TOSHIBA

Leading Innovation

SMMS e

SUPER MODULAR MULTI SYSTEM

Air Conditioning for large buildings

Heat Pump Model

INDEX

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

TOSHIBA

Leading Innovation

SMMS e

SUPER MODULAR MULTI SYSTEM

Air Conditioning for large buildings

EXCELLENCE
EXPANSION
EXPERIENCE

evolutio

XPANSION

SMMS

SUPER MODULAR MULTI SYSTEM

Air Conditioning for large buildings

on

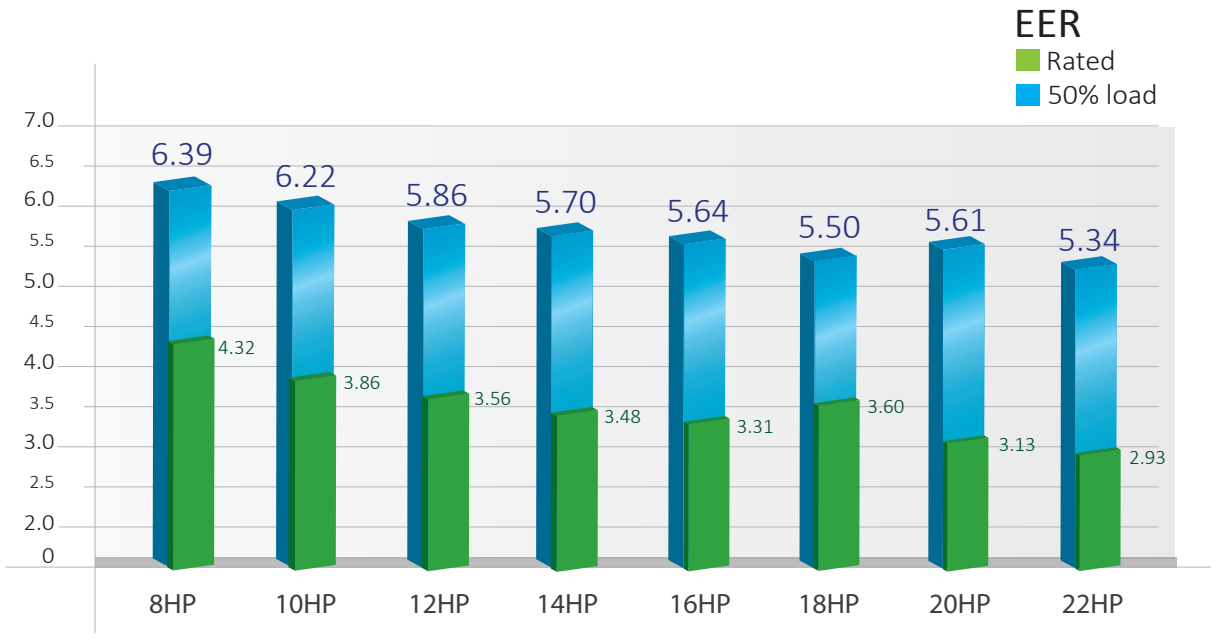
XPERIENCE

XCELLENCE

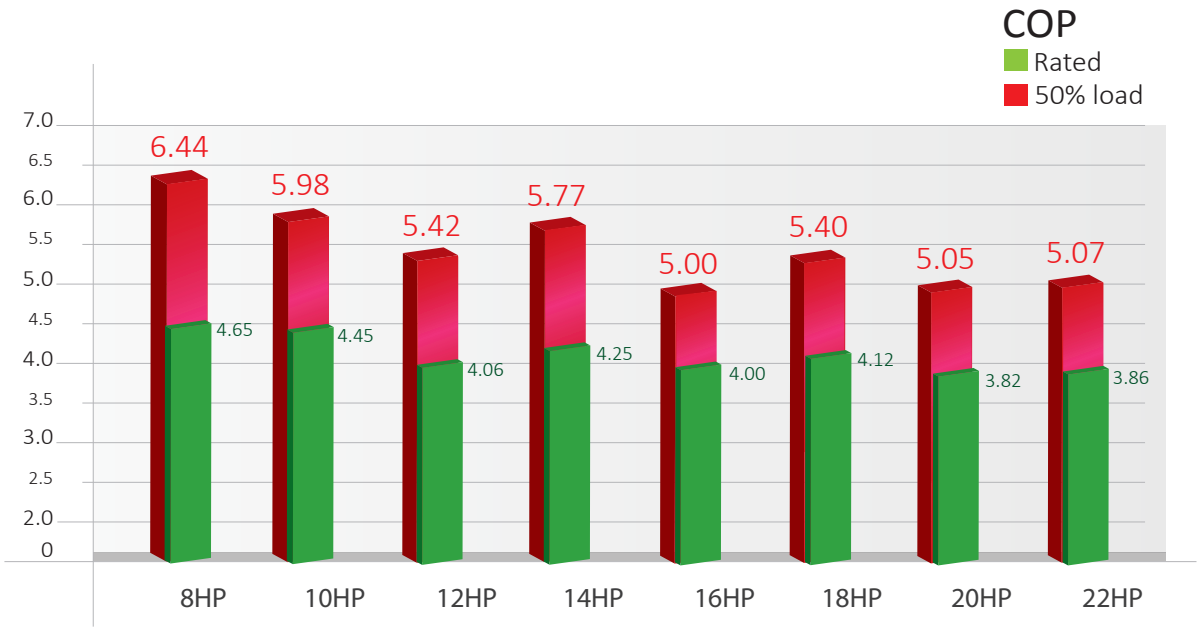
ENERGY SAVING

Greater efficiency performance

Adopting the highly efficient new DC twin-rotary compressors with various technologies.



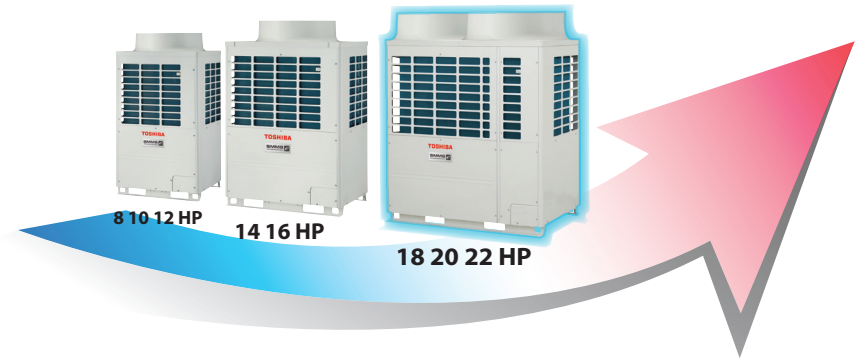
The overall capacity range and the highest EER and COP of 6.39 and 6.44,
the SMMS-e has truly excellence as the industry's top class in energy saving.



CAPACITY RANGE

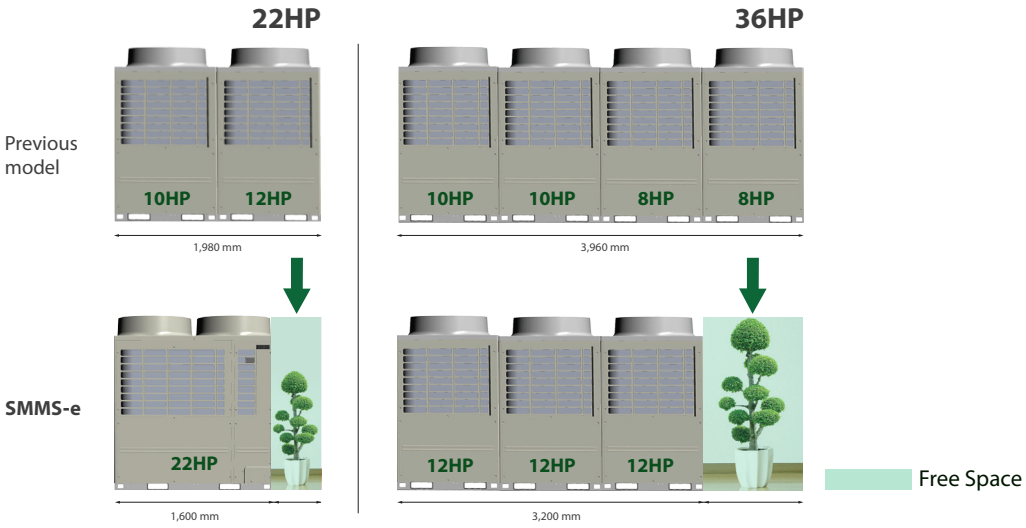
Single unit capacity expanded

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



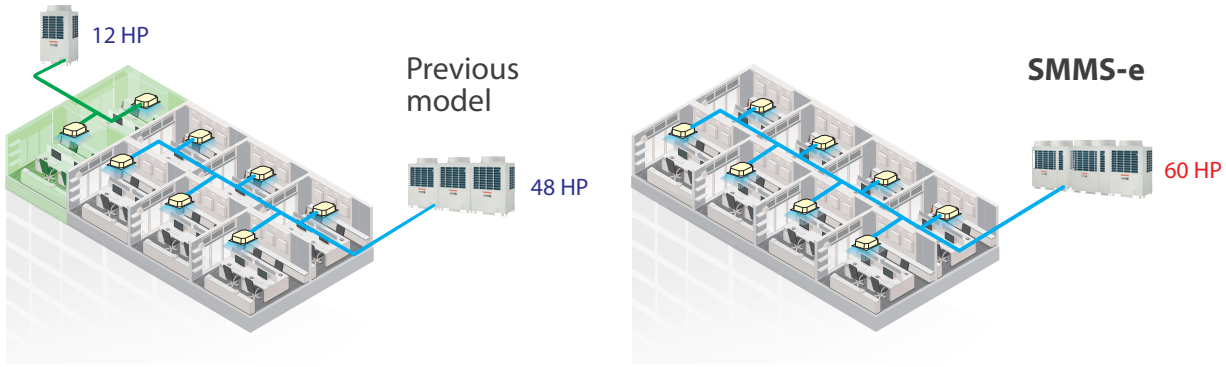
Industry-leading installation flexibility

Outdoor units improve performance to achieve greater space efficiency that defies their compact module size to deliver greater freedom in layout design. This minimizes weight-related restrictions and allows for quicker installation.



