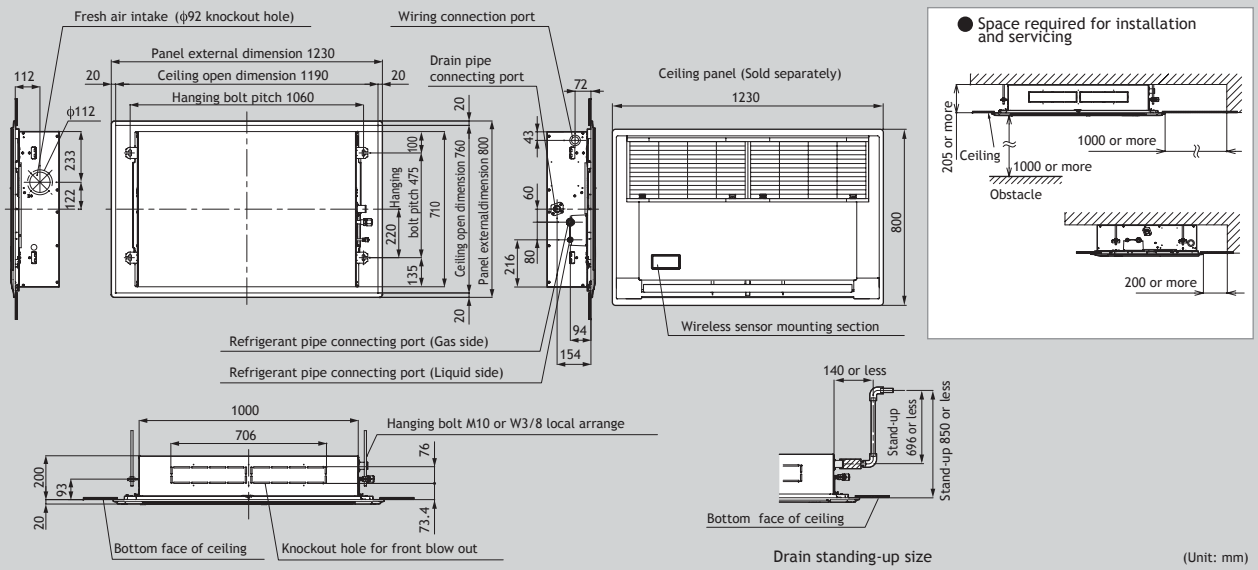
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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-AP0074YH-E to AP0124YH-E

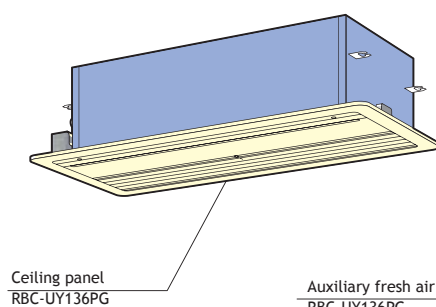


MMU-AP0154SH-E to AP0244SH-E

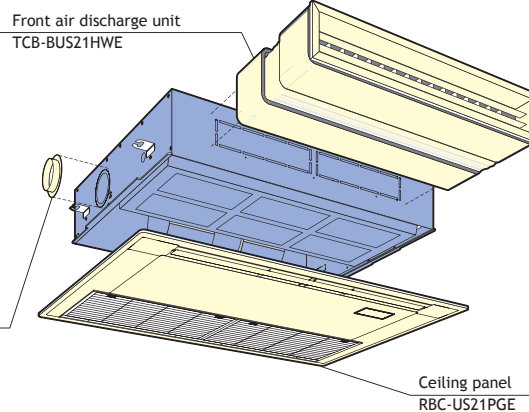


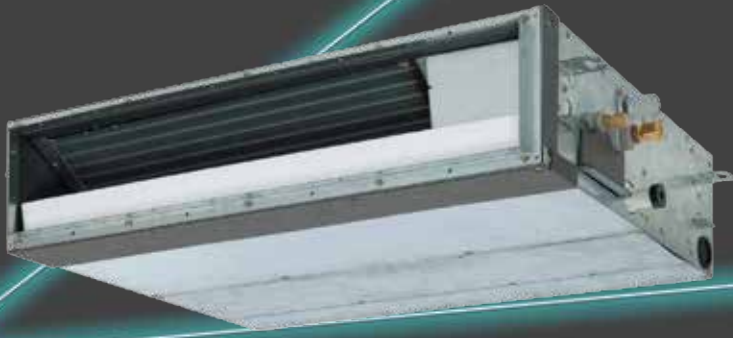
Options

AP0074YH-E/AP0094YH-E/AP0124YH-E



Auxiliary fresh air flange
RBC-UY136PG





Slim duct type

MMD-AP*4SPH-E**
MMD-AP*6SPH-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.

REMOTE CONTROLS



TCB-AX32E2 RBC-AMS41E RBC-AMS51E

Technical specifications

Model name		MMD-	AP0056SPH-E	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E	AP0244SPH-E	AP0274SPH-E	
Cooling/Heating capacity*1		(kW)	1.7/1.9	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 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)	0.038/0.036	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						1140		
	Depth	(mm)	645								
Total weight		(kg)	22			23		29			
Fan unit	Standard air flow (High/Mid/Low)	(m ³ /h)	435/400/370	540/470/400	600/520/450		690/600/520	780/680/580	1,080/1,000/900		
	Motor output	(w)	60								120
	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								
	Drain port (nominal dia.)	(mm)	25 (Polyvinyl chloride tube)								
Sound pressure level*2 (High/Med./Low)	Under air inlet	(dB(A))	33/32/30	36/33/30	38/35/32	39/36/33	40/38/36	49/47/44			
	Back air inlet	(dB(A))	26/25/24	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))	48/47/45	51/48/45	53/50/47	54/51/48	55/53/51	64/62/59			
	Back air inlet	(dB(A))	41/40/39	43/41/39	44/42/40	47/45/43	48/46/44	53/51/48			

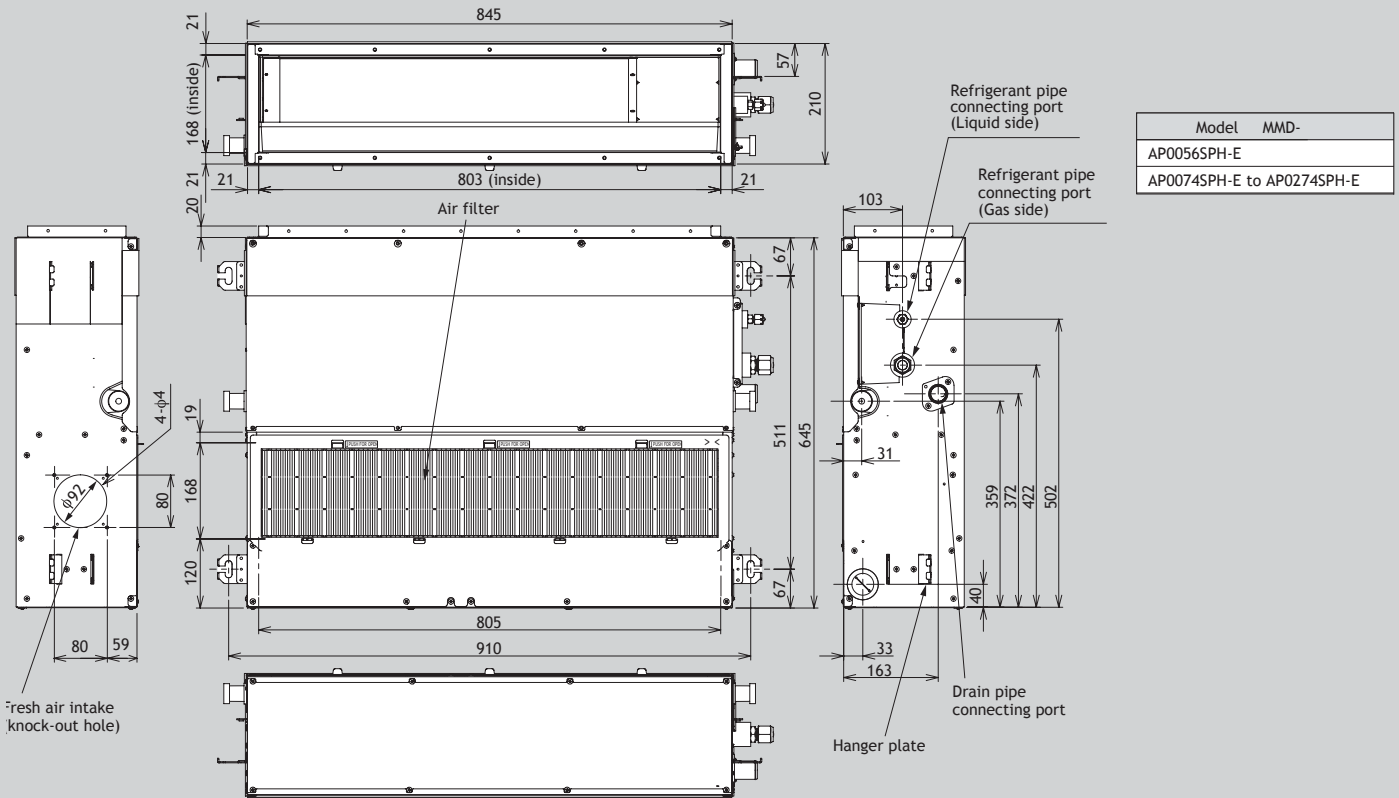
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

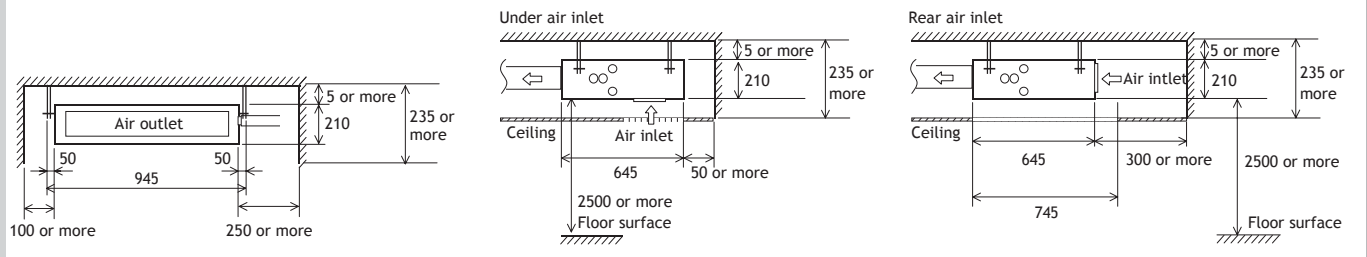
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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-AP0056SPH-E, MMD-AP0074SPH-E to AP0274SPH-E



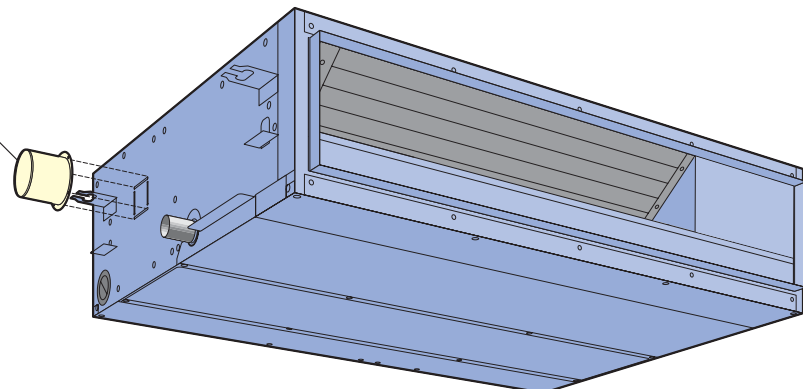
Space required for installation and servicing



(Unit: m)

Options

Auxiliary fresh air flange
TCB-FF101URE2



Concealed duct high static pressure type



MMD-AP*4H-E**



MMD-AP*6HP-E**

Design flexibility

Satisfies all your design needs.
Compatible with external static pressures up to 196 Pa.

Can be equipped with the following options:

- high-efficiency filter (65, 90)
- drain pump kit

Construction characteristics

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

REMOTE CONTROLS



TCB-AX32E2



RBC-AMS41E



RBC-AMS51E

Technical specifications

Model name	MMD-	AP0186HP-E	AP0246HP-E	AP0276HP-E	AP0366HP-E	AP0486HP-E	AP0566HP-E	AP0724H-E	AP0964H-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	1.200/1.540	1.260/1.610	
External dimensions	Height (mm)	298						470		
	Width (mm)	1,000			1,400			1,380		
	Depth (mm)	750						1,250		
Total weight	(kg)	34			43			150		
Fan unit	Standard air flow (High/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)	3,600	4,200		
	Motor output (w)	250			350			370×3		
	External static pressure (factory setting) (Pa)	100						137		
	External static pressure (Pa)	50-75-125-150-175-200 (7steps)						68.6 - 137 - 196		
Connecting pipe	Gas side (mm)	ø12.7	ø15.9			ø22.2				
	Liquid side (mm)	ø6.4	ø9.5			ø12.7				
	Drain port (nominal dia.) (mm)	25 (Polyvinyl chloride tube)						25 (Male screw)		
Sound pressure level*2 (High/Mid/Low) (dB(A))		37 (32/30)	38 (34/31)	41 (37/34)	42 (40/35)	45 (42/37)	49	50		
Sound power level (High/Mid/Low) (dB(A))		60 (54/50)	60 (55/51)	62 (57/53)	65 (62/54)	68 (64/56)	69	70		

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.