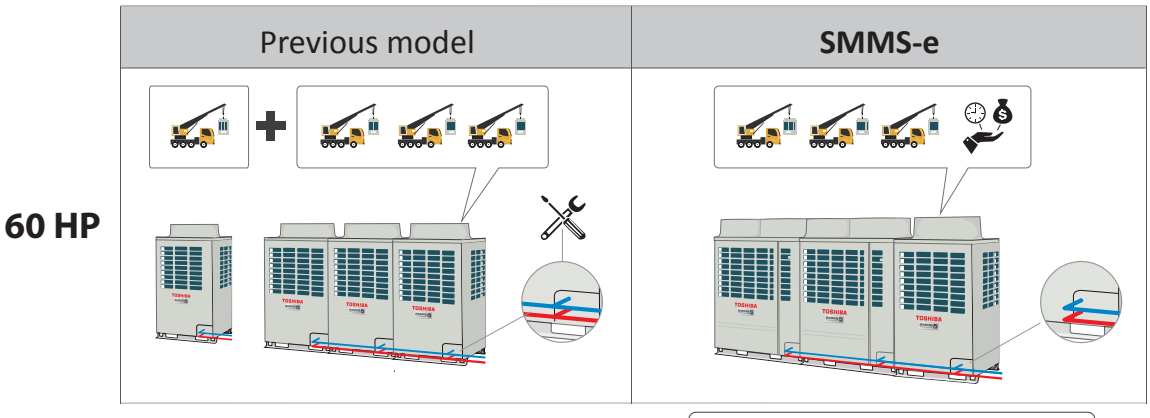
System capacity expanded

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

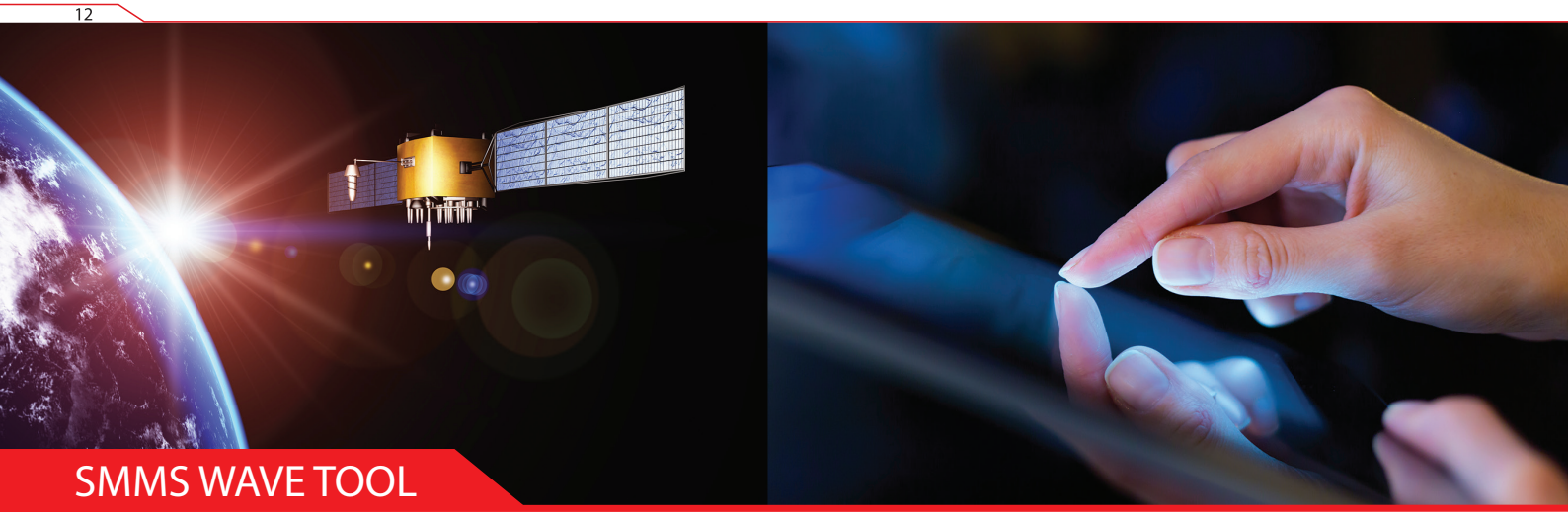


Installation flexibility

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.



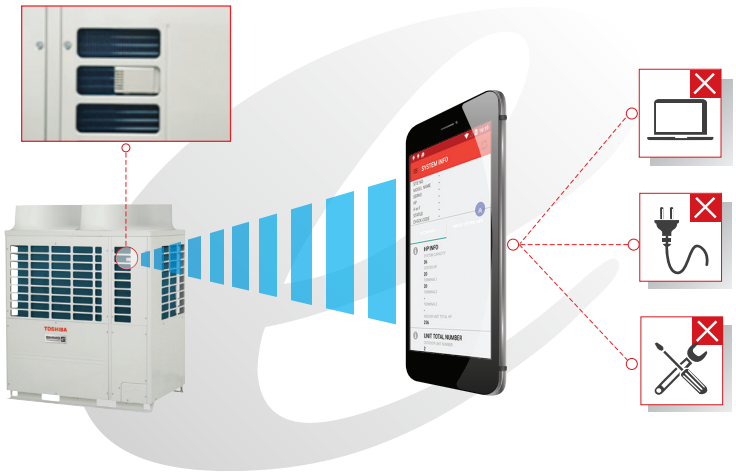
SMMS-e is capable of covering up to **22HP** with a single module. Reducing pipe work and overall installation time.



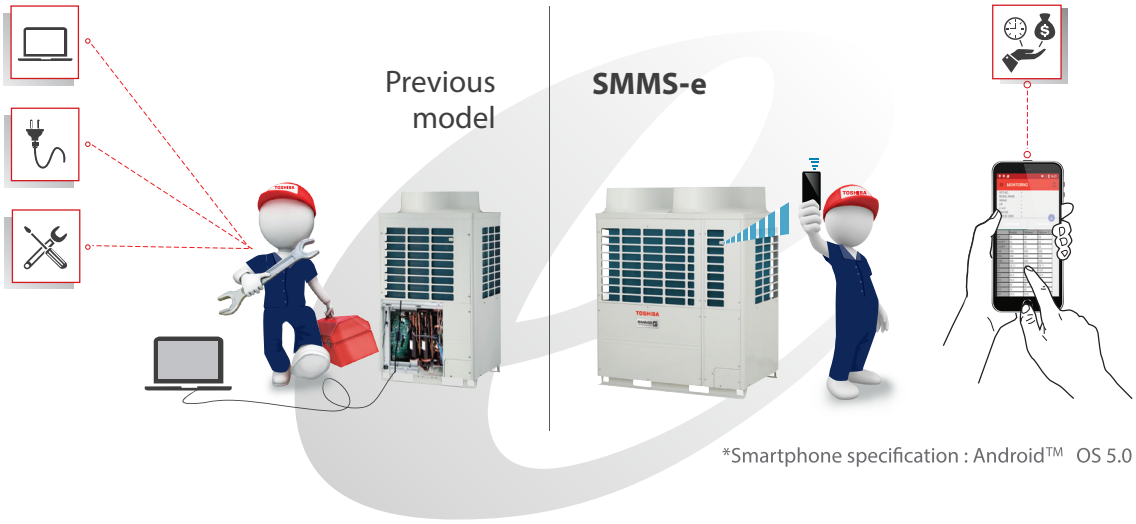
SMMS WAVE TOOL

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

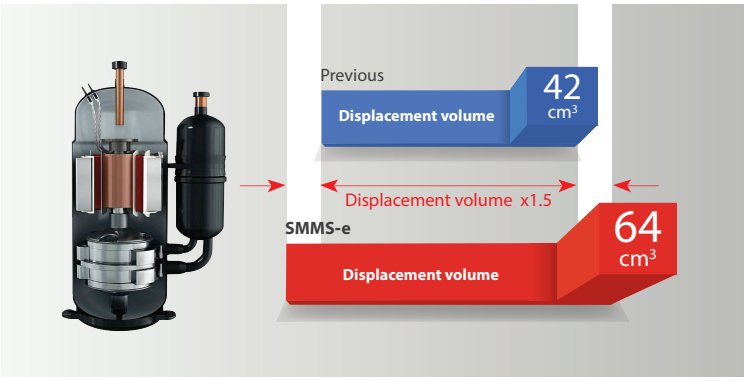
- ✓ Installation
- ✓ Service maintenance
- ✓ Power failure

Smart phone

DC TWIN-ROTARY COMPRESSOR

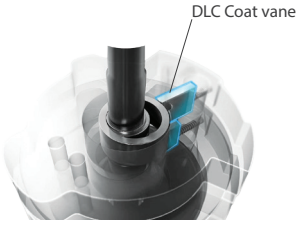
Wide range compressor

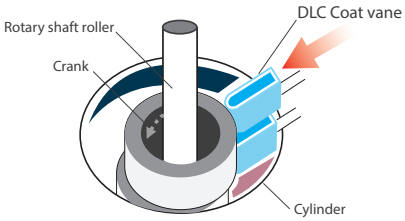
More powerful and efficient with the cutting-edge technology of compressor – DC Twin-Rotary operates in wider range of rotation speed.



DLC coated vane

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

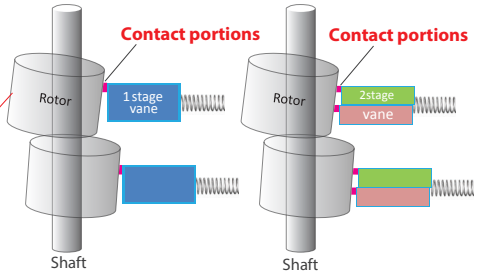


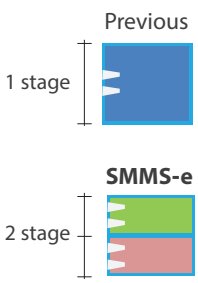


* DLC: Diamond Like Carbon

2-stage vane

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

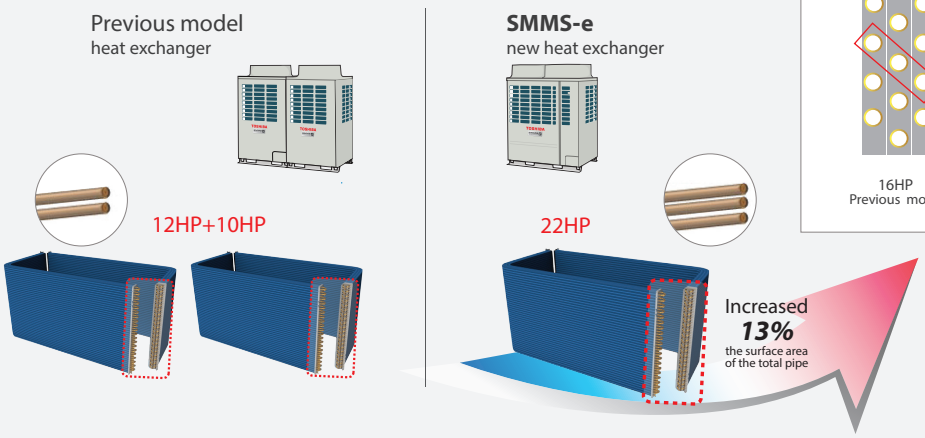


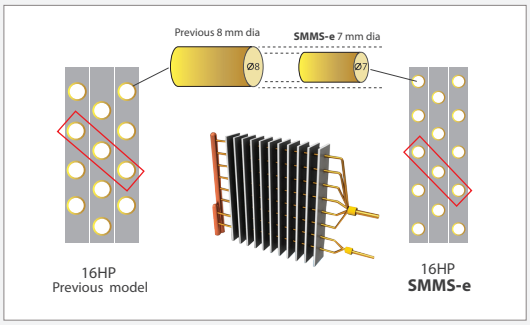


HEAT EXCHANGER

New heat exchanger

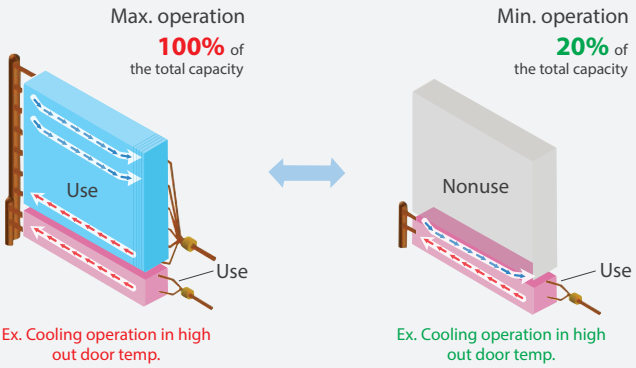
New heat exchanger of SMMS-e increases from 2 to 3 rows, providing even more surface area of the total pipe up to 13%.