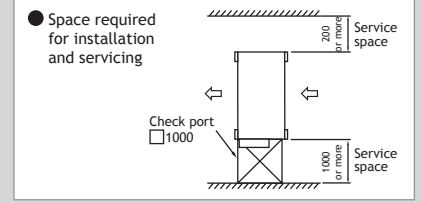
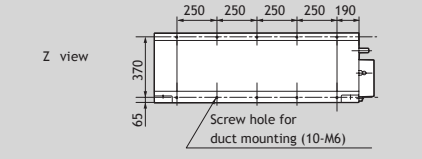
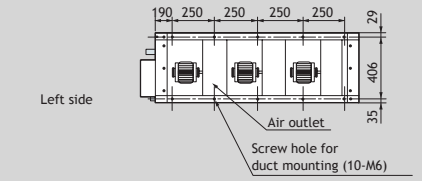
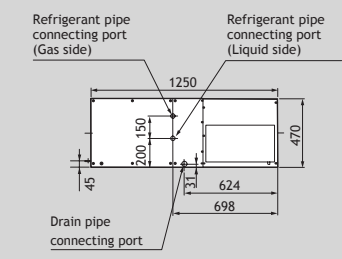
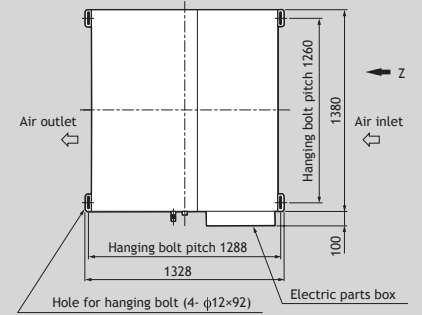
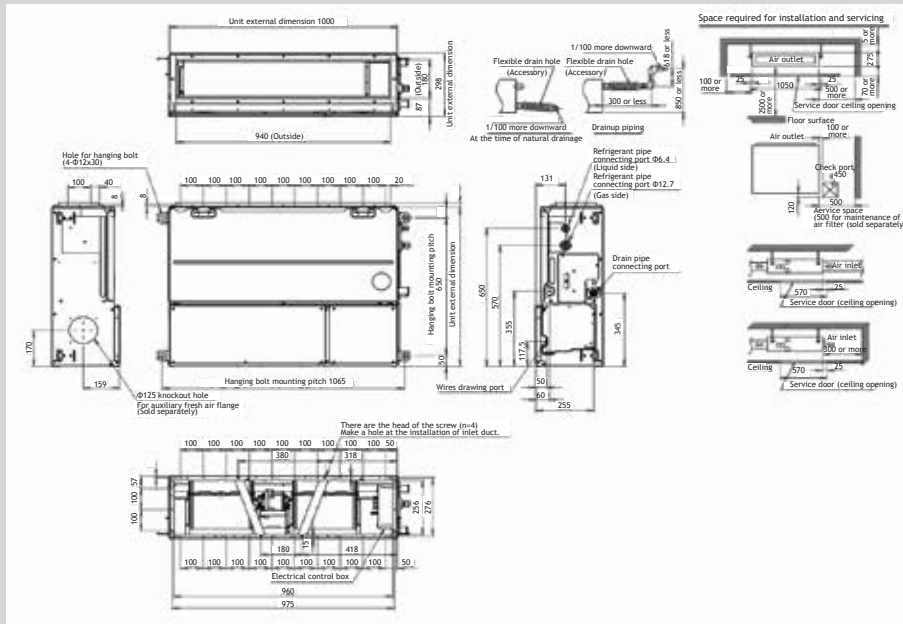
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

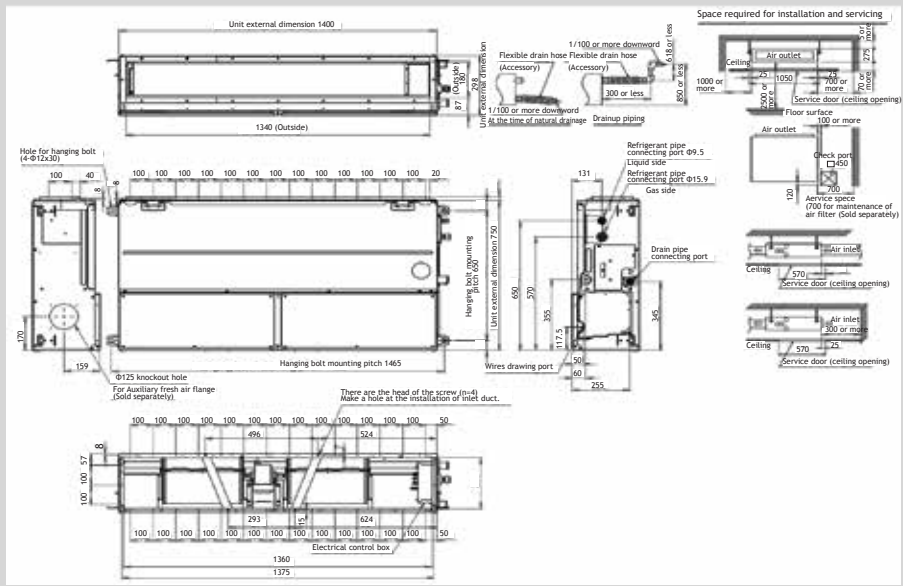
MMD-AP0186HP-E to AP0276HP-E

MMD-AP0724H-E, AP0964H-E

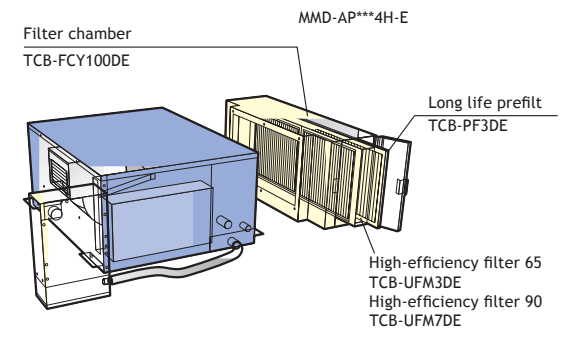
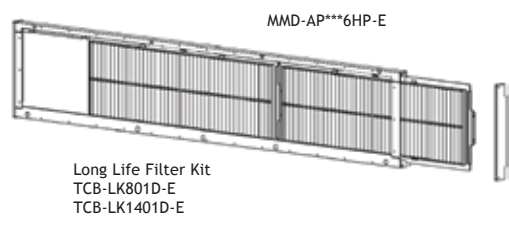


(Unit : mm)

MMD-AP0366HP-E to AP0566HP-E



Options



Concealed duct type

MMD-AP*6BHP-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.

REMOTE CONTROLS



TCB-AX32E2

RBC-AMS41E

RBC-AMS51E

Technical specifications

Model name		MMD-	AP0076BHP-E	AP0096BHP-E	AP0126BHP-E	AP0156BHP-E	AP0186BHP-E	AP0246BHP-E	AP0276BHP-E	AP0306BHP-E	AP0366BHP-E	AP0486BHP-E	AP0566BHP-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 dimensions	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 (High/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											
	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.)	(mm)	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		

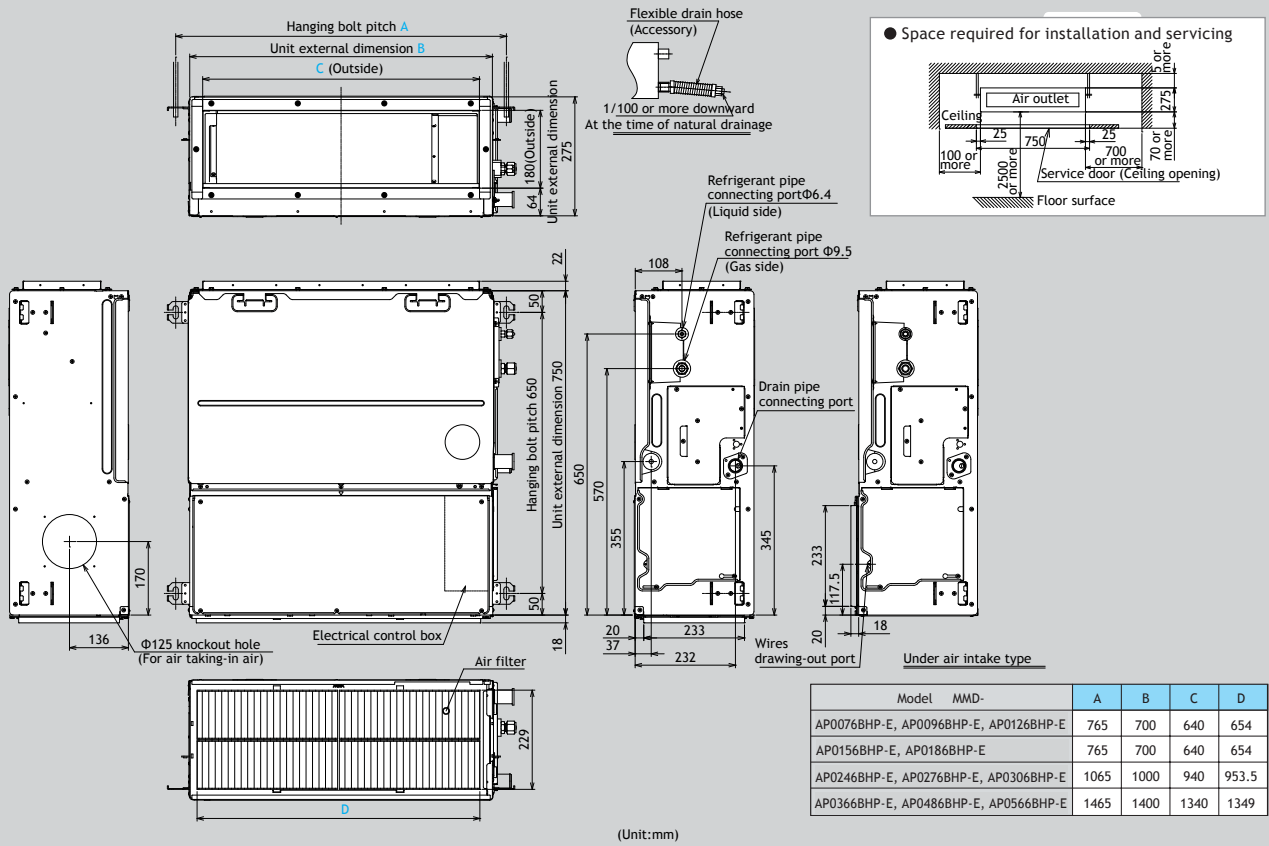
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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.

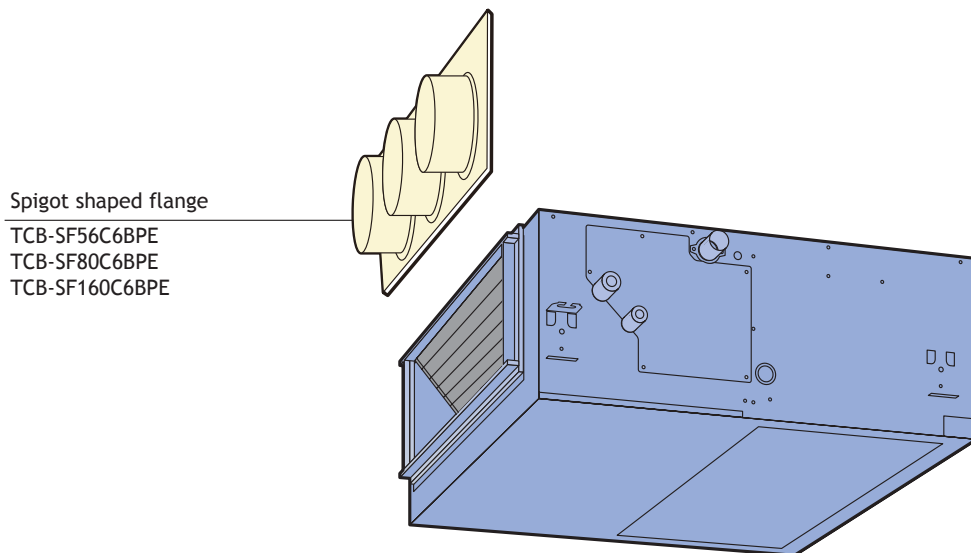
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMD-AP0076BHP-E to AP0566BHP-E



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

Options



Ceiling Type

MMC-AP*7HP-E**



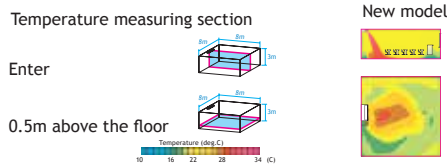
Smooth curve for pliant Shape

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.

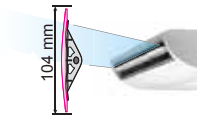
Air volume has increased and noise level also has decreased compared with previous model. Winds of new ceiling type of 4HP to 6HP can be reached up to 4.3 metre.



New Designed Wide Flap

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

New model



30% Extension

Remote control



RBC-AX33CE

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-	AP0157HP-E	AP0187HP-E	AP0247HP-E	AP0277HP-E	AP0367HP-E	AP0487HP-E	AP0567HP-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		1,269		1,586			
	Depth (mm)	690							
Total weight	(kg)	24		30		37			
Fan unit	Standard air flow (High/Mid/Low)	(m ³ /h)	840 /690/540	960 /720/540	1,440 /1,020/750		1,860 /1,350/1,020	1,860 /1,530/1,200	2,040 /1,650/1,260
	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.)	(mm)	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	
Sound power level (High/Mid/Low)	(dB(A))	51/49/43	52/50/43	56/51/44		59/53/47	59/56/50	61/57/51	

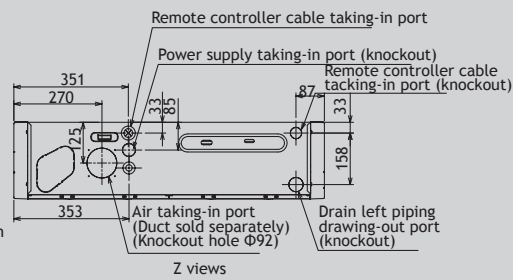
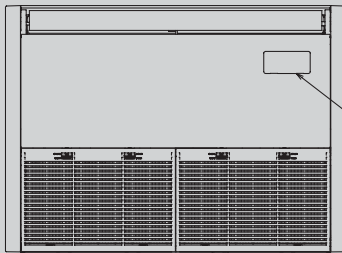
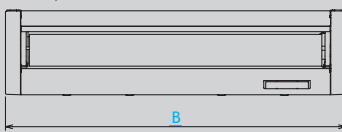
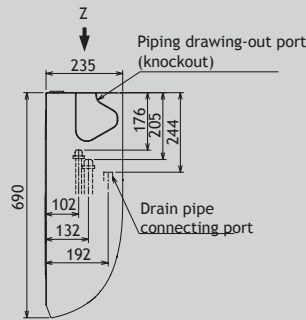
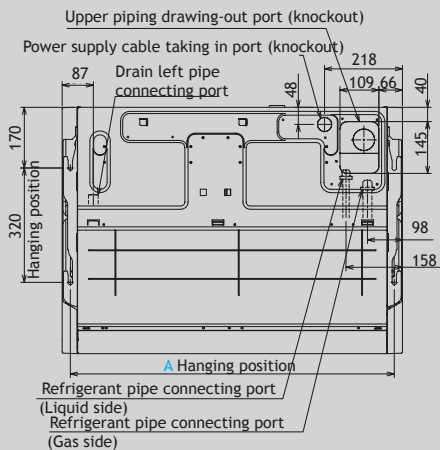
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

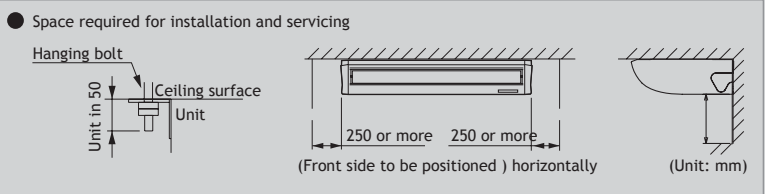
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

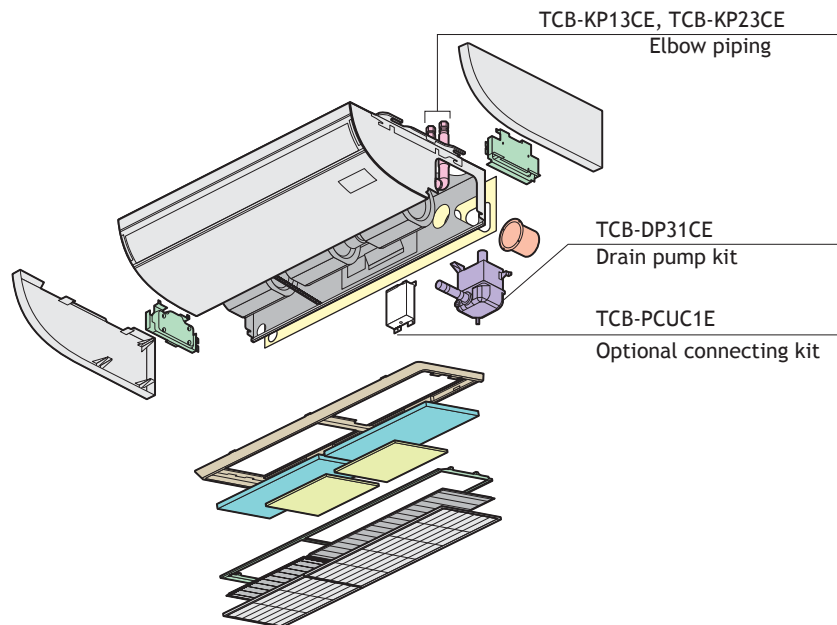
MMC-AP0157HP-E to AP0567HP-E



Model	MMC-	A	B
AP0157HP-E, AP0187HP-E		906	950
AP0247HP-E, AP0277HP-E		1223	1269
AP0367HP-E, AP0487HP-E, AP0567HP-E		1540	1586



Options





Floor Standing Type

MMF-AP*6H-E**

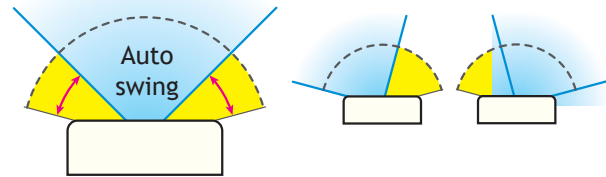
Thin profile suits interior design

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

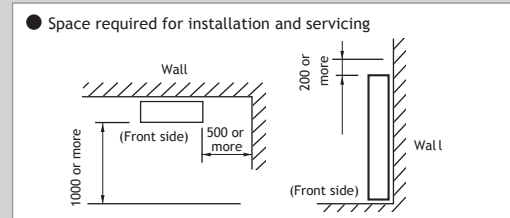
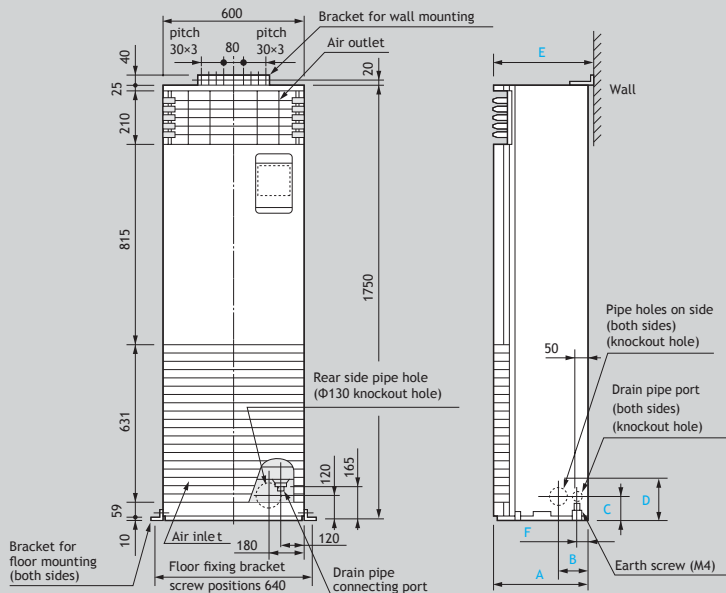
Wide outlet

Corner location is also possible, with right and left auto swing.

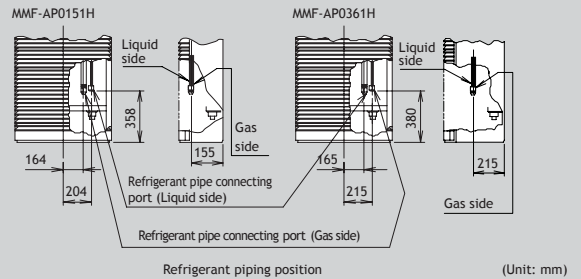
Set the vertical angle manually.



MMF-AP0156H-E to AP0566H-E



Model MMF-	A	B	C	D	E	F
AP0154H-E to AP0274H-E	200	107	132	157	210	50
AP0364H-E to AP0564H-E	380	125	120	160	390	40



Technical specifications

Model name	MMF-	AP0156H-E	AP0186H-E	AP0246H-E	AP0276H-E	AP0366H-E	AP0486H-E	AP0566H-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)	1,750						
	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.)	(mm)	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

Console type

MML-AP*4NH-E**



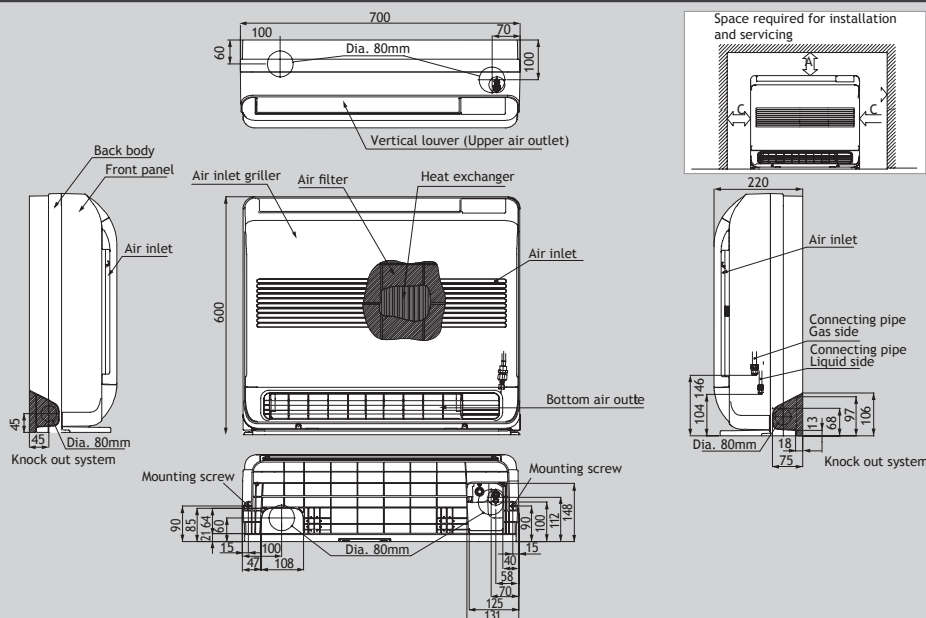
Wide outlet

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-AP0074NH-E to AP0184NH-E



(Unit: mm)

Technical specifications

Model name	MML-	AP0074NH-E	AP0094NH-E	AP0124NH-E	AP0154NH-E	AP0184NH-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.)	(mm)	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/Mid/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.

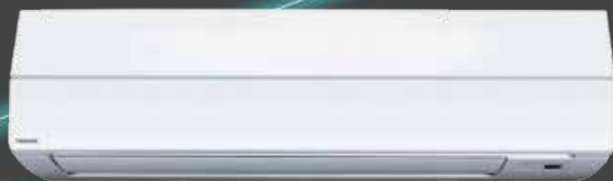
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

High-wall Type (3 series)

MMK-AP*3H**



Elegant and slim

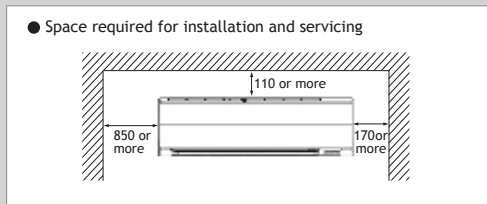
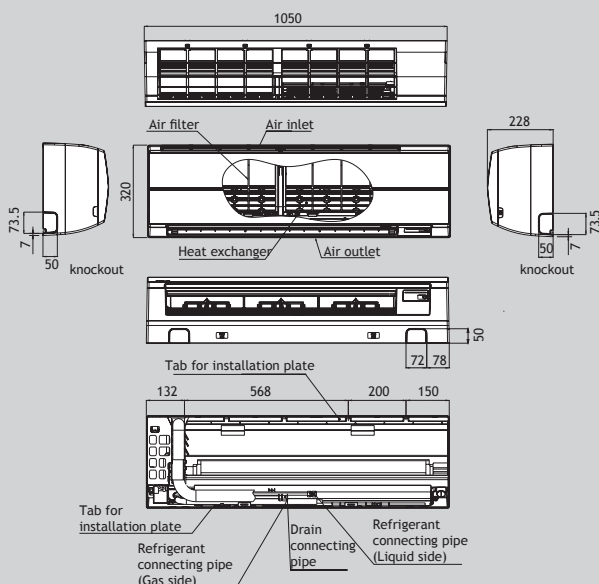
This classic high-wall is elegant and slim; it can easily blend in with any room interior.

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



Remote controller

MMK-AP0073H to AP0243H



(Unit: mm)

Technical specifications

Model name	MMK-	AP0073H	AP0093H	AP0123H	AP0153H	AP0183H	AP0243H
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/60 Hz	(kW)	0.018	0.021		0.043	0.050
External dimensions	Height	(mm)	320				
	Width	(mm)	1,050				
	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	1,020/750/570
	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.)	(mm)	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

High-wall type (4 series)

MMK-AP*4MHP-E**
MMK-AP*4MH-E**



Elegant and slim

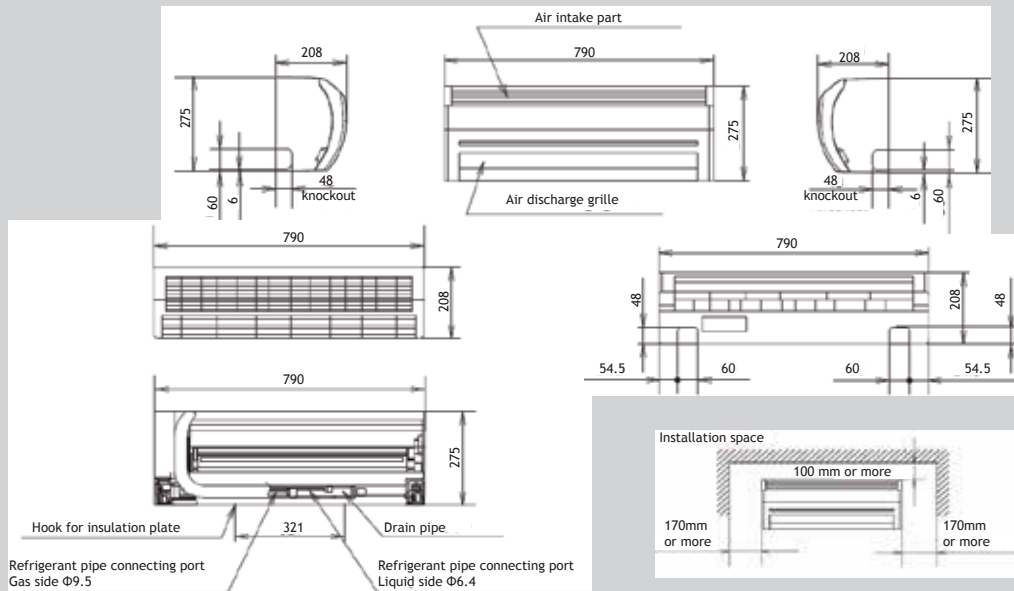
This classic high-wall is elegant and slim; it can easily blend in with any room interior.

Total comfort is granted. For uniform air distribution with the help of directional auto switch louver.



Remote controller

MMK-AP0054MHP-E, AP0074MH-E, AP0094MH-E, AP0124MH-E



(Unit : mm)

Technical specifications

Model name	MMK-	AP0054MHP-E	AP0074MH-E	AP0094MH-E	AP0124MH-E
Cooling/Heating capacity*1	(kW)	1.7/1.9	2.2/2.5	2.8/3.2	3.6/4.0
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)			
	Power consumption 50 Hz/60 Hz (kW)	0.017	0.017	0.018	0.019
External dimensions	Height (mm)	275			
	Width (mm)	790			
	Depth (mm)	208			
Total weight	(kg)	11			
Fan unit	Standard air flow (High/Mid/Low) (m ³ /h)	445/400/360	480/420/360	510/450/360	540/450/360
	Motor output (w)	30			
Connecting pipe	Gas side (mm)	ø9.5			
	Liquid side (mm)	ø6.4			
	Drain port (nominal dia.) (mm)	16 (polyvinyl chloride tube)			
Sound pressure level*2 (High/Mid/Low) (dB(A))		33/31/29	35/32/29	36/33/29	37/33/29
Sound power level (High/Mid/Low) (dB(A))		48/46/44	50/47/44	51/48/44	52/48/44

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*4H-E**



Slim & compact design

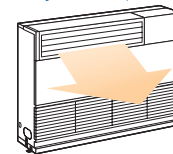
Under-window mounting does not block lighting.

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

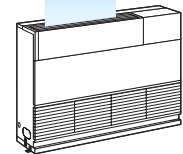
Slim & compact design

Distribution can be reversed to suit occupant preference.

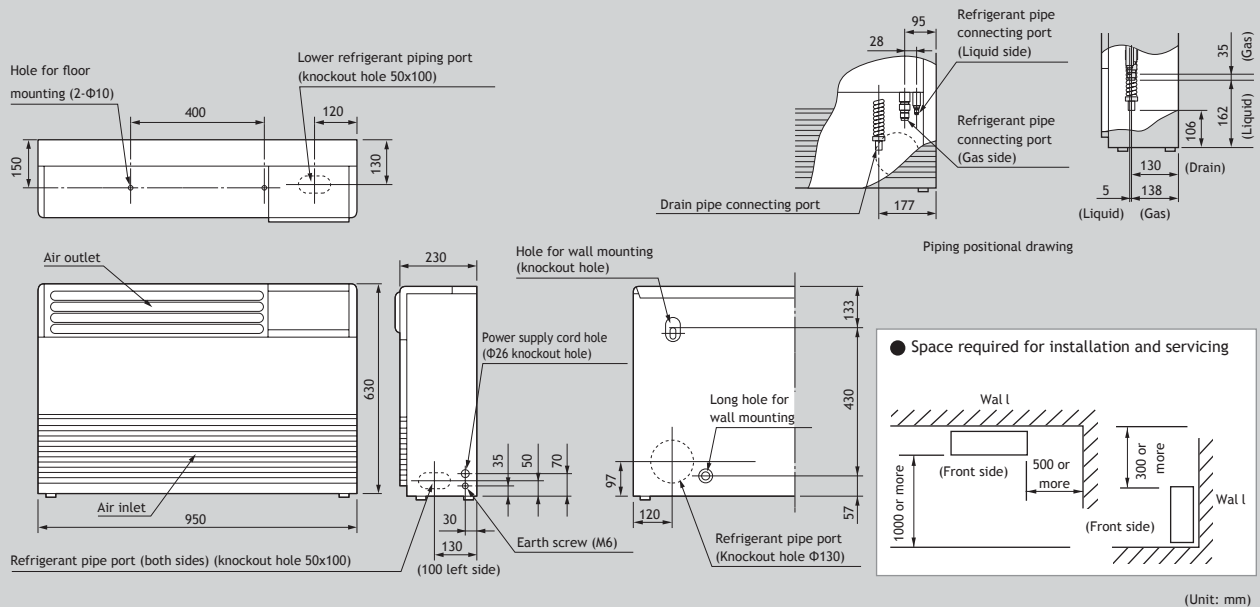
Air blown from front panel (factory default)



Air blown from top



MML-AP0074H-E to AP0244H-E



Technical specifications

Model name	MML-	AP0074H-E	AP0094H-E	AP0124H-E	AP0154H-E	AP0184H-E	AP0244H-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.)	(mm)	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 (High/Mid/Low)	(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*4BH-E**