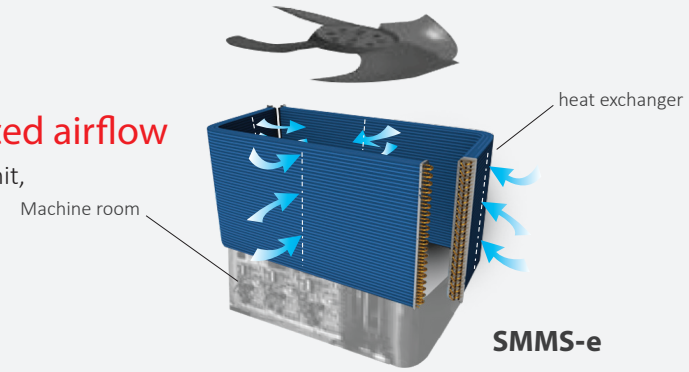
Variable heat exchanger

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

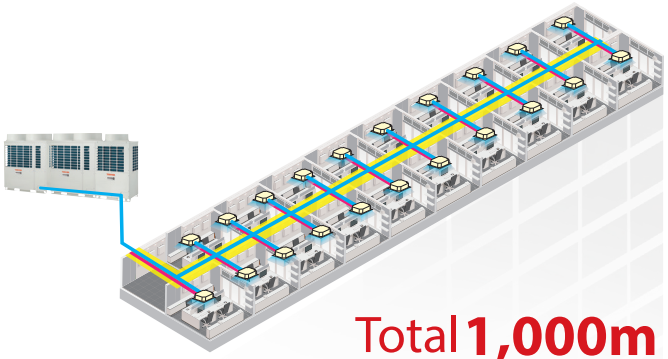
Heat exchangers are located on all four sides of the outdoor unit, ensuring air flow is equal in all directions.



PIPING DESIGN FLEXIBILITY

Total piping length

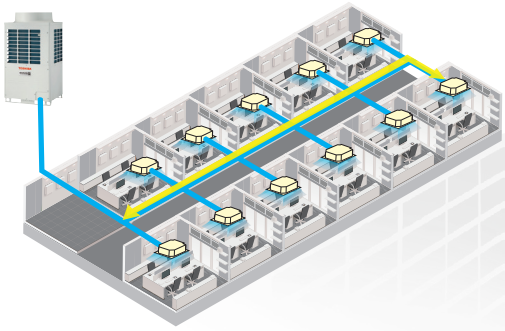
Applied with Toshiba's unique and greatly improved technology, SMMS-e can reach up to 1,000 meters maximum piping length.



Total **1,000m**
piping length
SMMS-e Max. total length

Farthest pipe from 1st branch

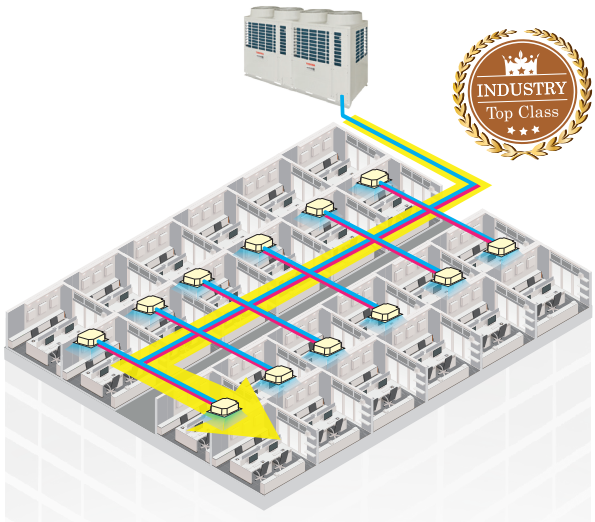
Even more convenient with the piping distance from the first branch to the furthest indoor unit at 90 meters, increasing the flexibility of the installation within the hotel or office building.



Farthest pipe
from 1st branch **90m**

Farthest equivalent length

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



Farthest
equivalent length **235m**

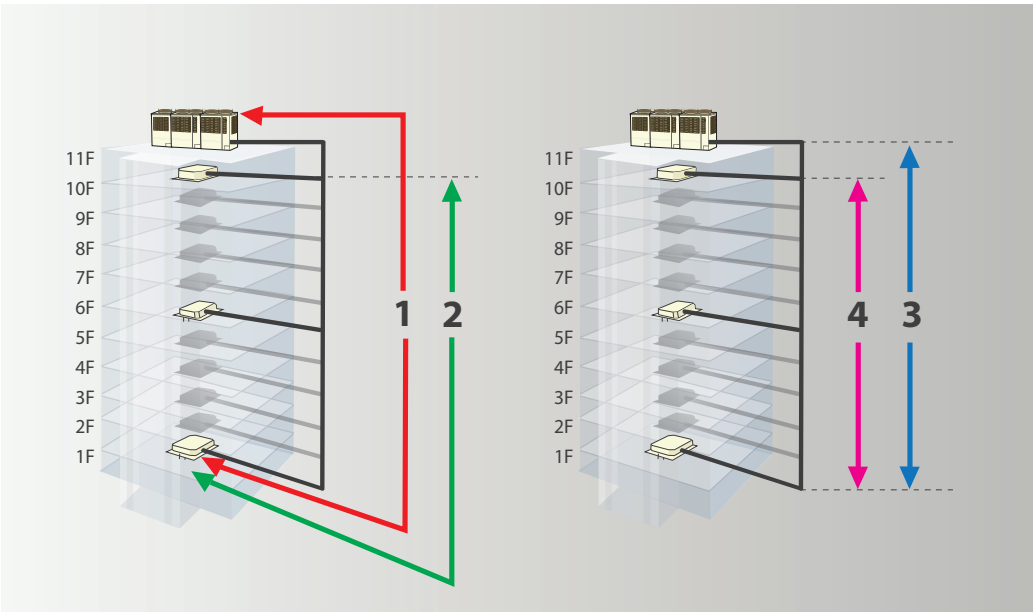
Height between indoor units

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.

40m Height between indoor unit

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

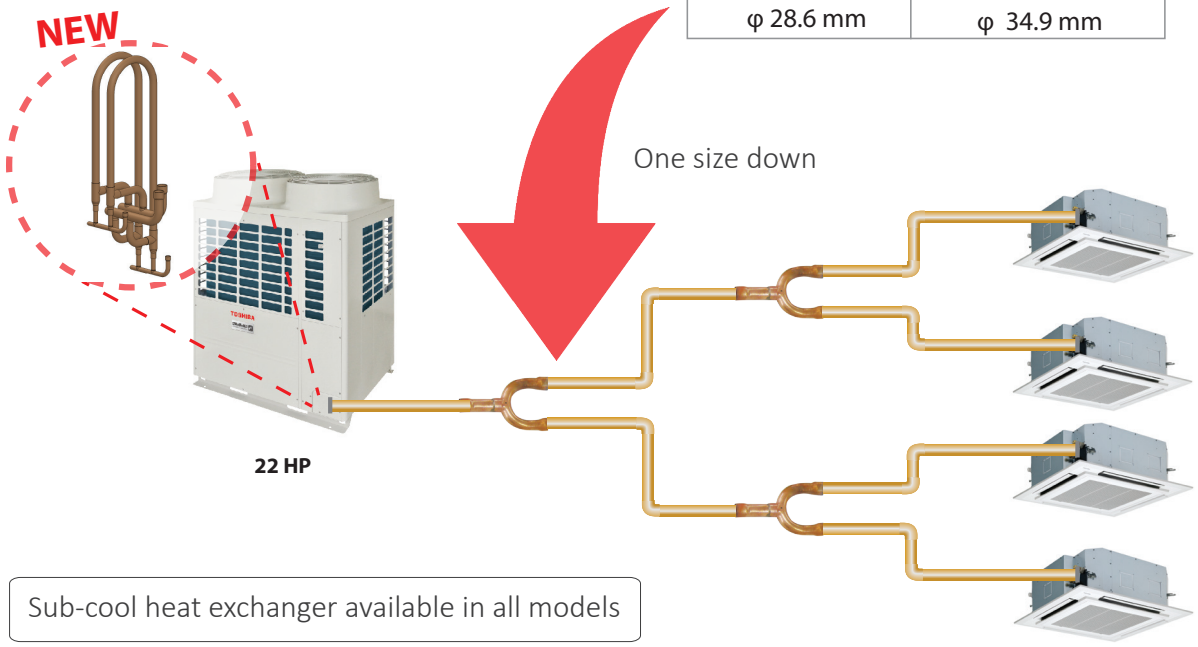
* : 34HP combination or more
** : 65m if the height piping length between outdoor unit and indoor unit is more than 3m
*** : Be sure to refer to the Engineering Data Book for details of these conditions and requirements.

SLIMMER PIPE SIZE

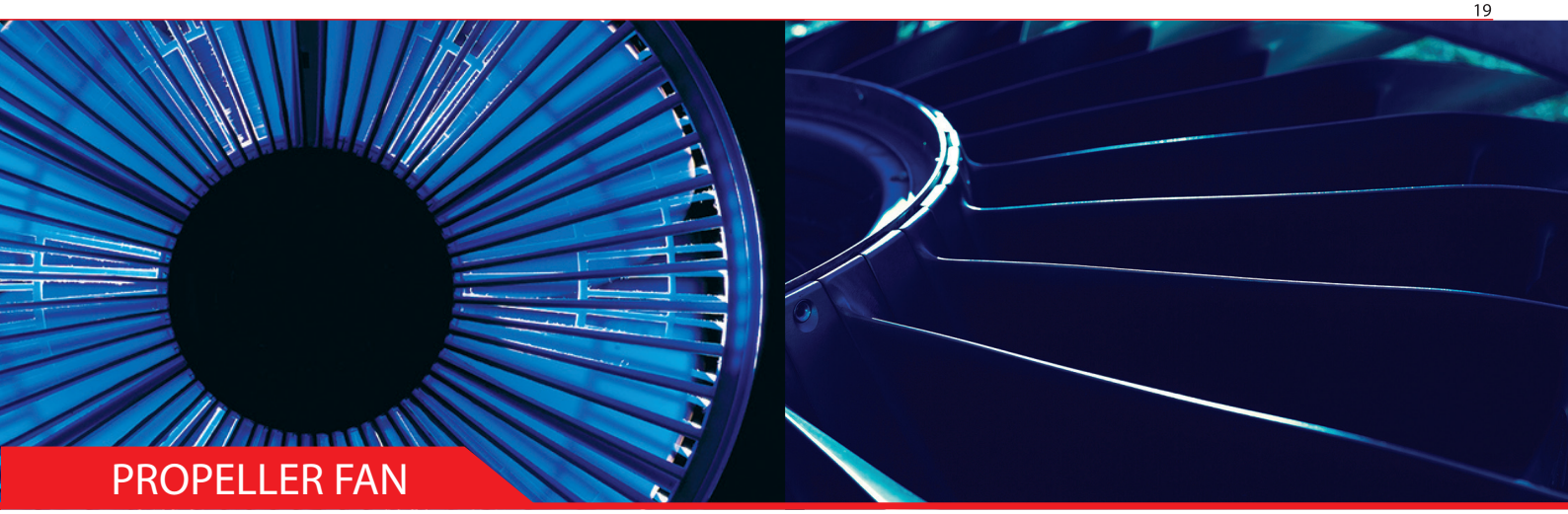
Piping saving costs

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

SMMS-e	Previous model
φ 28.6 mm	φ 34.9 mm



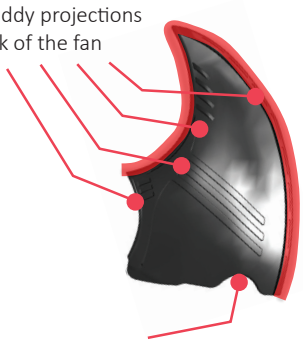
Sub-cool heat exchanger available in all models