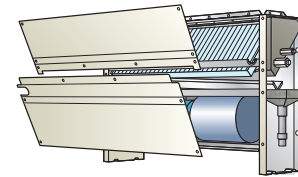


Cool air makes for a pleasant indoor environment

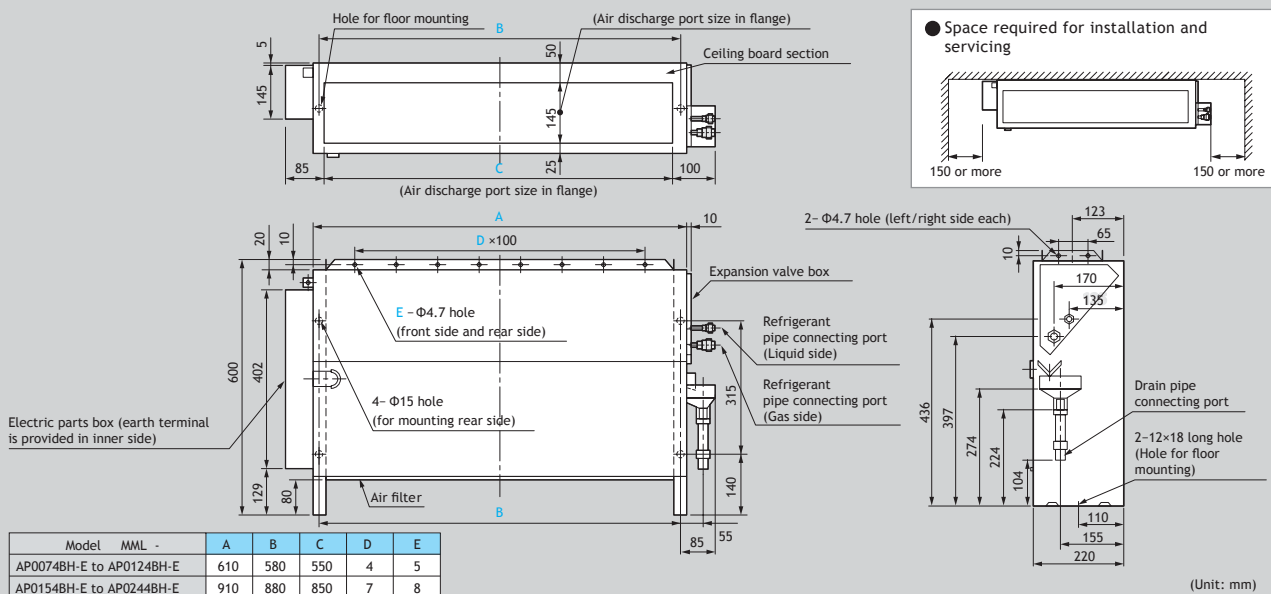
Install it under a window and air-condition any room effectively.

Easy maintenance

Simplified design of fan and drainage pipe eases maintenance.



MML-AP0074BH-E to AP0244BH-E



Technical specifications

Model name	MML-	AP0074BH-E	AP0094BH-E	AP0124BH-E	AP0154BH-E	AP0184BH-E	AP0244BH-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			1,145		
	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		ø12.7		ø15.9	
	Liquid side	(mm)	ø6.4				ø9.5	
	Drain port (nominal dia.)	(mm)	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

Fresh air intake indoor unit type

MMD-AP*HFE**



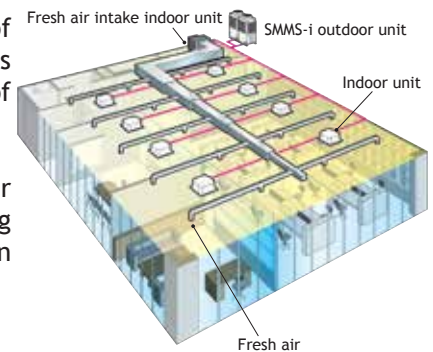
Air controller for fresh-air intake

Outside static pressure maximum 230 Pa (in case of 50 Hz of 5HP). Use of high-performance filter provides more comfortable room environment. Introduces outdoor air at a temperature close to that of the indoor air. Primary processing of fresh outdoor air.

Fresh-air intake often influences the system, rendering normal control of the air conditioner difficult, or placing large loads on the system and its cooling performance. Therefore it is frequently adopted to handle the fresh air to a certain condition before the fresh air will enter in the main air conditioner.

This device is known as a fresh air intake indoor unit.

NOTE: The fresh air intake indoor unit is an air conditioner provided to handle the fresh air load and is not to control the room temperature. For correspondence to the load of the indoor air controller, set an air conditioner separately.



Technical specifications

Model name		MMD-	AP0481HFE	AP0721HFE	AP0961HFE
Cooling/Heating capacity (Note 1)		(kW)	14.0/8.9	22.4/13.9	28.0/17.4
Electrical characteristics	Power requirements	1-phase 50 Hz 230 V (220-240 V)/60 Hz 220 V			
	Power consumption 50 Hz/60 Hz	(kW)	0.28/0.34	0.45/0.55	0.52/0.65
External dimensions	Height	(mm)	492		
	Width	(mm)	892	1,392	
	Depth	(mm)	1,262		
Total weight		(kg)	93	144	
Fan unit	Standard air flow	(m ³ /h)	1,080	1,680	2,100
	Motor output	(kW)	0.160		
	External static pressure 50 Hz/60 Hz	(w)	170-210-230 / 115-215-260	140-165-180 / 150-210-235	160-190-205 / 80-180-220
	Air flow limit Lower limit/Upper limit	(mm)	756/1,188	1,176/1,848	1,470/2,310
Connecting pipe	Gas side	(mm)	ø15.9		
	Liquid side	(mm)	ø9.5		
	Drain port	(mm)	25		
Sound pressure level*2 (Note 2) (High/Mid/Low)		(dB(A))	45/43/41	46/45/44	
Sound power level (High/Mid/Low)		(dB(A))	60/58/56	61/60/59	
Operation Range	Cooling (Note 3)	(°C)	5 - 43		
	Heating (Note 4)	(°C)	-5 - 43		

* The setting temperature is 16 - 27°C (standard FCU...18 - 29°C).

* An optional humidifier is not available with fresh air intake indoor unit.

* Height difference between fresh air intake indoor units must be within 0.5 m. Height difference between fresh air intake indoor unit and standard FCU must be within 30 m.

NOTE 1 Rated conditions Cooling: Outdoor air temperature 33°C DB/28°C WB setting temperature 18°C
Heating: Outdoor air temperature 0°C DB/-2.9°C WB setting temperature 25°C
Piping: Length 7.5 m / Height 0 m

NOTE 2 Normally, the values measured in the actual operating environment become large than the indicated values due to the effects of external sound.

NOTE 3 * When supply air temperature is "setting temperature + 3°C" or less, fresh air intake indoor unit operates as FAN mode.

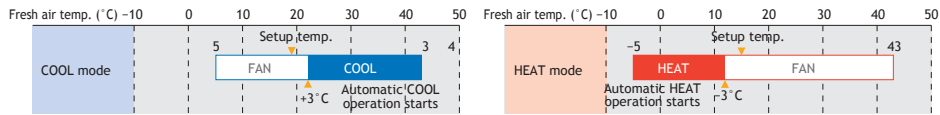
* When supply air temperature is 19°C or less, Fresh Air Intake Indoor unit operates as FAN mode.

NOTE 4 * When supply air temperature is "setting temperature -3°C" or over, fresh air intake indoor unit operates as FAN mode.

Use Conditions

• In COOL mode, if temperature of the fresh air is below the setup temp. of +3°C, FAN status is automatically made. When temperature of the fresh air is below 19°C, FAN status is also made regardless of the setup temperature.

• In HEAT mode, if temperature of the fresh air is above the setup temp. -3°C, FAN status is automatically made. When temperature of the fresh air is above 15°C, FAN status is also made regardless of the setup temperature.



Operable mode and discharge temperature setup range

Operation mode	At shipment from factory	Setup range
COOL	18°C	16 to 27°C
HEAT	25°C	16 to 27°C

MMD-AP0481HFE to AP0961HFE

Long hole for M10 hanging bolt

Type	Hole dia.-Width x Length
0481	4-Φ12 x 40
0721, 0961	4-Φ12 x 92

● Space required for installation and servicing

Refrigerant pipe connecting port (Gas pipe M)

Refrigerant pipe connecting port (Liquid pipe N)

Electric parts box (With cover)

Blow-off port

Discharge temp sensor

Discharge port connecting flange (K) (Accessory for main unit of product)

Drain pipe connecting port

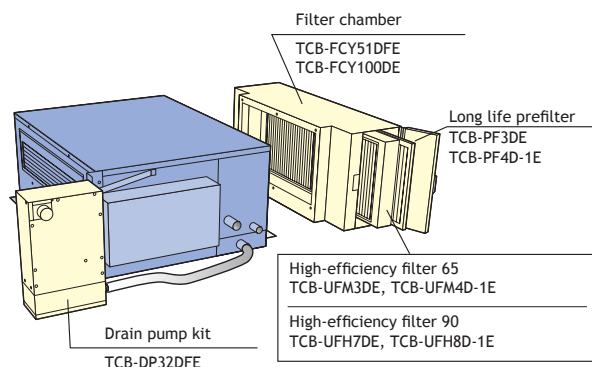
Suction port

Suction port connecting flange (L) (Accessory for main unit of product)

Model MMD-	A	B	C	D	E	F	G	H	I	J	K	L	M	N
AP0961HFE	1392	1260	250	250	250	250	250	250	250	250	10-M6	10-M6	φ22.2 brazing	φ12.7 flare
AP0721HFE	1392	1260	250	250	250	250	250	250	250	250	10-M6	10-M6	φ22.2 brazing	φ12.7 flare
AP0481HFE	892	810	215	107.5	107.5	215	—	250	250	—	8-M6	6-M6	φ 15.9 flare	φ 9.5 flare

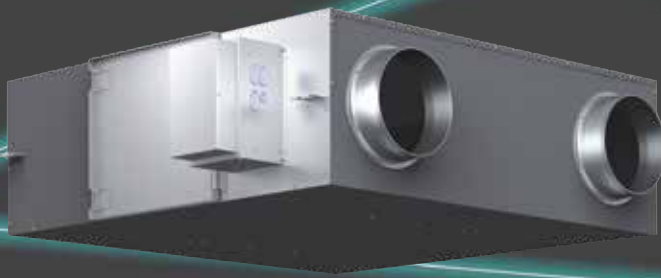
(Unit: mm)

Options



Air to air heat exchanger with DX-coil

MMD-VN*HEXE/HEXE2**



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.

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.



Remote controller
NRC-01HE

Technical specifications

Model name		MMD-	VN502HEXE	VN802HEXE	VN1002HEXE	
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 / 1-phase 60Hz 220V (Separate power supply for indoor units required.)		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)	34.5/36.0	38.0/37.0	40.0	
External Dimensions	Height	(mm)	430			
	Width	(mm)	1,140	1,189		
	Depth	(mm)	1,690	1,739		
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:

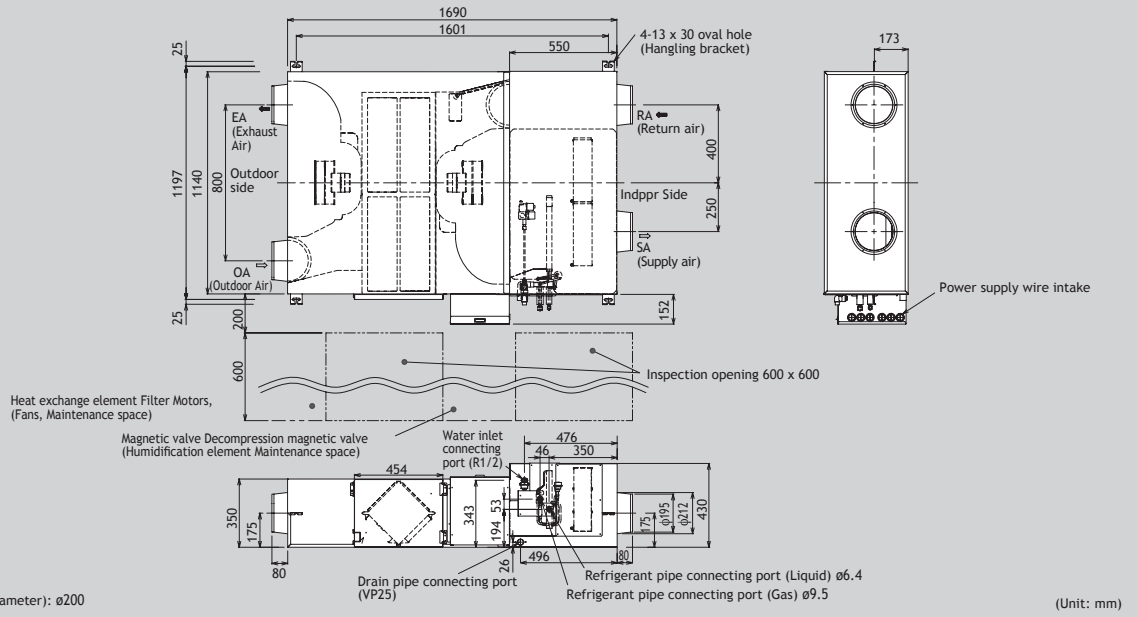
Cooling capacities are based on : indoor temperature :27 °CDB/19°CWB, Outdoor temperature : 35°CDB

Heating capacities are based on : indoor temperature :20 °CDB, Outdoor temperature : 7 °CDB/6°CWB

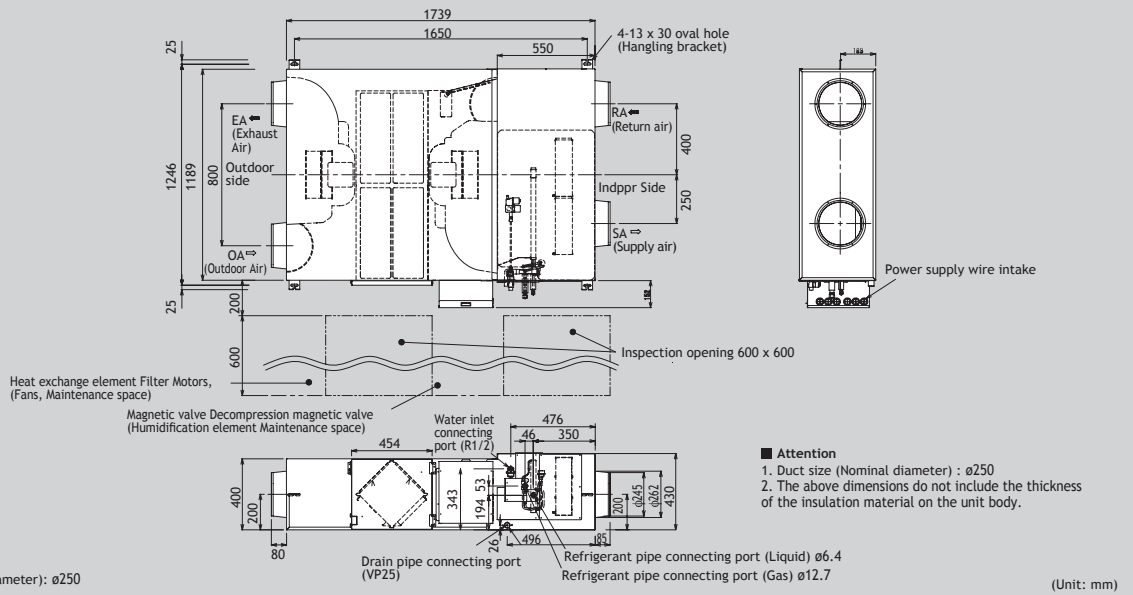
Fan is based on High and Middle

(): The figures in () indicate the heat reclaimed from the heat recovery ventilator.

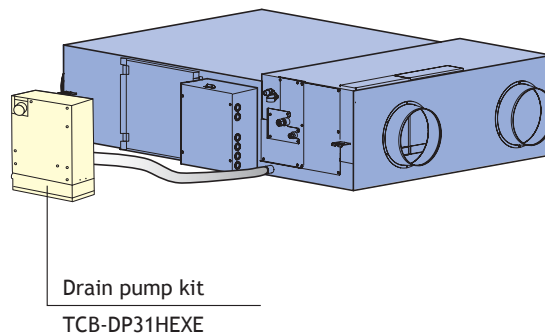
MMD-VN502HEXE



MMD-VN802HEXE to VN1002HEXE/2



Options



Air to air heat exchanger with DX-coil, humidifier

MMD-VNK2HEXE**



Technical specifications

Model name		MMD-	VNK502HEXE	VNK802HEXE	VNK1002HEXE	
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 (220V-240V) (Separate power supply for indoor units is required.)				
Temperature exchange efficiency 50Hz / 60Hz	High	(%)	70.5	70.0	65.5	
	Mid	(%)	70.5	70.0	65.5	
	Low	(%)	71.5	72.5	67.5	
Enthalpy exchange efficiency 50Hz / 60Hz	Cooling	High	(%)	56.5	56.0	52.0
		Mid	(%)	56.5	56.0	52.0
		Low	(%)	57.5	59.0	54.5
	Heating	High	(%)	68.5	70.0	66.0
		Mid	(%)	68.5	70.0	66.0
		Low	(%)	69.0	73.0	68.5
Power input (Heat exchange mode)	High	(kW)	0.305	0.530	0.575	
	Mid	(kW)	0.285	0.485	0.565	
	Low	(kW)	0.240	0.350	0.520	
Running current	High	(A)	1.33	2.37	2.56	
	Mid	(A)	1.24	2.14	2.51	
	Low	(A)	1.03	1.54	2.31	
Fan unit	Standard air flow	High	(m ³ /h)	500	800	950
		Mid	(m ³ /h)	500	800	950
		Low	(m ³ /h)	440	640	820
	External static pressure	High	(Pa)	95	105	110
		Mid	(Pa)	85	85	90
		Low	(Pa)	95	90	115
Humidifier (*2)	System	Permeable film humidifier				
	Amount	(kg/h)	3.0	5.0	6.0	
	Feed water pressure	(MPa)	0.02-0.49			
Sound pressure	High	(dB)	36.5	40.0	42.0	
	Mid	(dB)	35.5	39.0	41.0	
	Low	(dB)	33.5	38.0	39.0	
External Dimensions	Height	(mm)	430	430	430	
	Width	(mm)	1,140	1,189	1,189	
	Depth	(mm)	1,690	1,739	1,739	
Total weight		(kg)	91	111	112	
Connecting piping	Gas side	(mm)	ø9.5	ø12.7	ø12.7	
	Liquid side	(mm)	ø6.4	ø6.4	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

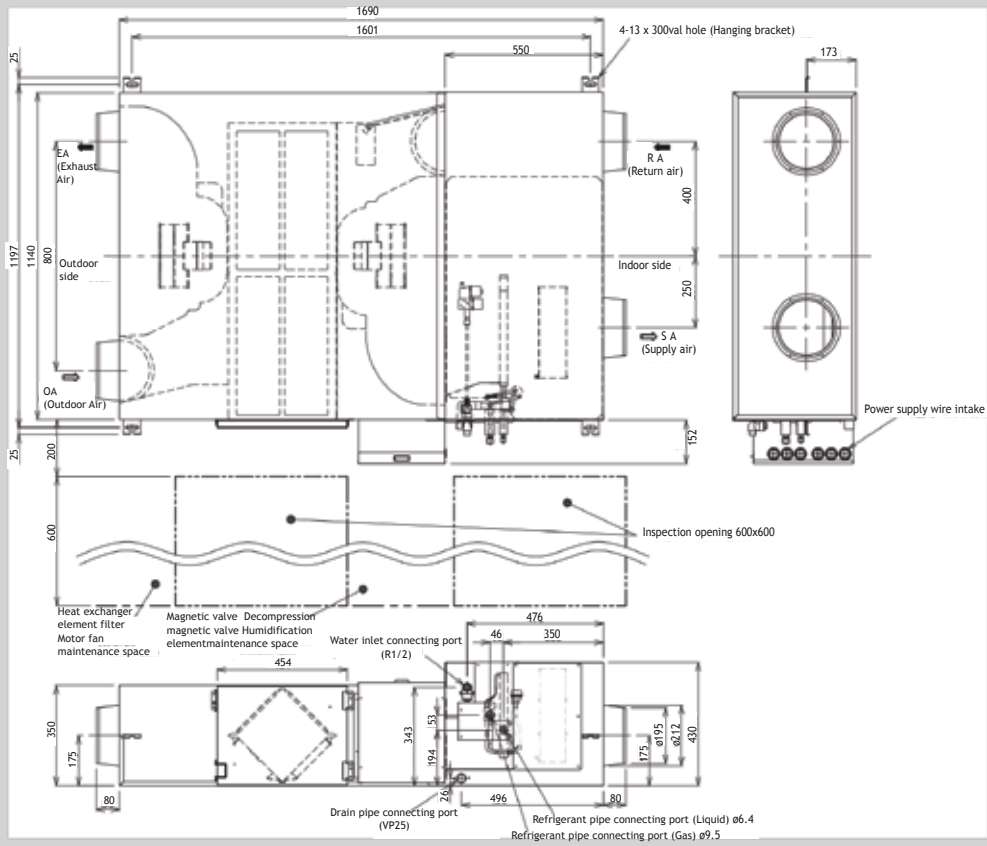
Fan is based on High and Middle

(): The figures in () indicate the heat reclaimed from the heat recovery ventilator.

(*2) Water with a hardness of no more than 100 mg/liter must be used as the water which is supplied to the humidifier.

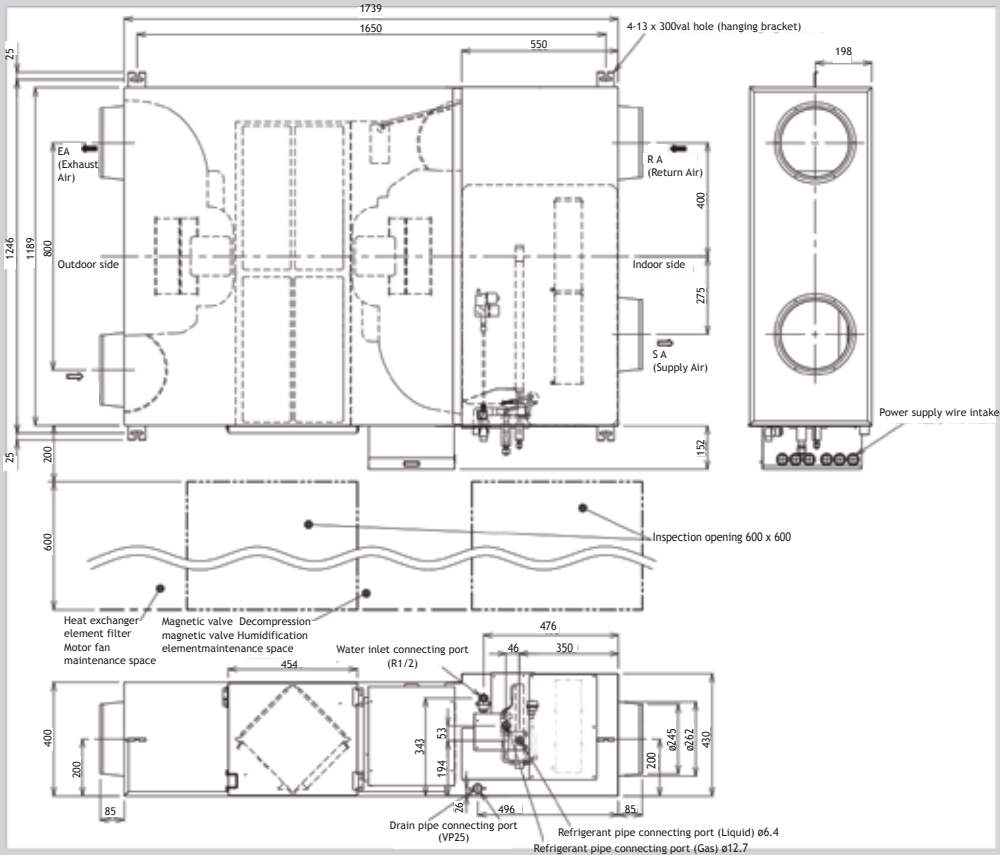
A water softener must be installed if the water to be supplied has a hardness of more than 100 mg/liter.

MMD-VNK502HEXE



(Unit: mm)

MMD-VNK802HEXE to VNK1002HEXE



(Unit: mm)

Air-to-air heat exchanger (Standalone 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.

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.

Easy maintenance

The heat exchange element can be washed in water.



Remote controller
NRC-01HE

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 (m ³ /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			1,140 x 1,140 x 350		1,189 x 1,189 x 400		1,189 x 1,189 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.

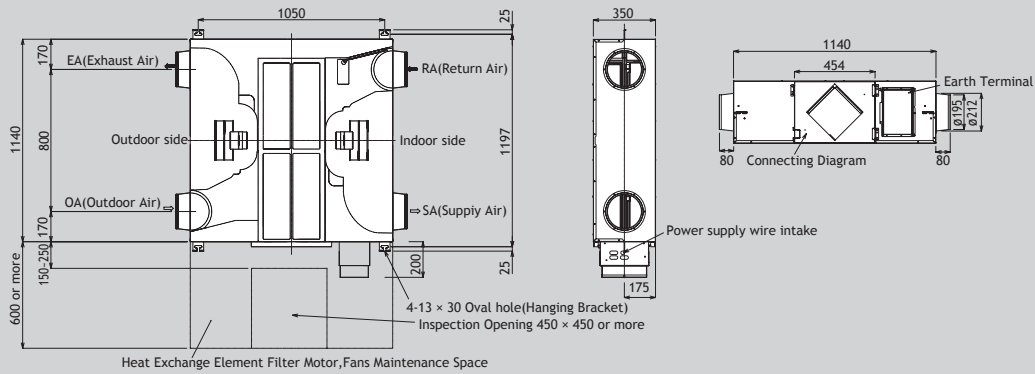
* Sound pressure level is measured 1.5m below the center of the unit.

* 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

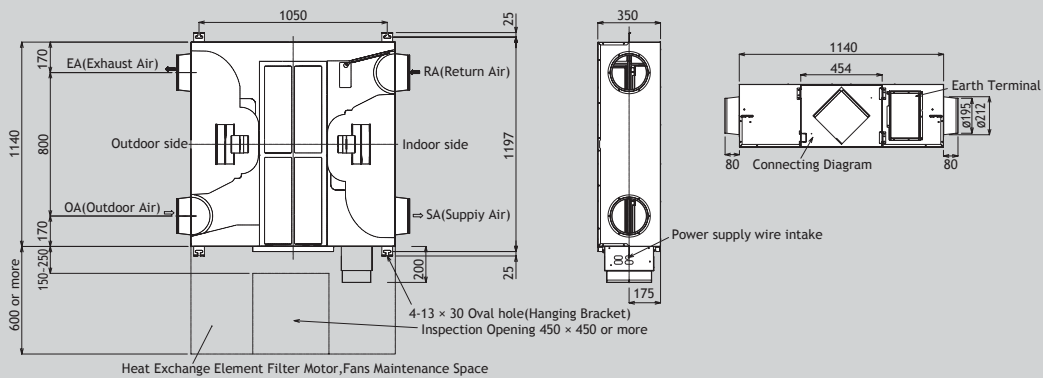
VN-M150HE to VN-M350HE



Duct size (Nominal Diameter): $\phi 200$

(Unit: mm)

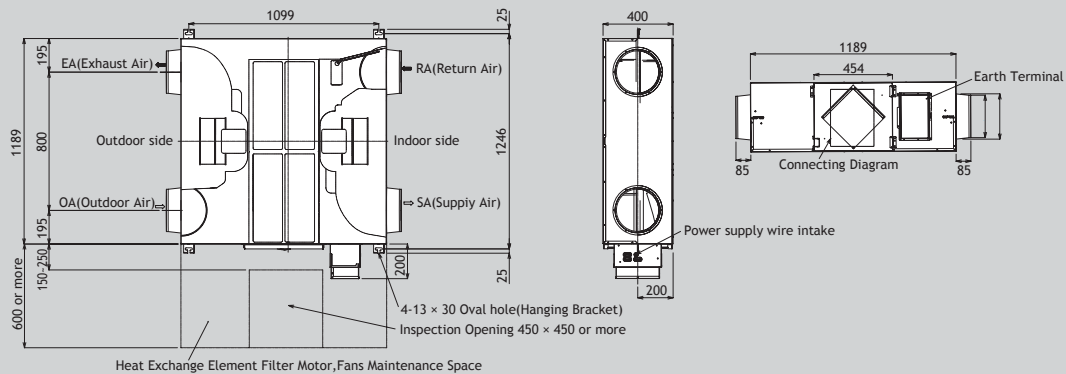
VN-M500HE, VN-M650HE



Duct size (Nominal Diameter): $\phi 200$

(Unit: mm)

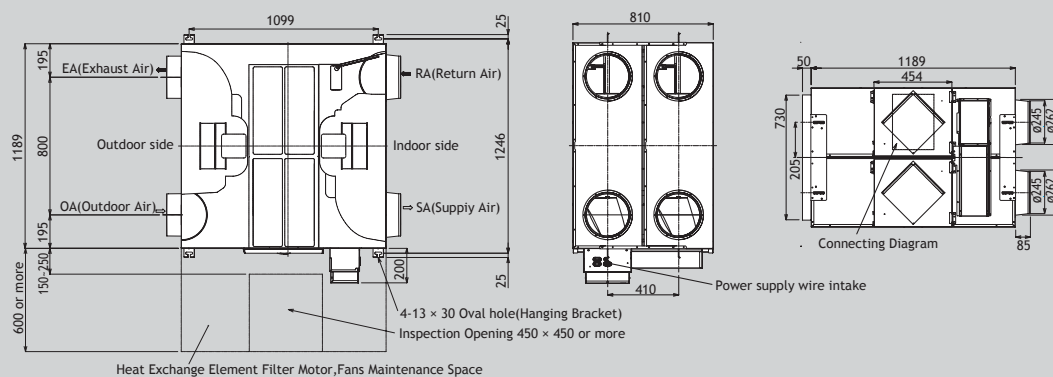
VN-M800HE, VN-M1000HE



Duct size (Nominal Diameter): $\phi 250$

(Unit: mm)

VN-M1500HE, VN-M2000HE



Duct size (Nominal Diameter): $\phi 250$

(Unit: mm)

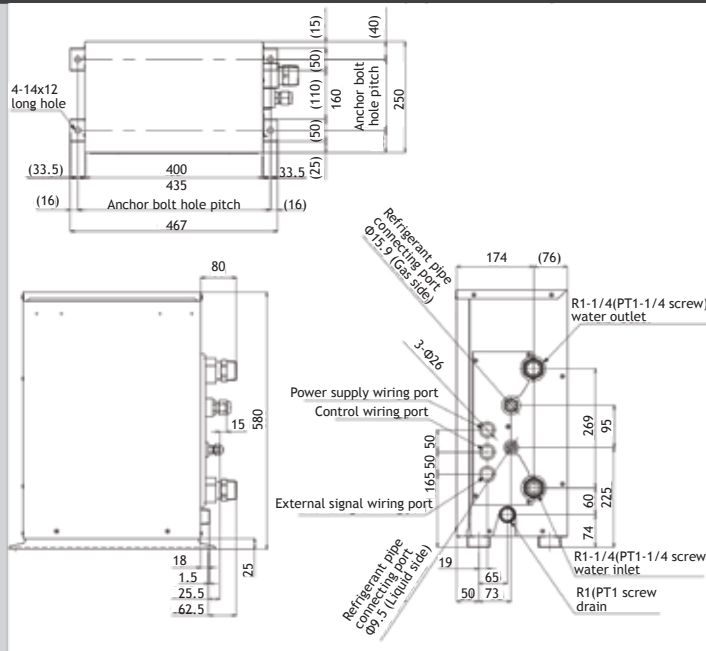
Hot water module type

MMW-AP*1LQ-E**



- To design and produce a low temperature Hot Water Module, capable of producing up to 50 °C outlet water temperature, whilst maximizing the performance and efficiency of the entire VRF system.
- To be used in both space heating and domestic hot water applications. Typical applications include Hotel, Office and residential apartment suits.
- To create a single solution for our customers heating, cooling and domestic hot water requirements.