PROPELLER FAN

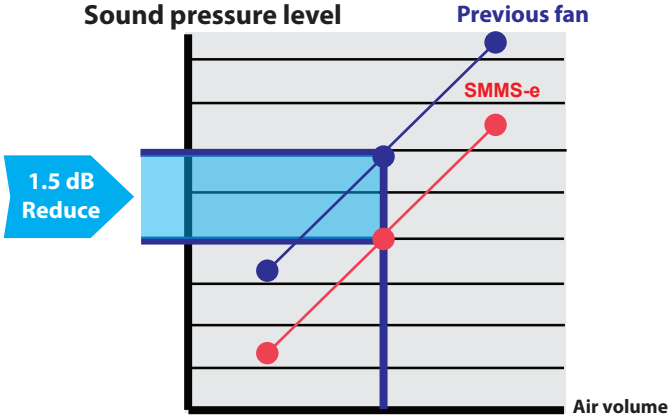
New advanced blade shapes for a better air flow management

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
	 New anti-eddy projections on the back of the fan New profiles of the reverse-arc shaped wings

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

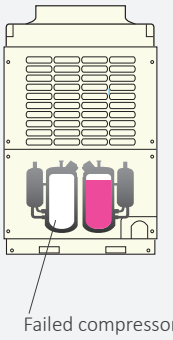


RELIABILITY

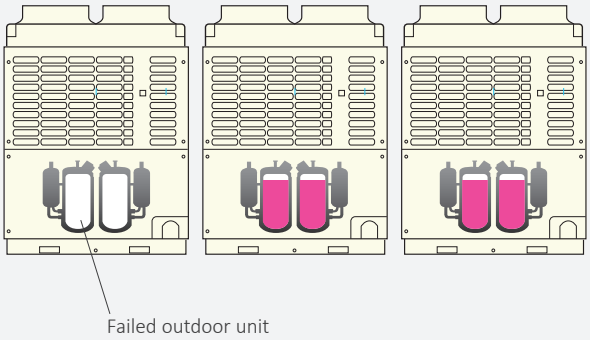
Backup operation

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

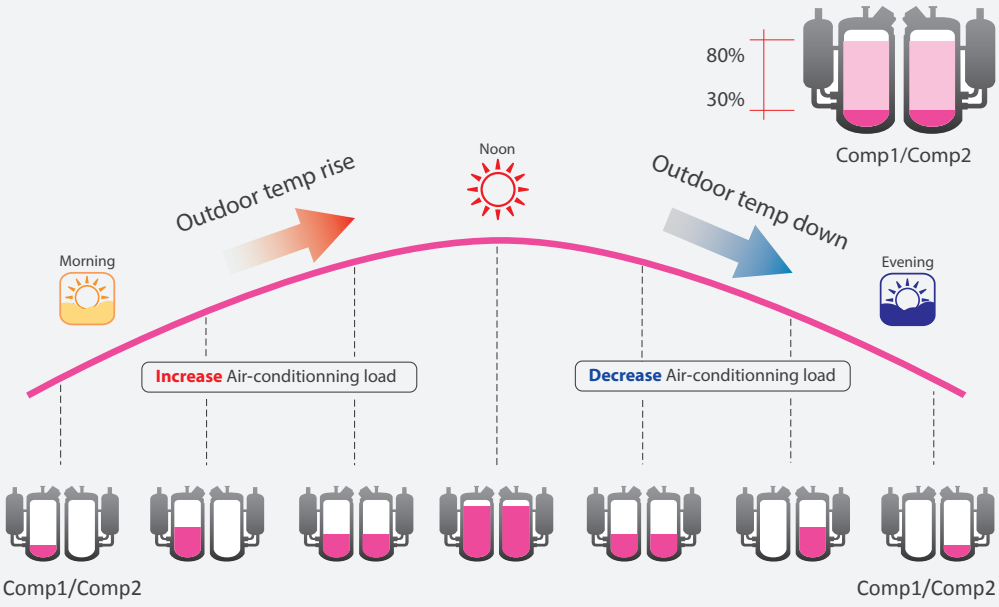


Module outdoor unit backup



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.



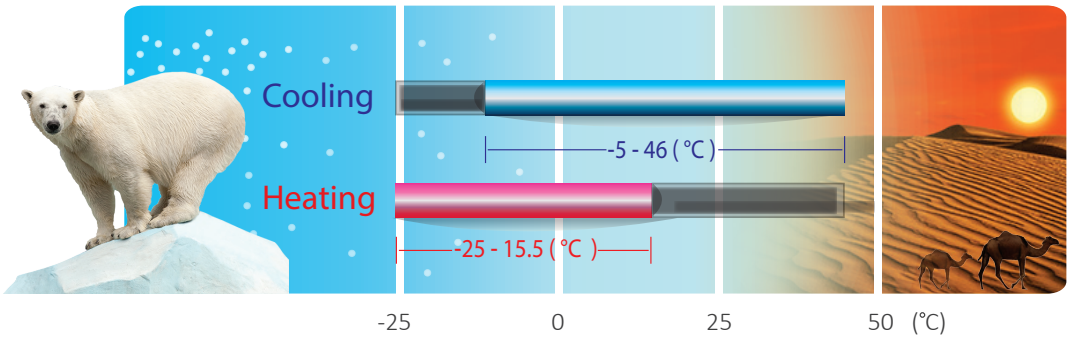
OPERATING TEMPERATURE RANGE

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

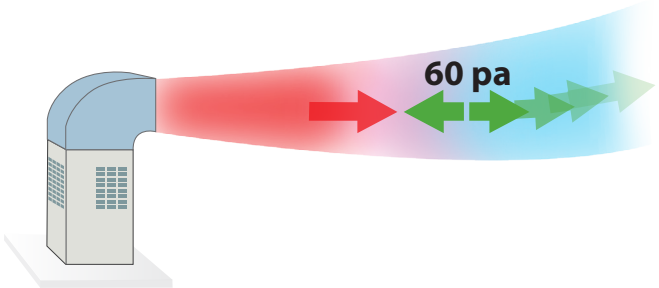
(Cooling :℃DB,Heating :℃WB)



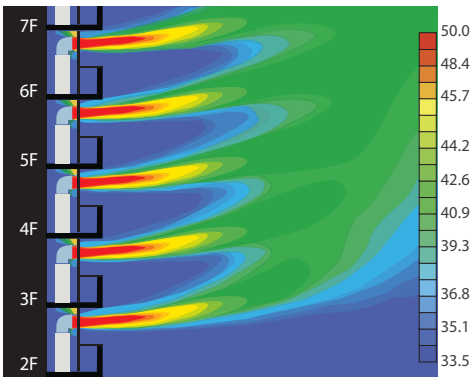
Note : Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

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.



Air flow simulation diagram



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

Outdoor units

Standard model

								
Capacity		8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP
Model Name (MMY-)	50 Hz	MAP0806HT8P	MAP1006HT8P	MAP1206HT8P	MAP1406HT8P	MAP1606HT8P	MAP1806HT8P	MAP2006HT8P	MAP2206HT8P
	60 Hz	MAP0806HT7P	MAP1006HT7P	MAP1206HT7P	MAP1406HT7P	MAP1606HT7P	MAP1806HT7P	MAP2006HT7P	MAP2206HT7P
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

																	
Capacity		24HP		26HP		28HP		30HP		32HP		34HP		36HP		38HP	
Model Name (MMY-)	50 Hz	AP2416HT8P		AP2616HT8P		AP2816HT8P		AP3016HT8P		AP3216HT8P		AP3416HT8P		AP3616HT8P		AP3816HT8P	
	60 Hz	AP2416HT7P		AP2616HT7P		AP2816HT7P		AP3016HT7P		AP3216HT7P		AP3416HT7P		AP3616HT7P		AP3816HT7P	
Units in combination (MMY-MAP)		1206HT8P 1206HT8P	1206HT7P 1206HT7P	1406HT8P 1206HT8P	1406HT7P 1206HT7P	1606HT8P 1206HT8P	1606HT7P 1206HT7P	1606HT8P 1406HT8P	1606HT7P 1406HT7P	1606HT8P 1606HT8P	1606HT7P 1606HT7P	1806HT8P 1606HT8P	1806HT7P 1606HT7P	2006HT8P 1606HT8P	2006HT7P 1606HT7P	2206HT8P 1606HT8P	2206HT7P 1606HT7P
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	

											
Capacity		40HP		42HP		44HP		46HP		48HP	
Model Name (MMY-)	50 Hz	AP4016HT8P		AP4216HT8P		AP4416HT8P		AP4616HT8P		AP4816HT8P	
	60 Hz	AP4016HT7P		AP4216HT7P		AP4416HT7P		AP4616HT7P		AP4816HT7P	
Units in combination (MMY-MAP)		2006HT8P 2006HT8P	2006HT7P 2006HT7P	2206HT8P 2006HT8P	2206HT7P 2006HT7P	2206HT8P 2206HT8P	2206HT7P 2206HT7P	1606HT8P 1606HT8P 1406HT8P	1606HT7P 1606HT7P 1406HT7P	1606HT8P 1606HT8P 1606HT8P	1606HT7P 1606HT7P 1606HT7P
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	

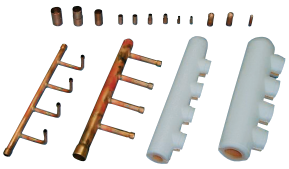
													
Capacity		50HP		52HP		54HP		56HP		58HP		60HP	
Model Name (MMY-)	50 Hz	AP5016HT8P		AP5216HT8P		AP5416HT8P		AP5616HT8P		AP5816HT8P		AP6016HT8P	
	60 Hz	AP5016HT7P		AP5216HT7P		AP5416HT7P		AP5616HT7P		AP5816HT7P		AP6016HT7P	
Units in combination (MMY-MAP)		1806HT8P 1606HT8P 1606HT8P	1806HT7P 1606HT7P 1606HT7P	2006HT8P 1606HT8P 1606HT8P	2006HT7P 1606HT7P 1606HT7P	2206HT8P 1606HT8P 1606HT8P	2206HT7P 1606HT7P 1606HT7P	2006HT8P 2006HT8P 1606HT8P	2006HT7P 2006HT7P 1606HT7P	2206HT8P 2006HT8P 1606HT8P	2206HT7P 2006HT7P 1606HT7P	2206HT8P 2206HT8P 1606HT8P	2206HT7P 2206HT7P 1606HT7P
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	