MMK-AP0271LQ-E, AP0561LQ-E



(Unit: mm)

Technical specifications

Model name	MMU-	MMW-AP0271LQ-E	MMW-AP0561LQ-E
Cooling/Heating capacity	(kW)	8.0	16.0
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220-240V)	
	Power consumption (kW)	0.014	0.014
External dimensions	Height (mm)	580	
	Width (leg included) (mm)	400 (467)	
	Depth (mm)	250	
Total weight	(kg)	17.8	20.3
Water flow rate	(m ³ /h)	1,374/1,170	2,748/2,334
Water flow rate range	(l/s)	22.9/19.5	45.8/38.9
Connecting pipe	Gas side (mm)	ø15.9	
	Liquid side (mm)	ø9.5	
	Water pipe	R1-1/4	
Operating range ambient	(°C WB)	-20.0 - 19.0	

Note 1 : Rated conditions: entering condenser water temp. 30 °C leaving condenser water temp. 35 °C Outdoor air temp. 7 °CDB / 6 °CWB
The standard piping means that mean pipe length is 5 m, branching pipe length is 2.5 m of branch piping connected with a 0 meter height.

Note 2 : The source voltage must not fluctuate more than ±10 %.

Note 3 : The unit is packed in a sideways state.

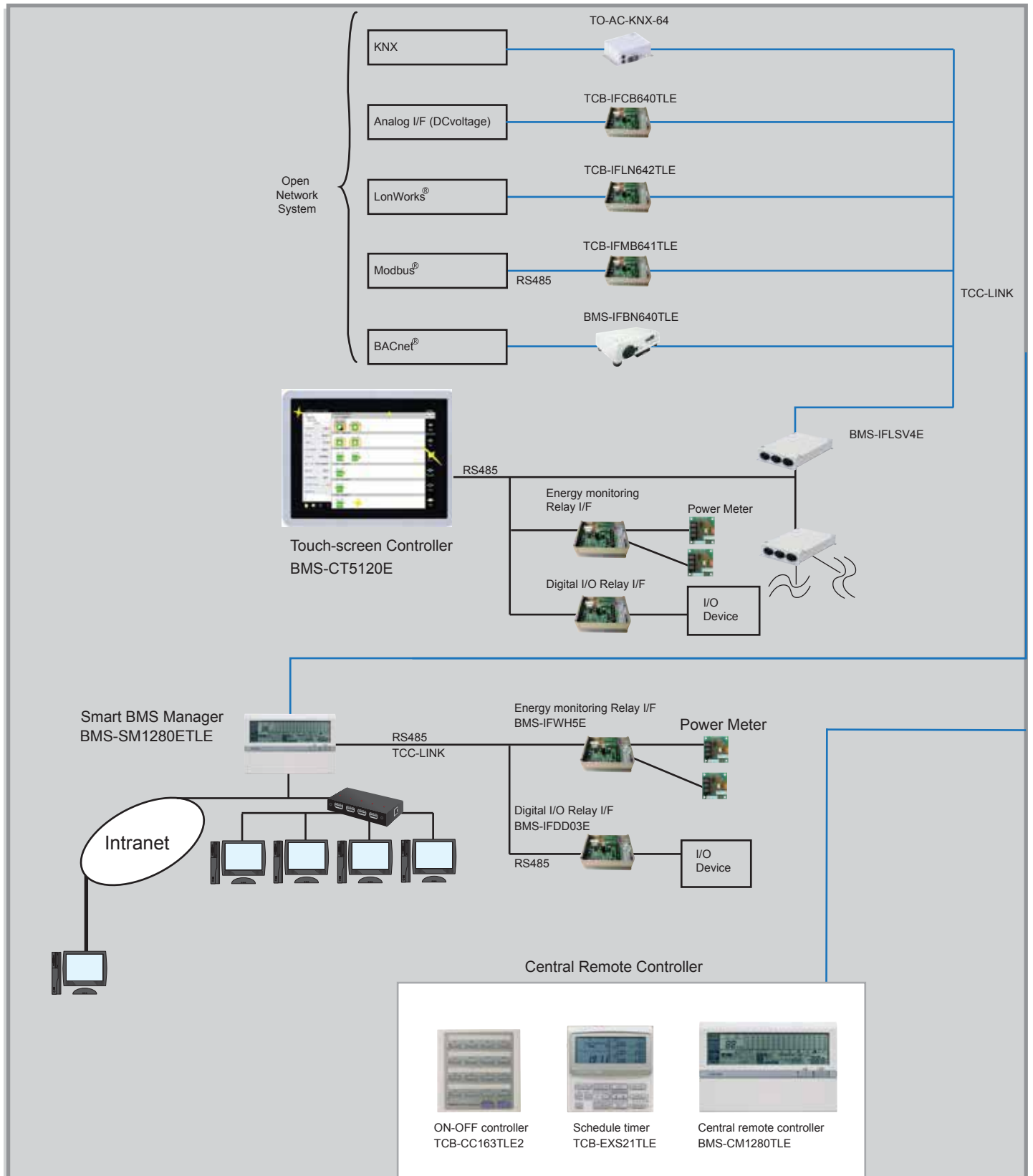
Note 4 : This specification is value as of May, 2014, please note that specification is subject to change without notice.

Indoor unit accessories

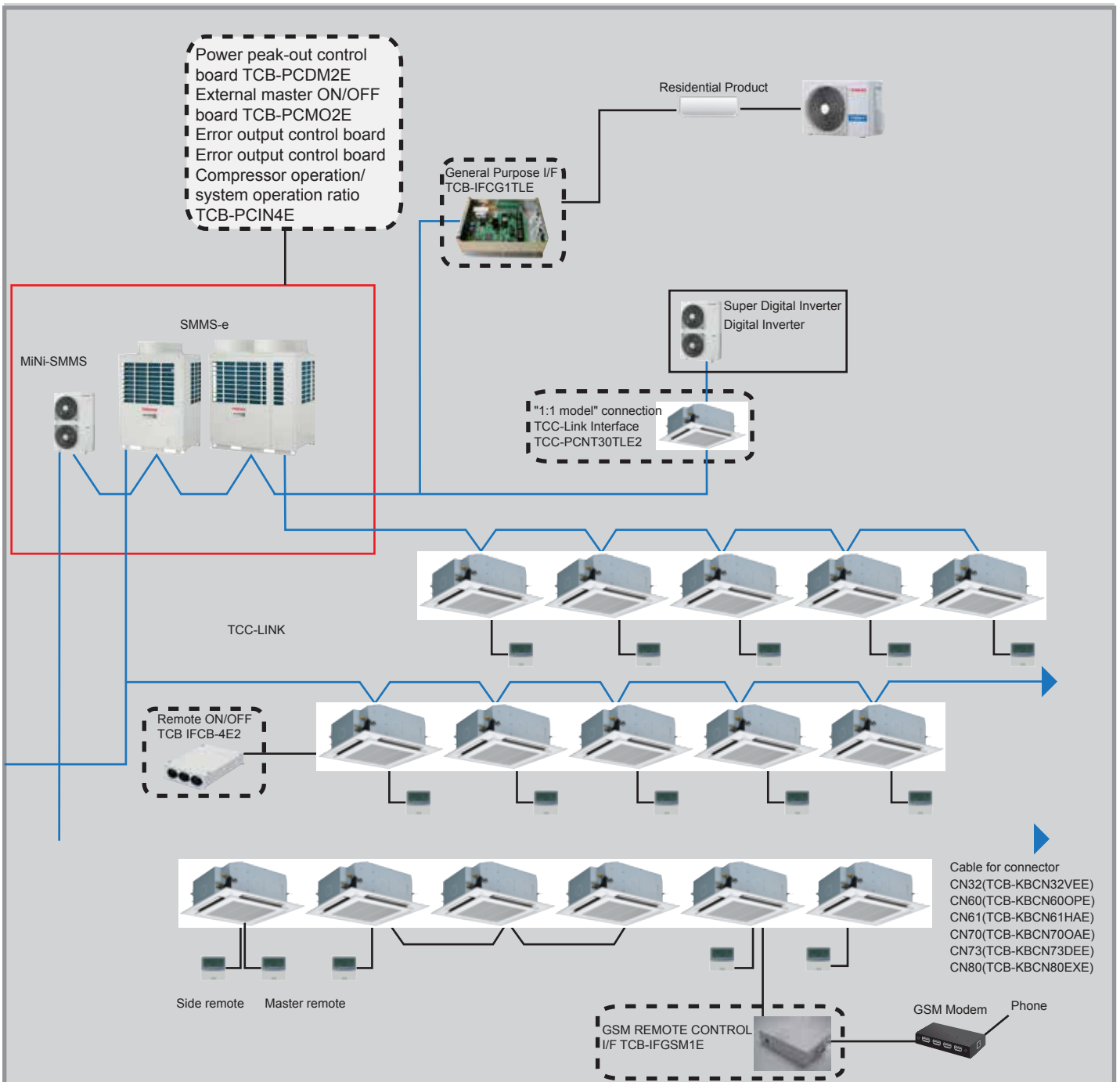
Indoor unit	Parts Name	Model Name	Applied Model	Notes	Remarks
4-way air discharge cassette type	Ceiling panel	RBC-U31PGP(W)-E	MMU-AP***4HP-E	Required accessory	Use with TCB-GFC1602UE
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)	
	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 o air discharge port (3 pcs.)	
Compact 4-way cassette (600 × 600) type	Ceiling panel	RBC-UM11PG(W)E	MMU-AP***4MH-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)	
2-way air discharge cassette type	Ceiling panel	RBC-UW283PG(W)-E	MMU-AP0072 to 0152WH	Required accessory	
		RBC-UW803PG(W)-E	MMU-AP0182 to 0302WH		
		RBC-UW1403PG(W)-E	MMU-AP0362/0482/0562WH		
	Super long life filter	TCB-LF283UW-E	MMU-AP0072 to 0152WH	Dust collecting effect: 50% (Weight method)	Use with TCB-FC283UW-E
		TCB-LF803UW-E	MMU-AP0182 to 0302WH		
		TCB-LF1403UW-E	MMU-AP0362/0482/0562WH		
	Filter chamber	TCB-FC283UW-E	MMU-AP0072 to 0152WH	For super long life filter	
		TCB-FC803UW-E	MMU-AP0182 to 0302WH		
		TCB-FC1403UW-E	MMU-AP0362/0482/0562WH		
Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH	For fresh air intake by using the knockout hole of indoor unit.		
1-way air discharge cassette type	Ceiling panel	RBC-UY136PG	MMU-AP***4YH-E	Required accessory	
		RBC-US21PGE	MMU-AP***4SH-E	Required accessory	
	Front air discharge unit	TCB-BUS21HWE		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
	Auxiliary fresh air flange	TCB-FF101URE2			
Concealed duct type	Spigot shaped flange	TCB-SF56C6BPE	MMD-AP0076 to 0186BHP-E		
		TCB-SF80C6BPE	MMD-AP0246/0276/0306BHP-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0566BHP-E		
Concealed duct high static pressure type	Long Life Filter Kit	TCB-LK801D-E	MMD-AP0186/0246/0276HP-E		
		TCB-LK1401D-E	MMD-AP0366/0486/0586HP-E		
	Spigot Shaped Flange	TCB-SF80C6BPE	MMD-AP0186/0246/0276HP-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0586HP-E		
	Auxiliary fresh air flange	TCB-SF160C6BPE	MMD-AP***6HP-E		
	High-efficiency filter 65	TCB-UFM3DE	MMD-AP0724/0964H-E	Dust collecting effect: 65%(NBS Colorimetric method)	
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0724/0964H-E	Dust collecting effect: 90%(NBS Colorimetric method)	
	Long life prefilter	TCB-PF3DE	MMD-AP0724/0964H-E	Dust collecting effect: 50%(Weight method)	
	Filter chamber	TCB-FCY100DE	MMD-AP0724/0964H-E	For high-efficiency filter or long life prefilter	
Drain pump kit	TCB-DP32DE	MMD-AP0724/0964H-E	Stand-up 330 mm or less (from bottom face of ceiling)		
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SPH-E	For fresh air intake by using the knockout hole of indoor unit. (dia.=100)	
Ceiling type	Drain pump kit	TCB-DP31CE	MMC-AP0157/0187HP-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP13CE
			MMC-AP0247 to 0567HP-E		
	Elbow piping kit	TCB-KP13CE	MMC-AP0157/0187HP-E	Needed when drain pump kit is used	
	TCB-KP23CE	MMC-AP0247 to 0567HP-E			
Air to Air Heat Exchanger with DX-coil	Drain pump kit	TCB-DP31HEXE	MMD-VN502 to 1002HEXE	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 Colorimetric method)	Use with TCB-PF3DE
		TCB-UFM4D-1E	MMD-AP0481HFE		
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0721/0961HFE	Dust collecting effect: 90% (NBS Colorimetric method)	Use with TCB-PF3DE
		TCB-UFH8D-1E	MMD-AP0481HFE		
	Long life prefilter	TCB-PF3DE	MMD-AP0721/0961HFE	Dust collecting effect: 50% (Weight method)	
		TCB-PF4D-1E	MMD-AP0481HFE		
	Filter chamber	TCB-FCY51DFE	MMD-AP0481HFE	For high-efficiency filter or long life prefilter	
		TCB-FCY100DE	MMD-AP0721/0961HFE		
Drain pump kit	Drain pump kit		MMD-	Stand-up 330 or less (from bottom face of ceiling)	

Accessory for 4-way air discharge cassette type: combination pattern		1	2	3	4	5	6
		Ceiling panel	Fresh air inlet box + 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 air filter chamber	OK			OK	OK	OK
4	Auxiliary fresh air flange	OK	OK	OK		OK	OK
5	Spacer for height adjustment	OK	-	OK	OK		OK
6	Air discharge direction kit	OK	OK	OK	OK	OK	

Air-conditioning management system on site



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.
4. KNX®: Registered trademark by knx.org



Wire remote controller/wireless remote controller

 <p>Smart Phone Application Interface TO-RC-WIFI-1</p>	 <p>Lite-Vision plus Remote Controller RBC-AMS51E-ES RBC-AMS51E-EN</p>	 <p>Wired remote controller with Weekly timer RBC-AMS41E</p>	 <p>Wired remote controller RBC-AMT32(31)E</p>	 <p>Simple remote controller RBC-AS41E2</p>	 <p>Wireless remote controller</p>	 <p>Remote Sensor TCB-TC41LE</p>
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Wired remote controller



Lite-Vision plus Remote Controller
RBC-AMS51E-ES
RBC-AMS51E-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-AS41E

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

Wireless remote controller



Wireless remote controller kit & sensor unit
(receiver unit)

- Start/Stop •Changing mode •Temperature setting •Airflow 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



RBC-AX33CE
Integral receiver
(For ceiling) (MMC-AP***7HP-E)
(MMU-AP***4SH-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 ***4YH-E/SH-E)



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



RBC-AX32UW(W)-E
Integral receiver (For 2-way air discharge cassette)
(MMU-AP***2WH)

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)

Advance control systems

Smart Manager with Data Analyzer

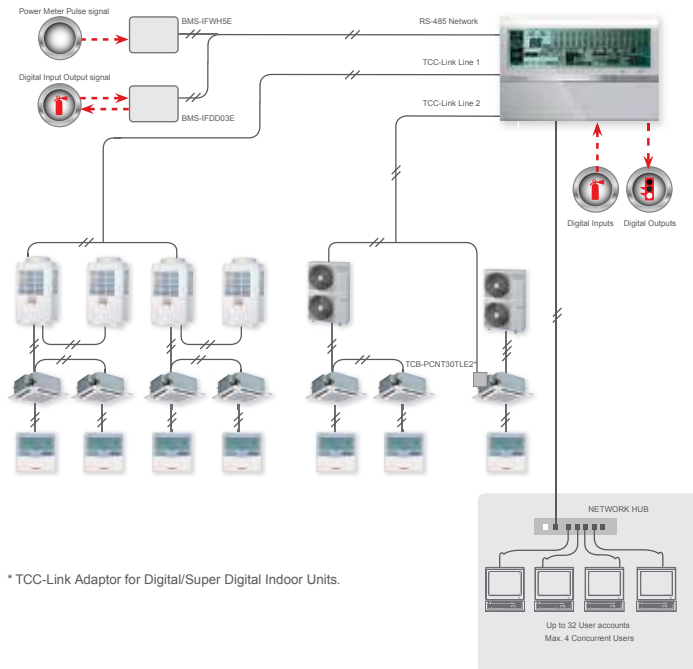
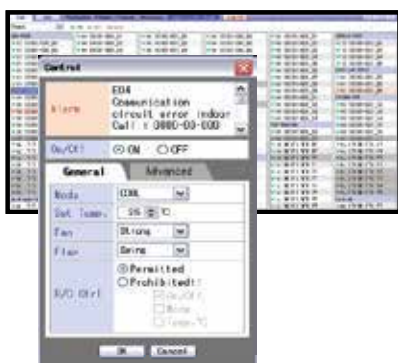


BMS-SM1280ETLE

The Smart Manager has the same hardware Control Function as the BMS-CM1280TLE Controller, but also has the ability of control from a Local Area Network and , with the use of an additional Interface, is capable of Energy Monitoring and Report Creation Functions. This controller is ideal where advanced control, Energy Monitoring, advanced scheduling or access to individual Air Conditioners is required from networked computer systems.

Web Browser Control Software Features

- List View available -Displays all Indoor Units from one screen .
- Set View available – Shows Basic Indoor Unit settings on main screen g
- Advanced Operation and Master schedule functions available
- 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)



* TCC-Link Adaptor for Digital/Super Digital Indoor Units.

Equipment List

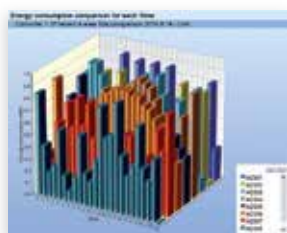
Device	Number of pieces	Description
BMS-SM1280ETLE	1	Up to 128 indoor unit can be connected to Smart Manager
BMS-IFDD03E	Up to 4 Boards	Interface for Digital Input & Outputs. Can connect up to 8 Power Meters per Board (Optional)
BMS-IFWH5E	Up to 4 Boards	Interface for Power Meter (Energy Monitoring Option only)

Locally Procured Item

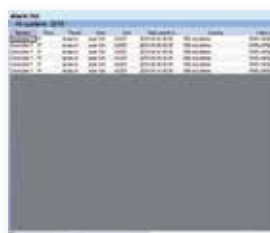
Device	Number of pieces	Description
Power Meter		Digital Energy Meter with Pulse Output (Energy Monitoring Option only)
PC		For Operation Monitoring
Network Hub		For LAN Connection.



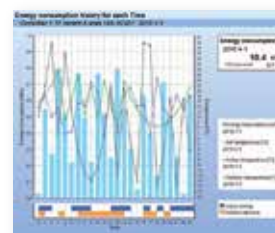
Energy consumption history (days)



Energy consumption comparison



Alarm list



Energy consumption history (Hours)

Advance control systems

Touch-screen controller



Touch-screen Controller
BMS-CT5120E



- Touch-screen controller
Using the touch-screen controller provides a clear display and enables easy operation. A maximum of 512 units are controllable using the one-touch controller.
- Function
 - Operation monitoring
 - Operation control
 - Operation Schedule
 - Error Code
 - Alarm List
 - Energy monitoring/Billing
 - Digital I/O Signal Control



Up to 12
Relay Interface BMS-IFLSV4E
For TCS-NET

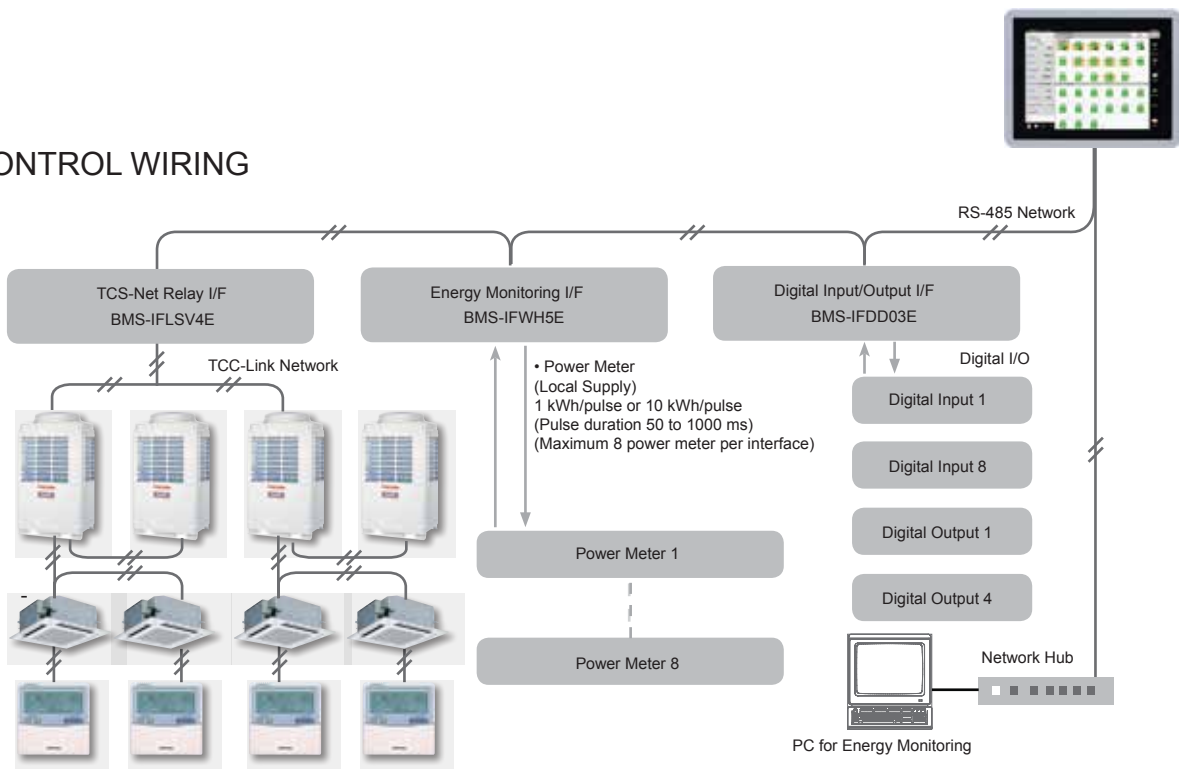


Up to 8
Relay Interface BMS-IFWH5E
For Energy Monitoring
(Optional)



Up to 8
Relay Interface BMS-IFDD03E
For Digital I/O
(Optional)

CONTROL WIRING



Open network systems

BACnet® system

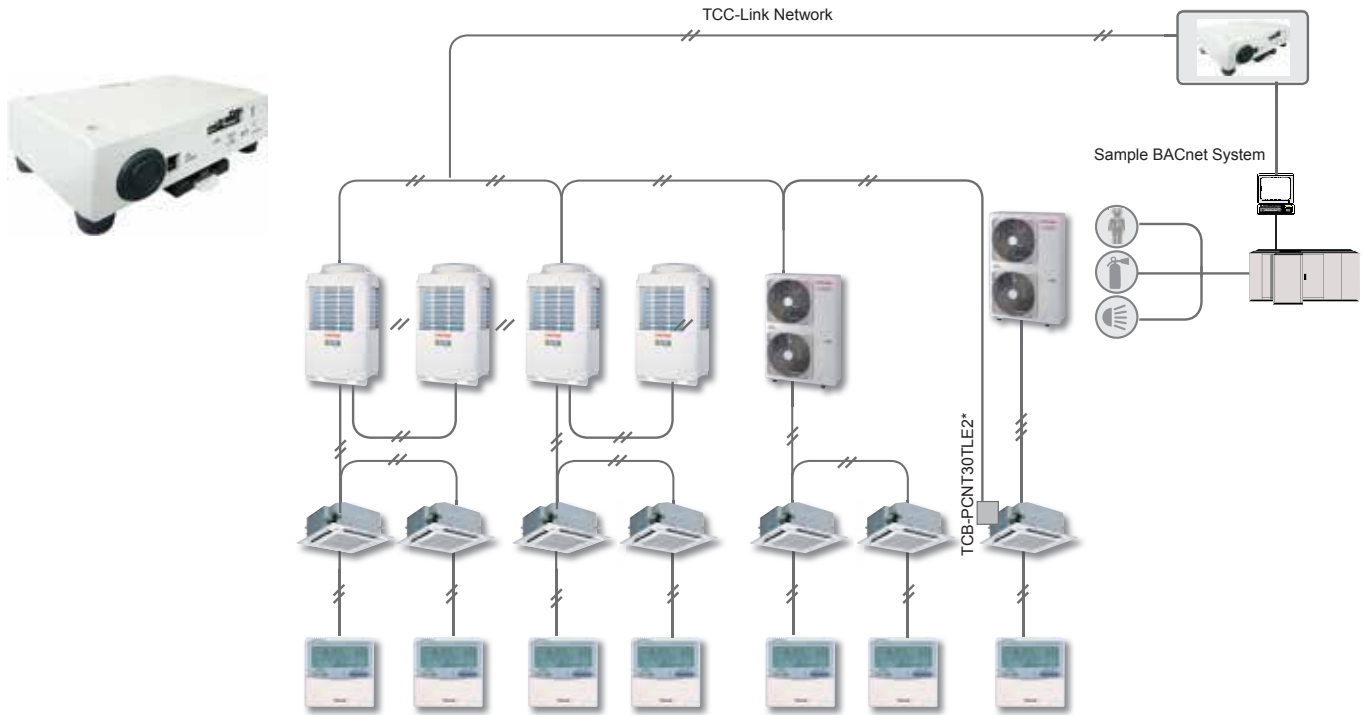
BMS-IFBN640TLE

BACnet® Server

The Toshiba BMS-IFBN640TLE BACnet Interface can be connect to the TCC-Link Central Control Network to enable control of the attached Air Conditioner product from a BACnet Building Management System.

Features

- Maximum 64 Indoor Units/Groups and 16 Outdoor Systems can be connected to a single Interface.
- TCB-PCNT30TLE2 Network adaptor required for connection of DI/SDI to BACnet System.



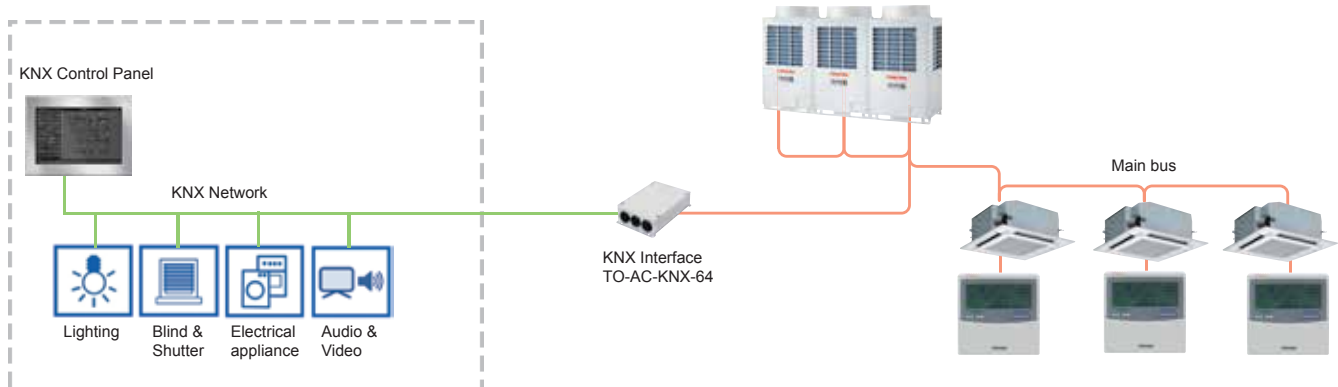
* TCC-Link Adaptor for Digital/Super Digital Indoor Units.

KNX® Interface



TO-AC-KNX-64

- KNX®
- The KNX® interface manages the SMMS-i air conditioning system as a KNX® device to communicate with the customer s Home automation. Accessible to 64 units per one , Signals and provides the following functions:
- ON/OFF
 - Mode: cool/heat/fan
 - Air flow and fan speed
 - Temperature setting
 - Filter reset



Open network systems

LonWorks®



LN Interface
TCB-IFLN642TLE

• LonWorks® LN Interface

The LonWorks® interface manages the SMMS-i air conditioning system as a Lon device to communicate with the customer's Building Management System and to monitor operational status.

A maximum of 64 units are controllable per interface.

• SNVT signal

Signals and provides the following functions:

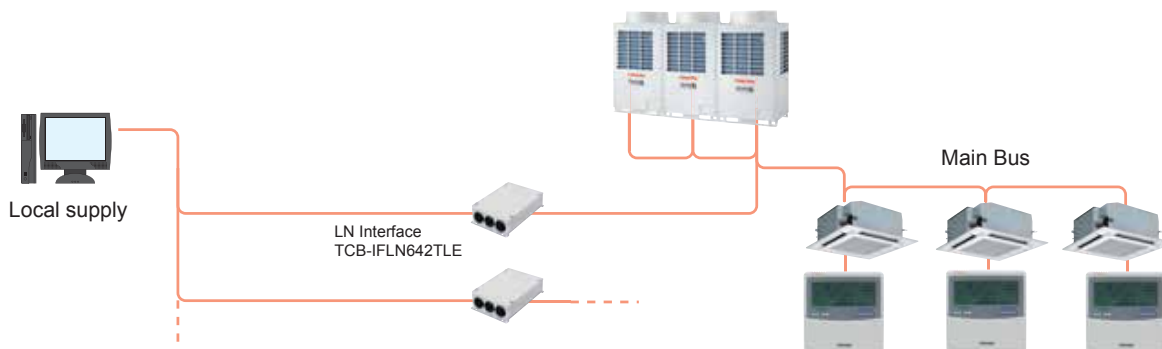
- Object signals command
- ON/OFF
- Mode: cool/heat/fan
- Temperature setting
- Central/local

• Monitoring

- ON/OFF

• Mode

- Cool/heat/fan/failure
- Temperature setting
- Room temperature
- Central/local, etc.