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

High efficiency / Heating capacity priority model

									
Capacity		20HP		22HP		36HP		38HP		40HP	
Model Name (MMY-)	50 Hz	AP2026HT8P		AP2226HT8P		AP3626HT8P		AP3826HT8P		AP4026HT8P	
	60 Hz	AP2026HT7P		AP2226HT7P		AP3626HT7P		AP3826HT7P		AP4026HT7P	
Units in combination (MMY-MAP)		1006HT8P 1006HT8P	1006HT7P 1006HT7P	1206HT8P 1006HT8P	1206HT7P 1006HT7P	1206HT8P 1206HT8P 1206HT8P	1206HT7P 1206HT7P 1206HT7P	1406HT8P 1206HT8P 1206HT8P	1406HT7P 1206HT7P 1206HT7P	1406HT8P 1406HT8P 1206HT8P	1406HT7P 1406HT7P 1206HT7P
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	

							
Capacity		42HP		44HP		54HP	
Model Name (MMY-)	50 Hz	AP4226HT8P		AP4426HT8P		AP5426HT8P	
	60 Hz	AP4226HT7P		AP4426HT7P		AP5426HT7P	
Units in combination (MMY-MAP)		1406HT8P 1406HT8P 1406HT8P	1406HT7P 1406HT7P 1406HT7P	1606HT8P 1406HT8P 1406HT8P	1606HT7P 1406HT7P 1406HT7P	2006HT8P 2006HT8P 1406HT8P	2006HT7P 2006HT7P 1406HT7P
Cooling capacity (kW)		120.0		125.0		152.0	
Heating capacity (kW)		135.0		140.0		171.0	

	Y-shape branching joint				Branch headers				Outdoor unit connection piping kit	
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		

※ Anti-Corrosion protection model : MMY-MAP****HT8JP, MMY-MAP****HT7JP

Outdoor unit specifications

Standard model (Single unit)

Technical specifications

Equivalent HP			8HP	10HP	12HP	14HP	16HP
Model name	Heat Pump	50Hz (MMY-)	MAP0806HT8P	MAP1006HT8P	MAP1206HT8P	MAP1406HT8P	MAP1606HT8P
		60Hz (MMY-)	MAP0806HT7P	MAP1006HT7P	MAP1206HT7P	MAP1406HT7P	MAP1606HT7P
Outdoor unit type			Inverter				
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V				
Cooling (*2)	Capacity 100% (kW)		22.4	28.0	33.5	40.0	45.0
	Power consumption (kW)		5.19	7.26	9.41	11.50	13.60
	EER (Energy Efficiency Ratio)	Capacity 100%	4.32	3.86	3.56	3.48	3.31
		Capacity 80%	5.09	4.66	4.26	4.16	3.99
		Capacity 50%	6.39	6.22	5.86	5.70	5.64
Heating (*2)	Capacity 100% (kW)		25.0	31.5	37.5	45.0	50.0
	Power consumption (kW)		5.38	7.08	9.24	10.6	12.50
	COP (Coefficiency of Performance)	Capacity 100%	4.65	4.45	4.06	4.25	4.0
		Capacity 80%	5.37	5.05	4.55	4.88	4.16
		Capacity 50%	6.44	5.98	5.42	5.77	5.0
External dimensions (Height / Width / Depth) (mm)			1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 1,210 / 780	1,800 / 1,210 / 780
Total weight	Heat Pump (kg)		242	242	242	299	299
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

Standard model (Single unit)

Technical specifications

Equivalent HP			18HP	20HP	22HP
Model name	Heat Pump	50Hz MMY-	MAP1806HT8P	MAP2006HT8P	MAP2206HT8P
		60Hz MMY-	MAP1806HT7P	MAP2006HT7P	MAP2206HT7P
Outdoor unit type				Inverter	
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V		
Cooling (*2)	Capacity 100% (kW)		50.4	56.0	61.5
	Power consumption (kW)		14.0	17.90	21.0
	EER (Energy Efficiency Ratio)	Capacity 100%	3.60	3.13	2.93
		Capacity 80%	4.20	3.87	3.61
		Capacity 50%	5.50	5.61	5.34
Heating (*2)	Capacity 100% (kW)		56.5	63.0	64.0
	Power consumption (kW)		13.6	16.50	16.60
	COP (Coefficiency of Performance)	Capacity 100%	4.12	3.82	3.86
		Capacity 80%	4.62	4.25	4.29
		Capacity 50%	5.40	5.05	5.07
External dimensions (Height / Width / Depth) (mm)			1,800/1,600/780	1,800/1,600/780	1,800/1,600/780
Total weight	Heat Pump (kg)		370	370	370
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))			60.0 / 61.0	61.0 / 62.0	61.0 / 62.0

Standard model (Combination)

Technical specifications

Equivalent HP				24HP		26HP		28HP	
Model name	Heat Pump	50Hz	MMY-	AP2416HT8P		AP2616HT8P		AP2816HT8P	
		60Hz	MMY-	AP2416HT7P		AP2616HT7P		AP2816HT7P	
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Outdoor unit model	Heat Pump	50Hz	MMY-	MAP1206HT8P	MAP1206HT8P	MAP1406HT8P	MAP1206HT8P	MAP1606HT8P	MAP1206HT8P
		60Hz	MMY-	MAP1206HT7P	MAP1206HT7P	MAP1406HT7P	MAP1206HT7P	MAP1606HT7P	MAP1206HT7P
Cooling (*2)	Capacity 100%		(kW)	67.0		73.5		78.5	
	Power consumption		(kW)	18.80		20.90		23.0	
	EER (Energy Efficiency Ratio)	Capacity 100%		3.56		3.52		3.41	
		Capacity 80%		4.26		4.20		4.10	
		Capacity 50%		5.86		5.77		5.73	
Heating (*2)	Capacity 100%		(kW)	75.0		82.5		87.5	
	Power consumption		(kW)	18.50		19.80		21.7	
	COP (Coefficiency of Performance)	Capacity 100%		4.06		4.16		4.02	
		Capacity 80%		4.55		4.72		4.33	
		Capacity 50%		5.42		5.61		5.18	
Total weight	Heat Pump		(kg)	242	242	299	242	299	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	4.8 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))	62.5 / 64.5		63.0 / 65.0		64.0 / 66.0	

Standard model (Combination)

Technical specifications

Equivalent HP				30HP		32HP		34HP	
Model name	Heat Pump	50Hz	MMY-	AP3016HT8P		AP3216HT8P		AP3416HT8P	
		60Hz	MMY-	AP3016HT7P		AP3216HT7P		AP3416HT7P	
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Outdoor unit model	Heat Pump	50Hz	MMY-	MAP1606HT8P	MAP1406HT8P	MAP1606HT8P	MAP1606HT8P	MAP1806HT8P	MAP1606HT8P
		60Hz	MMY-	MAP1606HT7P	MAP1406HT7P	MAP1606HT7P	MAP1606HT7P	MAP1806HT7P	MAP1606HT7P
Cooling (*2)	Capacity 100%		(kW)	85.0		90.0		95.4	
	Power consumption		(kW)	25.10		27.20		27.60	
	EER (Energy Efficiency Ratio)	Capacity 100%		3.39		3.31		3.46	
		Capacity 80%		4.07		3.99		4.10	
		Capacity 50%		5.67		45.0		5.57	
Heating (*2)	Capacity 100%		(kW)	95.0		100.0		106.0	
	Power consumption		(kW)	23.10		25.0		26.10	
	COP (Coefficiency of Performance)	Capacity 100%		4.11		4.00		4.06	
		Capacity 80%		4.49		4.16		4.41	
		Capacity 50%		5.36		5.0		5.22	
Total weight	Heat Pump		(kg)	299	299	299	299	370	299
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		65.5 / 67.5		64.5 / 66.0	

*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.

Standard model (Combination)

Technical specifications

Equivalent HP			36HP		38HP		40HP	
Model name	Heat Pump	50Hz MMY-	AP3616HT8P		AP3816HT8P		AP4016HT8P	
		60Hz MMY-	AP3616HT7P		AP3816HT7P		AP4016HT7P	
Outdoor unit type			Inverter					
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Outdoor unit model	Heat Pump	50Hz MMY-	MAP2006HT8P	MAP1606HT8P	MAP2206HT8P	MAP1606HT8P	MAP2006HT8P	MAP2006HT8P
		60Hz MMY-	MAP2006HT7P	MAP1606HT7P	MAP2206HT7P	MAP1606HT7P	MAP2006HT7P	MAP2006HT7P
Cooling (*2)	Capacity 100% (kW)		101.0		106.5		112.0	
	Power consumption (kW)		31.5		34.6		35.8	
	EER (Energy Efficiency Ratio)	Capacity 100%	3.21		3.08		3.13	
		Capacity 80%	3.92		3.76		3.87	
		Capacity 50%	5.62		5.46		5.61	
Heating (*2)	Capacity 100% (kW)		113.0		114.0		126.0	
	Power consumption (kW)		29.0		29.1		33.0	
	COP (Coefficiency of Performance)	Capacity 100%	3.90		3.92		3.82	
		Capacity 80%	4.21		4.24		4.25	
		Capacity 50%	5.03		5.04		5.05	
Total weight	Heat Pump (kg)		370	299	370	299	370	370
Compressor	Motor output (kW)		7.6 x 2	5.8 x 2	9.0 × 2	5.8 × 2	7.6 × 2	7.6 × 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))			65.0 / 66.5		65.0 / 66.5		64.5 / 65.5	

Standard model (Combination)

Technical specifications

Equivalent HP			42HP		44HP		46HP			48HP		
Model name	Heat Pump	50Hz MMY-	AP4216HT8P		AP4416HT8P		AP4616HT8P			AP4816HT8P		
		60Hz MMY-	AP4216HT7P		AP4416HT7P		AP4616HT7P			AP4816HT7P		
Outdoor unit type			Inverter									
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V									
Outdoor unit model	Heat Pump	50Hz MMY-	MAP2206HT8P	MAP2006HT8P	MAP2206HT8P	MAP2206HT8P	MAP1606HT8P	MAP1606HT8P	MAP1406HT8P	MAP1606HT8P	MAP1606HT8P	MAP1606HT8P
		60Hz MMY-	MAP2206HT7P	MAP2006HT7P	MAP2206HT7P	MAP2206HT7P	MAP1606HT7P	MAP1606HT7P	MAP1406HT7P	MAP1606HT7P	MAP1606HT7P	MAP1606HT7P
Cooling (*2)	Capacity 100% (kW)		117.5		123.0		130.0			135.0		
	Power consumption (kW)		38.9		42.0		38.7			40.8		
	EER (Energy Efficiency Ratio)	Capacity 100%	3.02		2.93		3.36			3.31		
		Capacity 80%	3.73		3.61		4.04			3.99		
		Capacity 50%	5.46		5.34		5.66			5.64		
Heating (*2)	Capacity 100% (kW)		127.0		128.0		145.0			150.0		
	Power consumption (kW)		33.1		33.2		35.6			37.5		
	COP (Coefficiency of Performance)	Capacity 100%	3.84		3.86		4.07			4.00		
		Capacity 80%	4.27		4.29		4.38			4.16		
		Capacity 50%	5.06		5.07		5.24			5.00		
Total weight	Heat Pump (kg)		370	370	370	370	299	299	299	299	299	299
Compressor	Motor output (kW)		9.0 × 2	7.6 × 2	9.0 × 2	9.0 × 2	5.8 x 2	5.8 x2	5.8 x 2	5.8 x 2	5.8 x 2	5.8 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	1.0
	Air volume (m^3/h)		18,500	17,900	18,500	18,500	12600	12600	12200	12600	12600	12600
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))			64.5 / 65.5		64.5 / 65.5		66.5 / 68.5			67.0 / 69.0		

Standard model (Combination)

Technical specifications

Equivalent HP				50HP			52HP			54HP		
Model name	Heat Pump	50Hz	MMY-	AP5016HT8P			AP5216HT8P			AP5416HT8P		
		60Hz	MMY-	AP5016HT7P			AP5216HT7P			AP5416HT7P		
Outdoor unit type				Inverter								
Power supply (*2)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V								
Outdoor unit model	Heat Pump	50Hz	MMY-	MAP1806HT8P	MAP1606HT8P	MAP1606HT8P	MAP2006HT8P	MAP1606HT8P	MAP1606HT8P	MAP2206HT8P	MAP1606HT8P	MAP1606HT8P
		60Hz	MMY-	MAP1806HT7P	MAP1606HT7P	MAP1606HT7P	MAP2006HT7P	MAP1606HT7P	MAP1606HT7P	MAP2206HT7P	MAP1606HT7P	MAP1606HT7P
Cooling (*1)	Capacity 100%		(kW)	140.4			146.0			151.5		
	Power consumption		(kW)	41.20			45.10			48.2		
	EER (Energy Efficiency Ratio)	Capacity 100%		3.41			3.24			3.14		
		Capacity 80%		4.07			3.94			3.83		
		Capacity 50%		5.59			5.63			5.51		
Heating (*1)	Capacity 100%		(kW)	156.5			163.0			164.0		
	Power consumption		(kW)	38.60			41.50			41.6		
	COP (Coefficiency of Performance)	Capacity 100%		4.04			3.93			3.94		
		Capacity 80%		4.33			4.20			4.21		
		Capacity 50%		5.15			5.02			5.03		
Total weight	Heat Pump		(kg)	370	299	299	370	299	299	370	229	299
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 / 68.0			66.5 / 68.5			66.5 / 68.5		

Standard model (Combination)

Technical specifications

Equivalent HP				56HP			58HP			60HP		
Model name	Heat Pump	50Hz	MMY-	AP5616HT8P			AP5816HT8P			AP6016HT8P		
		60Hz	MMY-	AP5616HT7P			AP5816HT7P			AP6016HT7P		
Outdoor unit type				Inverter								
Power supply (*2)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V								
Outdoor unit model	Heat Pump	50Hz	MMY-	MAP2006HT8P	MAP2006HT8P	MAP1606HT8P	MAP2206HT8P	MAP2006HT8P	MAP1606HT8P	MAP2206HT8P	MAP2206HT8P	MAP1606HT8P
		60Hz	MMY-	MAP2006HT7P	MAP2006HT7P	MAP1606HT7P	MAP2206HT7P	MAP2006HT7P	MAP1606HT7P	MAP2206HT7P	MAP2206HT7P	MAP1606HT7P
Cooling (*1)	Capacity 100%		(kW)	157.0			162.5			168.0		
	Power consumption		(kW)	49.40			52.50			55.60		
	EER (Energy Efficiency Ratio)	Capacity 100%		3.18			3.10			3.02		
		Capacity 80%		3.90			3.80			3.71		
		Capacity 50%		5.62			5.51			5.42		
Heating (*1)	Capacity 100%		(kW)	176.0			177.0			178.0		
	Power consumption		(kW)	45.50			45.60			45.70		
	COP (Coefficiency of Performance)	Capacity 100%		3.87			3.88			3.89		
		Capacity 80%		4.23			4.24			4.26		
		Capacity 50%		5.04			5.04			5.05		
Total weight	Heat Pump		(kg)	370	370	299	370	370	299	370	370	299
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 / 68.0			66.5 / 68.0			66.5 / 68.5		

*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.

High efficiency / Heating capacity priority model (Combination)

Technical specifications

Equivalent HP			20HP		22HP		36HP		
Model name	Heat Pump	50Hz MMY-	AP2026HT8P		AP2226HT8P		AP3626HT8P		
		60Hz MMY-	AP2026HT7P		AP2226HT7P		AP3626HT7P		
Outdoor unit type			Inverter						
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V						
Outdoor unit model	Heat Pump	50Hz MMY-	MAP1006HT8P	MAP1006HT8P	MAP1206HT8P	MAP1006HT8P	MAP1206HT8P	MAP1206HT8P	MAP1206HT8P
		60Hz MMY-	MAP1006HT7P	MAP1006HT7P	MAP1206HT7P	MAP1006HT7P	MAP1206HT7P	MAP1206HT7P	MAP1206HT7P
Cooling (*2)	Capacity 100% (kW)		56.0		61.5		100.5		
	Power consumption (kW)		14.50		16.7		28.20		
	EER (Energy Efficiency Ratio)	Capacity 100%	3.86		3.69		3.56		
		Capacity 80%	4.66		4.43		4.26		
		Capacity 50%	6.22		6.02		5.86		
Heating (*2)	Capacity 100% (kW)		63.0		69.0		112.5		
	Power consumption (kW)		14.20		16.3		27.70		
	COP (Coefficiency of Performance)	Capacity 100%	4.45		4.23		4.06		
		Capacity 80%	5.05		4.77		4.55		
		Capacity 50%	5.98		5.66		5.42		
Total weight	Heat Pump (kg)		242	242	242	242	242	242	242
Compressor	Motor output (kW)		3.1 x 2	3.1 x 2	3.9 x 2	3.9 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))			60.5 /61.5		61.5 /63.0		64.0 / 66.0		

High efficiency / Heating capacity priority model (Combination)

Technical specifications

Equivalent HP			38HP			40HP			42HP		
Model name	Heat Pump	50Hz MMY-	AP3826HT8P			AP4026HT8P			AP4226HT8P		
		60Hz MMY-	AP3826HT7P			AP4026HT7P			AP4226HT7P		
Outdoor unit type			Inverter								
Power supply (*1)			3phase 4wires 50Hz 400V (380-415V) /3phase 4wires 60Hz 380V								
Outdoor unit model	Heat Pump	50Hz MMY-	MAP1406HT8P	MAP1206HT8P	MAP1206HT8P	MAP1406HT8P	MAP1406HT8P	MAP1206HT8P	MAP1406HT8P	MAP1406HT8P	MAP1406HT8P
		60Hz MMY-	MAP1406HT7P	MAP1206HT7P	MAP1206HT7P	MAP1406HT7P	MAP1406HT7P	MAP1206HT7P	MAP1406HT7P	MAP1406HT7P	MAP1406HT7P
Cooling (*2)	Capacity 100% (kW)		107.0			113.5			120.0		
	Power consumption (kW)		30.30			32.40			34.50		
	EER (Energy Efficiency Ratio)	Capacity 100%	3.53			3.50			3.48		
		Capacity 80%	4.22			4.19			4.16		
		Capacity 50%	5.80			5.74			5.70		
Heating (*2)	Capacity 100% (kW)		120.0			127.5			135.0		
	Power consumption (kW)		29.10			30.40			31.80		
	COP (Coefficiency of Performance)	Capacity 100%	4.13			4.19			4.25		
		Capacity 80%	4.67			4.78			4.88		
		Capacity 50%	5.55			5.66			5.77		
Total weight	Heat Pump (kg)		299	242	242	299	299	242	299	299	299
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	4.8 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	1.0	1.0
	Air volume (m^3/h)		12,200	12,200	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			65.0 / 67.0		

*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.

High efficiency / Heating capacity priority model (Combination)

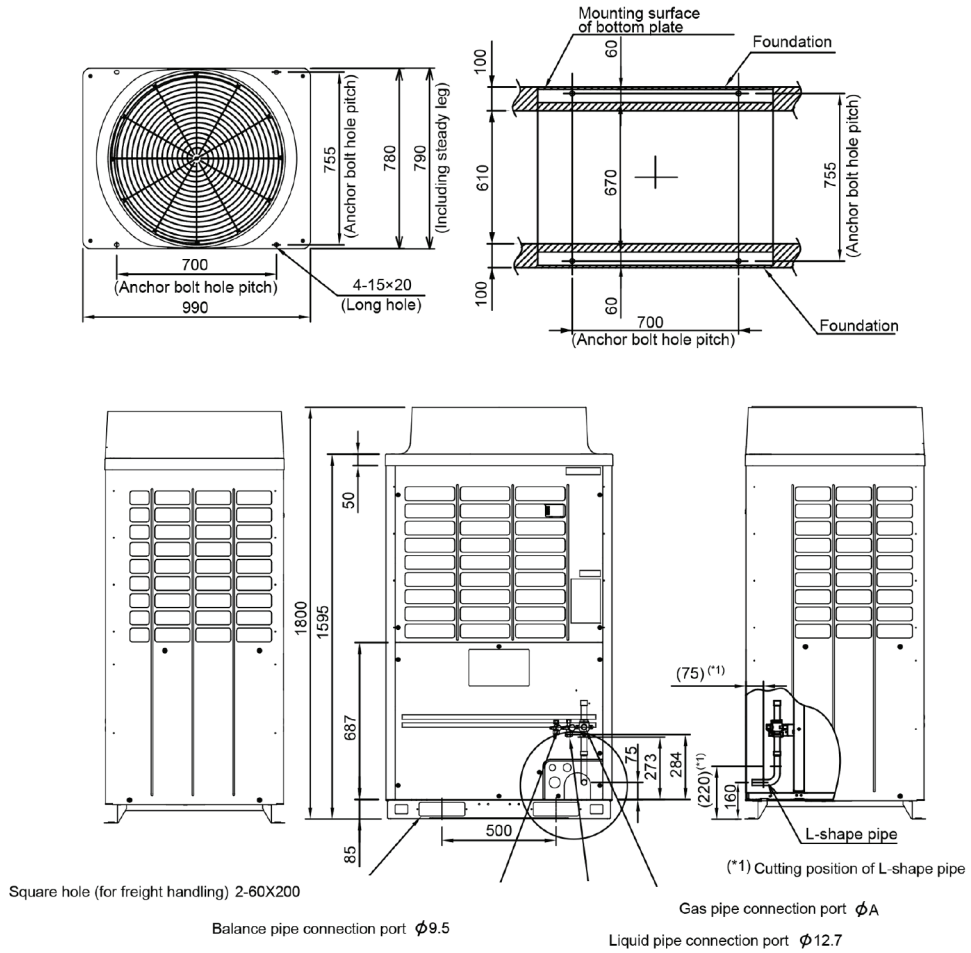
Technical specifications

Equivalent HP				44HP			54HP		
Model name	Heat Pump	50Hz	MMY-	AP4426HT8P			AP5426HT8P		
		60Hz	MMY-	AP4426HT7P			AP5426HT7P		
Outdoor unit type				Inverter					
Power supply (*1)				3phase 4wires 50Hz 400V (380-415V) / 3phase 4wires 60Hz 380V					
Outdoor unit model	Heat Pump	50Hz	MMY-	MAP1606HT8P	MAP1406HT8P	MAP1406HT8P	MAP2006HT8P	MAP2006HT8P	MAP1406HT8P
		60Hz	MMY-	MAP1606HT7P	MAP1406HT7P	MAP1406HT7P	MAP2006HT7P	MAP2006HT7P	MAP1406HT7P
Cooling (*2)	Capacity 100%		(kW)	125.0			152.0		
	Power consumption		(kW)	36.60			47.3		
	EER (Energy Efficiency Ratio)	Capacity 100%		3.42			3.21		
		Capacity 80%		4.10			3.94		
		capacity 50%		5.68			5.63		
Heating (*2)	Capacity 100%		(kW)	140.0			171.0		
	Power consumption		(kW)	33.7			43.6		
	COP (Coefficiency of Performance)	Capacity 100%		4.15			3.92		
		Capacity 80%		4.61			4.40		
		Capacity 50%		5.49			5.22		
Total weight	Heat Pump		(kg)	299	299	299	370	370	299
Compressor	Motor output		(kW)	5.8×2	4.8×2	4.8×2	7.6×2	7.6×2	4.8×2
Fan unit	Motor output		(kW)	1.0	1.0	1.0	2.0	2.0	1.0
	Air volume		(m^3/h)	12,600	12,200	12,200	17,900	17,900	12,200
Refrigerant piping	Main pipe diameter	Gas side	(mm)	ø 41.3			ø 41.3		
		Liquid side	(mm)	ø 22.2			ø 22.2		
		Balance pipe	(mm)	ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))	66.0/68.0			65.5/67.0		