Modbus®



Modbus Interface
TCB-IFMB641TLE

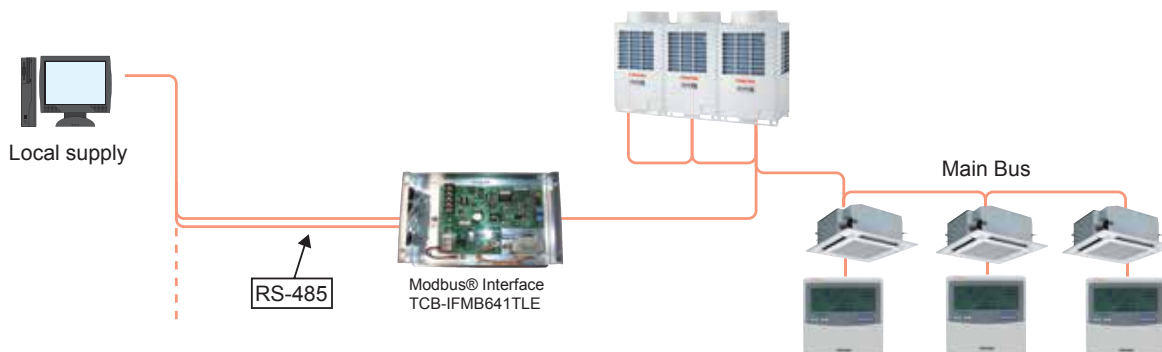
• Modbus®

The Modbus® interface manages the SMMS-i air conditioning system as a Modbus® device to communicate with the customer's Building Management System.

Accessible to 64 units per one TCB-IFMB641TLE, 15 TCB-IFMB641TLEs on one Modbus® Master (prepared by user).

Signals and provides the following functions:

- ON/OFF
- Mode: cool/heat/fan
- Air flow/Louver setting
- Temperature setting
- Filter reset
- Accumulated operation time, etc.



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

Smart phone apps



**Smart Phone Application Interface
TO-RC-WiFi-1**

User can remotely manage an Air Conditioning system using all sort of mobile devices such as Smartphones, Tablets and PC. Internet connection is necessary for operation.

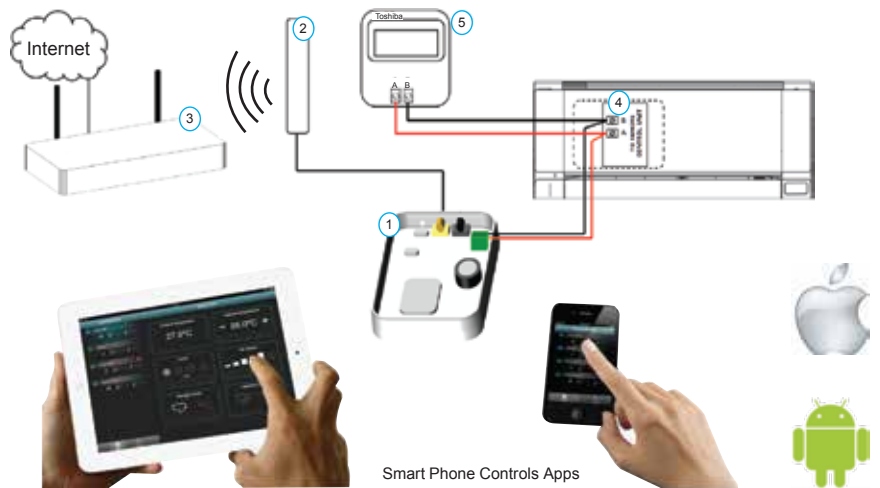
Wi-Fi adapter connect with indoor unit on wired remote controller's connection terminal (A/B).

Two type of connection possible with Toshiba LC & VRF's Indoor unit.

1:1 Individual i.e each indoor unit requires one adapter.

Group Control (Up to 8 Indoor Unit).

Function	Setting	Monitor
On/Off	✓	✓
Mode	Auto, Heat, Cool, Dry, Fan	✓
Set Point	18 - 29° C	✓
Fan speed	Auto, Low, Medium, High	✓
Louver	Swing, Fix	✓
Fault Code	Reset	Hex



Connectors

Toshiba Indoor Units have a number of Connectors built in to allow for connection and control of external equipment and control/monitoring of the Air Conditioning.

Cable Model Name	Function	Connector	Outline
TCB-KBCN32VEE	Fan output	CN32	External Ventilation fan control from Remote controller.
TCB-KBCN60OPE	Option output	CN60	Operation status signal output (cooling, heating, fan, defrost, thermo-ON).
TCB-KBCN61HAE	Operation Input / Output	CN61	External ON/OFF control, operation ON/ OFF status output, alarm status output.
TCB-KBCN70OAE	Option error input	CN70	Alarm display on Remote controller by this input.
TCB-KBCN73DEE	Demand input	CN73	Forced thermo-off control by this input.
TCB-KBCN80EXE	Outside error input	CN80	Generate check code "L30" (for 1 minutes continuously) to stop forcedly the operation.

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***4HP-E	Required accessory	Use with TCB-GFC1602UE
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)	
	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 (600 × 600) type	Ceiling panel	RBC-UM11PG(W)E	MMU-AP***4MH-E	Required accessory	For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)
	Auxiliary fresh air flange	TCB-FF101URE2			
2-way air discharge cassette type	Ceiling panel	RBC-UW283PG(W)-E	MMU-AP0072 to 0152WH	Required accessory	
		RBC-UW803PG(W)-E	MMU-AP0182 to 0302WH		
		RBC-UW1403PG(W)-E	MMU-AP0362/0482/0562WH		
	Super long life filter	TCB-LF283UW-E	MMU-AP0072 to 0152WH	Dust collecting effect: 50% (Weight method)	Use with TCB-FC283UW-E
		TCB-LF803UW-E	MMU-AP0182 to 0302WH		Use with TCB-FC803UW-E
		TCB-LF1403UW-E	MMU-AP0362/0482/0562WH		Use with TCB-FC1403UW-E
	Filter chamber	TCB-FC283UW-E	MMU-AP0072 to 0152WH	For super long life filter	
		TCB-FC803UW-E	MMU-AP0182 to 0302WH		
TCB-FC1403UW-E		MMU-AP0362/0482/0562WH			
Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH	For fresh air intake by using the knockout hole of indoor unit.		
1-way air discharge cassette type	Ceiling panel	RBC-UY136PG	MMU-AP***4YH-E	Required accessory	
		RBC-US21PGE	MMU-AP***4SH-E	Required accessory	
	Front air discharge unit	TCB-BUS21HWE		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
Auxiliary fresh air flange	TCB-FF101URE2				
Concealed duct type	Spigot shaped flange	TCB-SF56C6BPE	MMD-AP0076 to 0186BHP-E		
		TCB-SF80C6BPE	MMD-AP0246/0276/0306BHP-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0566BHP-E		
Concealed duct high static pressure type	Long Life Filter Kit	TCB-LK801D-E	MMD-AP0186/0246/0276HP-E		
		TCB-LK1401D-E	MMD-AP0366/0486/0586HP-E		
	Spigot Shaped Flange	TCB-SF80C6BPE	MMD-AP0186/0246/0276HP-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0586HP-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0586HP-E		
	Auxiliary fresh air flange	TCB-SF160C6BPE	MMD-AP***6HP-E		
	High-efficiency filter 65	TCB-UFM3DE	MMD-AP0724/0964H-E	Dust collecting effect: 65%(NBS Colorimetric method)	
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0724/0964H-E	Dust collecting effect: 90%(NBS Colorimetric method)	
Long life prefilter	TCB-PF3DE	MMD-AP0724/0964H-E	Dust collecting effect: 50%(Weight method)		
Filter chamber	TCB-FCY100DE	MMD-AP0724/0964H-E	For high-efficiency filter or long life prefilter		
Drain pump kit	TCB-DP32DE	MMD-AP0724/0964H-E	Stand-up 330 mm or less (from bottom face of ceiling)		
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SPH-E	For fresh air intake by using the knockout hole of indoor unit. (dia.=100)	
Ceiling type	Drain pump kit	TCB-DP31CE	MMC-AP0157/0187HP-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP13CE
		TCB-KP13CE	MMC-AP0247 to 0567HP-E		Use with TCB-KP23CE
	Elbow piping kit	TCB-KP13CE	MMC-AP0157/0187HP-E	Needed when drain pump kit is used	
		TCB-KP23CE	MMC-AP0247 to 0567HP-E		

Accessory for 4-way air discharge cassette type: combination pattern		1	2	3	4	5	6
		Ceiling panel	Fresh air inlet box + 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 air filter chamber	OK			OK	OK	OK
4	Auxiliary fresh air flange	OK	OK	OK		OK	OK
5	Spacer for height adjustment	OK	-	OK	OK		OK
6	Air discharge direction kit	OK	OK	OK	OK	OK	

Control Devices

Model Number	Reference	Description	Used with
RBC-AMT32E	Wired Remote Controller	Main wired remote controller	VRF and VRF Air-to-air heat exchangers with (DX coil) indoor units
RBC-AS41E	Simplified Wired Remote Controller	As above but designed for hotel and domestic applications	VRF and VRF Air-to-air heat exchanges with (DX coil) indoor units
NRC-01HE	Wired Remote Controller	Wired remote controller for Air-to-air heat exchanger, including with DX coil and humidifiers models	New Air-to-air heat exchangers and Air-to-air heat exchangers with DX coil
TCB-EXS21TLE	Schedule timer	Operating in weekly timer mode or schedule timer mode	VRF and VRF Air-to-air heat exchangers with (DX coil) indoor units
RBC-AMS41E	Remote controller with schedule timer	Enables to control indoor unit operation with schedule timer (7-days) allowing to program 8 functions/day + clock display	VRF and VRF Air-to-air heat exchangers with (DX coil) indoor units
RBC-AMS51E-EN RBC-AMS51E-ES	Lite-Vision plus Remote Controller	Local Controller with Multi-Language LCD display, a built-in 7-Day timer, Energy Saving options and return back function. EN =English, Italian, Polish, Greek, Russian, Turkish. ES = English, Spanish, Portuguese, French, Dutch, German	VRF and VRF Air-to-air heat exchangers with (DX coil) indoor units
RBC-AX33CE	Infra-red Remote Kit	Wireless remote controller	All ceiling units and one-way cassettes (SH series)
TCB-AX32E2	Infra-red Remote Kit	Wireless remote controller	All other units (including compact 4-way cassette)
RBC-AX32U(W)-E	Wireless remote unit kit	Wireless remote unit kit for 2-way cassette	2-way-cassette MMU-AP***2WH
RBC-AX32U(W)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	RBC-U31PG(W)-E & RBC-U31PGS(W)-E panels for 4-way cassette indoors.
RBC-AX32U(WS)-E	Wireless remote unit kit	Wireless remote unit kit for 4-way cassette	With RBC-U31PGS(WS)-E panels for 4-way cassette indoors.
TCB-TC21LE2	Remote temperature sensor	Remote temperature sensor for cassette & duct	All VRF
TCB-CC163TLE2	On / Off Controller	Enables On / Off control (Max. 16 units)	All VRF indoor units.
TCB-IFCB5-PE	Remote location On / Off Control Box	Enables remote location On / Off control	All VRF indoor units.
BMS-WB2561PWE	Web Based Controller (Web Gateway)	Gateway server. Network Intranet connection, yearly schedule, error message history, up to 256 IDUs	All VRF indoor units.
BMS-WB01GTE	Web Based Controller (Web Server)	Web server. Network Intranet connection, yearly schedule, error message history, up to 2048 IDUs All VRF indoor units.	All VRF indoor units.
BMS-CM1280TLE	Compliant Manager	Enables full control of up to 128 indoor units	All VRF indoor units.
BMS-SM1280ETLE	Smart Manager with Data analyzer	Enables full control of up to 128 indoor units with Energy Monitoring and Advanced Control Options	All VRF indoor units.



Control Devices

Model Number	Reference	Description	Used with
TO-RC-WiFi-1	WiFi Interface	Interface for smart phone application	All VRF
BMS-CT5120E	Touch Screen Controller	Enables full control of up to 512 indoor units, ML	All VRF
BMS-IFLSV4E	TCS-Net Relay Interface	Relay for integration to TCS-Net	Bacnet gateway, Touch-screens & Web based controller
BMS-IFWH5E	Energy monitoring relay interface	Energy monitoring relay interface	Touch screen controller, Compliant manager, Web based controller, Smart Manager
BMS-IFBN640TLE	BACnet	BACnet interface	Up to 64 indoor unit. All VRF indoor unit.
BMS-STBN10E	BACnet	Server Software	Enables integration with BACnet
BMS-STCC06E	Intelligent Server Software	Software package for the intelligent server	All VRF indoor units
TCB-IFLN642TLE	Lonworks® Gateway	Allows control of 64 indoor units from a Lonworks based BMS	All VRF indoor units
TCB-IFMB641TLE	Modbus Interface	Allows control of 64 indoor units from a Modbus based BMS	All VRF indoor units
TO-AC-KNX-64	KNX Interface	Allows control of 64 indoor units from a KNX based BMS/Home Auto machine	All VRF indoor units
TCB-IFCG1TLE	General purpose interface	Enables control of A/C by the DI/DO and AI/AO	All VRF indoor units
TCB-IFGSM1E	GSM control interface	Allows ON/OFF control, operation status monitoring & alarm monitoring of A/C	All VRF indoor units
TCB-PX30MUE	Terminal box	Steel Terminal box to connect to	TCB-PCNT30TLE2, TCB-IFCB5-PE
TCB-PX100PE	Terminal box	Plastic Terminal box to connect to	TCB-PCNT30TLE2, TCB-IFCB5-PE
TCB-IFCB-4E2	Application Control PC Board	Remote On/Off Control	All VRF indoor units.
TCB-IFCB5-PE	Application Control PC Board	Window Switch Remote On/Off control	All VRF indoor units.
TCB-PCDM4E	Application Control PC Board	Power Peak Cut Control	SMMS, SMMS-i, SHRM and Mini-SMMS Outdoor Units
TCB-PCMO4E	Application Control PC Board	External Master ON/OFF Control Board	SMMS, SMMS-i, SHRM and Mini-SMMS Outdoor Units
TCB-PCIN4E	Connectors	Error/Individual compressor Operation Output Control Board	SMMS SMMS i SHRM d Mi i SMMS O td U it
TCB-KBCN32VEE	Application Control PC Board	For CN32	All VRF indoor units.
TCB-KBCN60OPE		For CN60	All VRF indoor units.
TCB-KBCN61HAE		For CN61	All VRF indoor units.
TCB-KBCN70OAE		For CN70	All VRF indoor units.
TCB-KBCN73DEE		For CN73	All VRF indoor units.
TCB-KBCN80EXE		For CN80	All VRF indoor units.



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 conditioner 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 specially 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) 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

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O H S A S
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Notice: Product 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.