Outdoor units external drawings

Model : MMY-MAP0806HT8P, MAP0806HT7P
MMY-MAP1006HT8P, MAP1006HT7P
MMY-MAP1206HT8P, MAP1206HT7P

Model Name	ØA
MAP0806 type	Ø19.1
MAP1006 type	Ø22.2
MAP1206 type	Ø28.6

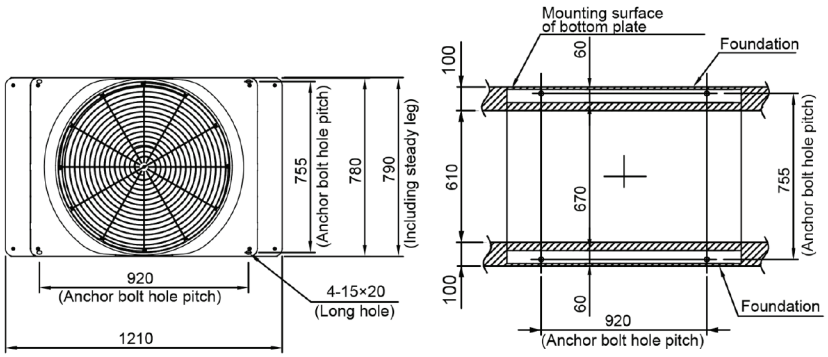


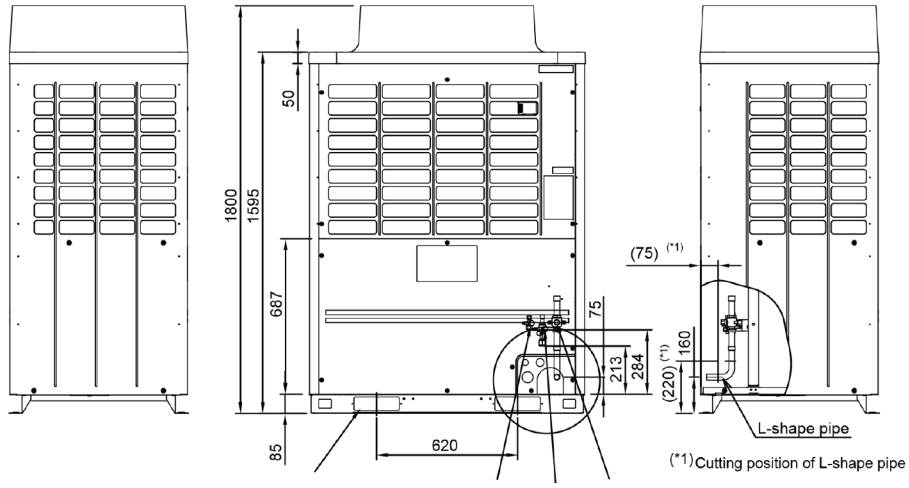
(Note)

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 heavey protection model is the same as that of standard model.

(Unit:mm)

Model : MMY-MAP1406HT8P,MMY-MAP1406HT7P
MMY-MAP1606HT8P,MMY-MAP1606HT7P





Square hole (for freight handling) 2-60X200

Gas pipe connection port φ28.6

Balance pipe connection port φ9.5

Liquid pipe connection port φ15.9

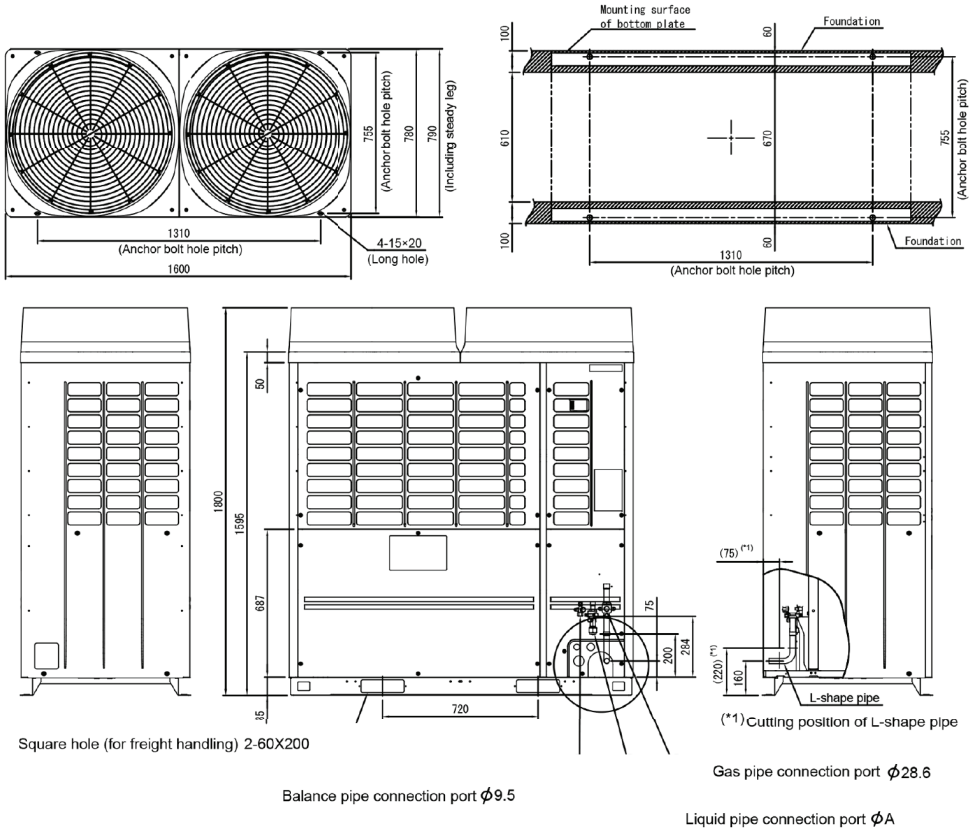
(Note)

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 heavey protection model is the same as that of standard model.

(Unit:mm)

Model : MMY-MAP1806HT8P, MMY-MAP1806HT7P
MMY-MAP2006HT8P, MMY-MAP2006HT7P
MMY-MAP2206HT8P, MMY-MAP2206HT7P

Model Name	ØA
MAP1806 type	Ø15.9
MAP2006 type	Ø15.9
MAP2206 type	Ø19.1



(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 heavey protection model is the same as that of standard model.

(Unit:mm)

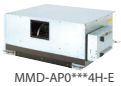
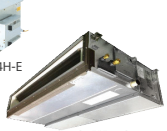


Indoor units





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	Concealed duct type
007 type 2.2 kW (0.8HP)		MMU-AP0074MH-E	MMU-AP0072WH	MMU-AP0074YH-E	MMD-AP0076BHP-E
009 type 2.8 kW (1HP)	MMU-AP0094HP-E	MMU-AP0094MH-E	MMU-AP0092WH	MMU-AP0094YH-E	MMD-AP0096BHP-E
012 type 3.6 kW (1.25HP)	MMU-AP0124HP-E	MMU-AP0124MH-E	MMU-AP0122WH	MMU-AP0124YH-E	MMD-AP0126BHP-E
015 type 4.5 kW (1.7HP)	MMU-AP0154HP-E	MMU-AP0154MH-E	MMU-AP0152WH	MMU-AP0154SH-E	MMD-AP0156BHP-E
018 type 5.6 kW (2HP)	MMU-AP0184HP-E	MMU-AP0184MH-E	MMU-AP0182WH	MMU-AP0184SH-E	MMD-AP0186BHP-E
024 type 7.1 kW (2.5HP)	MMU-AP0244HP-E		MMU-AP0242WH	MMU-AP0244SH-E	MMD-AP0246BHP-E
027 type 8.0 kW (3HP)	MMU-AP0274HP-E		MMU-AP0272WH		MMD-AP0276BHP-E
030 type 9.0 kW (3.2HP)	MMU-AP0304HP-E		MMU-AP0302WH		MMD-AP0306BHP-E
036 type 11.2 kW (4HP)	MMU-AP0364HP-E		MMU-AP0362WH		MMD-AP0366BHP-E
048 type 14.0 kW (5HP)	MMU-AP0484HP-E		MMU-AP0482WH		MMD-AP0486BHP-E
056 type 16.0 kW (6HP)	MMU-AP0564HP-E		MMU-AP0562WH		MMD-AP0566BHP-E
072 type 22.4 kW (8HP)					
096 type 28.0 kW (10HP)					

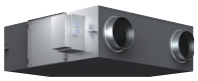

MMD-AP0***4H-E

MMD-AP0***6HP-E


Cooling capacity (HP equivalent)	Concealed duct high static pressure type	Slim duct type	Ceiling type	High wall type 3 series
007 type 2.2 kW (0.8HP)		MMD-AP0074SPH-E		MMK-AP0073H
009 type 2.8 kW (1HP)		MMD-AP0094SPH-E		MMK-AP0093H
012 type 3.6 kW (1.25HP)		MMD-AP0124SPH-E		MMK-AP0123H
015 type 4.5 kW (1.7HP)		MMD-AP0154SPH-E	MMC-AP0157HP-E	MMK-AP0153H
018 type 5.6 kW (2HP)	MMD-AP0186HP-E	MMD-AP0184SPH-E	MMC-AP0187HP-E	MMK-AP0183H
024 type 7.1 kW (2.5HP)	MMD-AP0246HP-E	MMD-AP0244SPH-E	MMC-AP0247HP-E	MMK-AP0243H
027 type 8.0 kW (3HP)	MMD-AP0276HP-E	MMD-AP0274SPH-E	MMC-AP0277HP-E	
030 type 9.0 kW (3.2HP)				
036 type 11.2 kW (4HP)	MMD-AP0366HP-E		MMC-AP0367HP-E	
048 type 14.0 kW (5HP)	MMD-AP0486HP-E		MMC-AP0487HP-E	
056 type 16.0 kW (6HP)	MMD-AP0566HP-E		MMC-AP0567HP-E	
072 type 22.4 kW (8HP)	MMD-AP0724H-E			
096 type 28.0 kW (10HP)	MMD-AP0964H-E			






Cooling capacity (HP equivalent)	Console	Floor standing cabinet type	Floor standing concealed type	Floor standing type	Large capacity floor standing type
007 type 2.2 kW (0.8HP)	MML-AP0074NH-E	MML-AP0074H-E	MML-AP0074BH-E		
009 type 2.8 kW (1HP)	MML-AP0094NH-E	MML-AP0094H-E	MML-AP0094BH-E		
012 type 3.6 kW (1.25HP)	MML-AP0124NH-E	MML-AP0124H-E	MML-AP0124BH-E		
015 type 4.5 kW (1.7HP)	MML-AP0154NH-E	MML-AP0154H-E	MML-AP0154BH-E	MMF-AP0156H-E	
018 type 5.6 kW (2HP)	MML-AP0184NH-E	MML-AP0184H-E	MML-AP0184BH-E	MMF-AP0186H-E	
024 type 7.1 kW (2.5HP)		MML-AP0244H-E	MML-AP0244BH-E	MMF-AP0246H-E	
027 type 8.0 kW (3HP)				MMF-AP0276H-E	
030 type 9.0 kW (3.2HP)					
036 type 11.2 kW (4HP)				MMF-AP0366H-E	
048 type 14.0 kW (5HP)				MMF-AP0486H-E	AP0723DH-V/H-VA/VB
056 type 16.0 kW (6HP)				MMF-AP0566H-E	AP0963DH-V/H-VA/VB
072 type 22.4 kW (8HP)					AP1443DH-V/H-VA/VB
096 type 28.0 kW (10HP)					AP19233DH-V/H-VA/VB



Air volume	Air-to-air heat exchanger with DX-coil type	Fresh air intake Indoor unit type
150 m^3/h		
250 m^3/h		
350 m^3/h		
500 m^3/h	MMD-VN502HEXE	
650 m^3/h		
800 m^3/h	MMD-VN800HEXE	
1000 m^3/h	MMD-VN1002HEXE/2	
1500 m^3/h		
2000 m^3/h		
1080 m^3/h		MMD-AP0481HFE
1680 m^3/h		MMD-AP0721HFE
2100 m^3/h		MMD-AP0961HFE

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

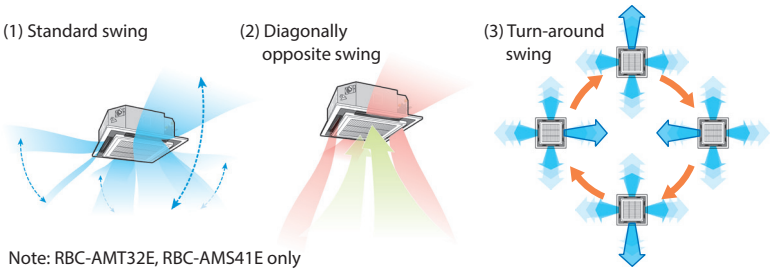
*: Does not connect to refrigerant piping from outdoor unit. Control wires can be connected.

4-way Air Discharge Cassette Type

MMU-AP***4HP-E

Individual louver control

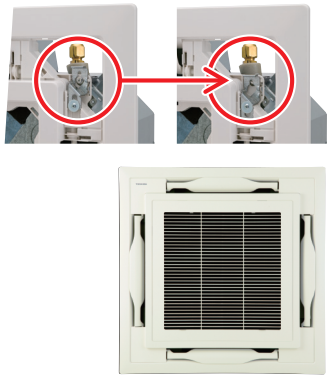
The angles of each of the four louver can be set individually
=> Enables airflow to be adapted to user preferences.



Note: RBC-AMT32E, RBC-AMS41E only

Easy installation

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



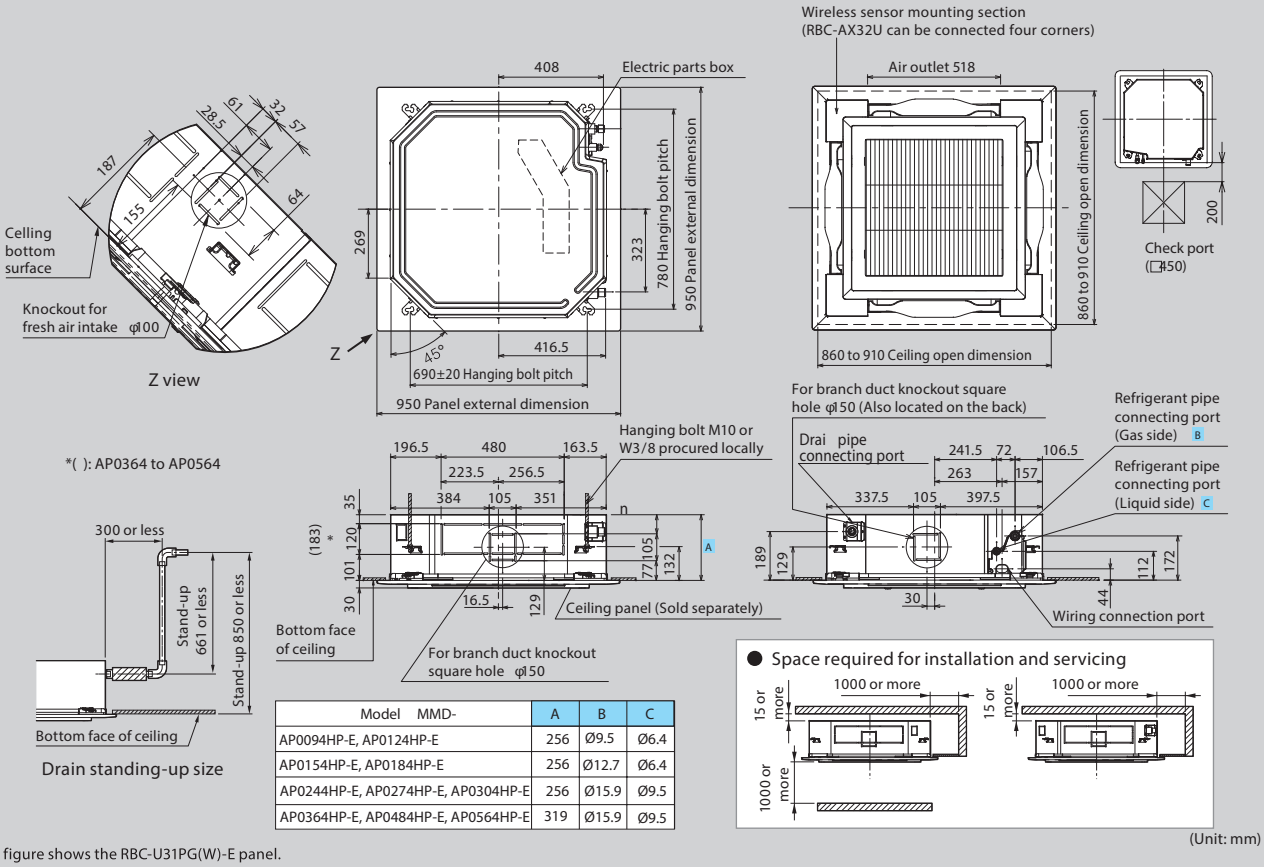
RBC-U31PGP(W)-E

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
Appearance (Ceiling panel)		Model	RBC-U31PGP(W)-E									
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	256 (30)*							319 (30)*		
	Width	(mm)	840 (950)*									
	Depth	(mm)	840 (950)*									
Total weight: Main unit (Ceiling panel)*		(kg)	18 (4)*		20 (4)*					25 (4)*		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	800/730/680		930/ 830/790	1050/ 920/800	1290/920/800		1320/ 1110/850	1970/ 1430/1070	2130/ 1430/1130	2130/ 1520/1230
	Motor output	(W)	14				20			68	72	
Connecting pipe	Gas side	(mm)	ø9.5		ø12.7		ø15.9					
	Liquid side	(mm)	ø6.4				ø9.5					
	Drain port (nominal dia.)	(mm)	25 (Polyvinyl chloride tube)									
Sound pressure level*2 (High/Mid/Low)		(dB(A))	30/29/27		31/29/27	32/29/27	35/31/28		38/33/30	43/38/32	46/38/33	46/40/33

* 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-AP0074HP-E to AP0564HP-E

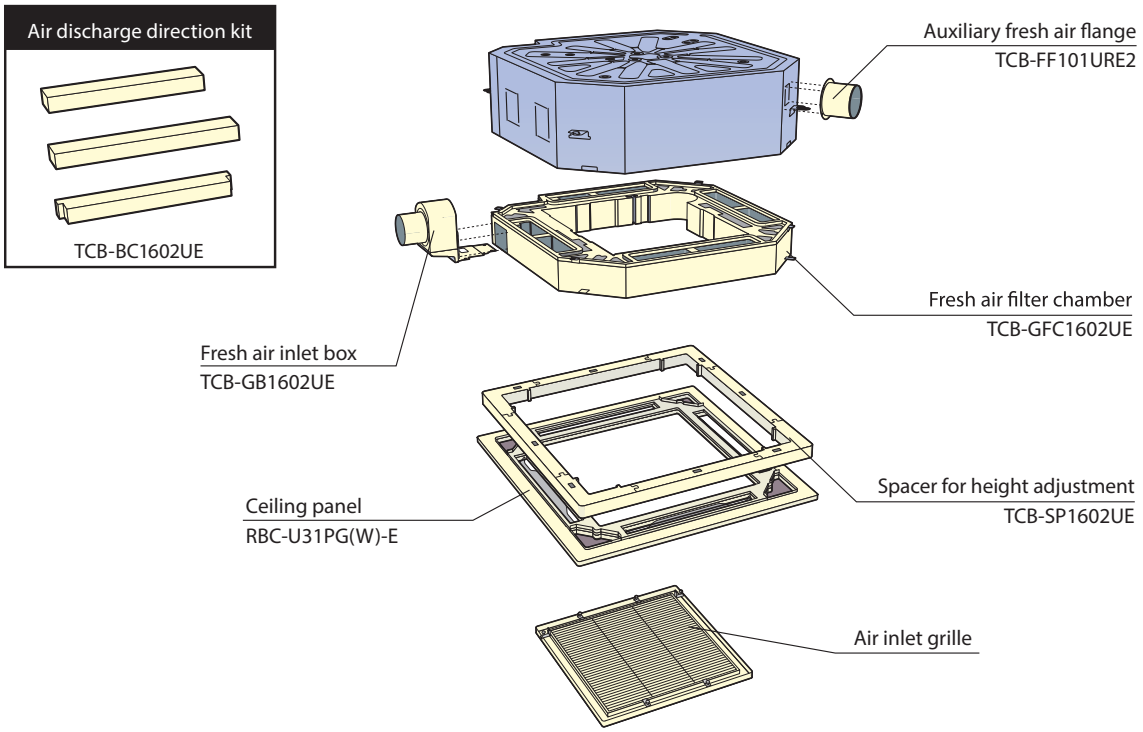


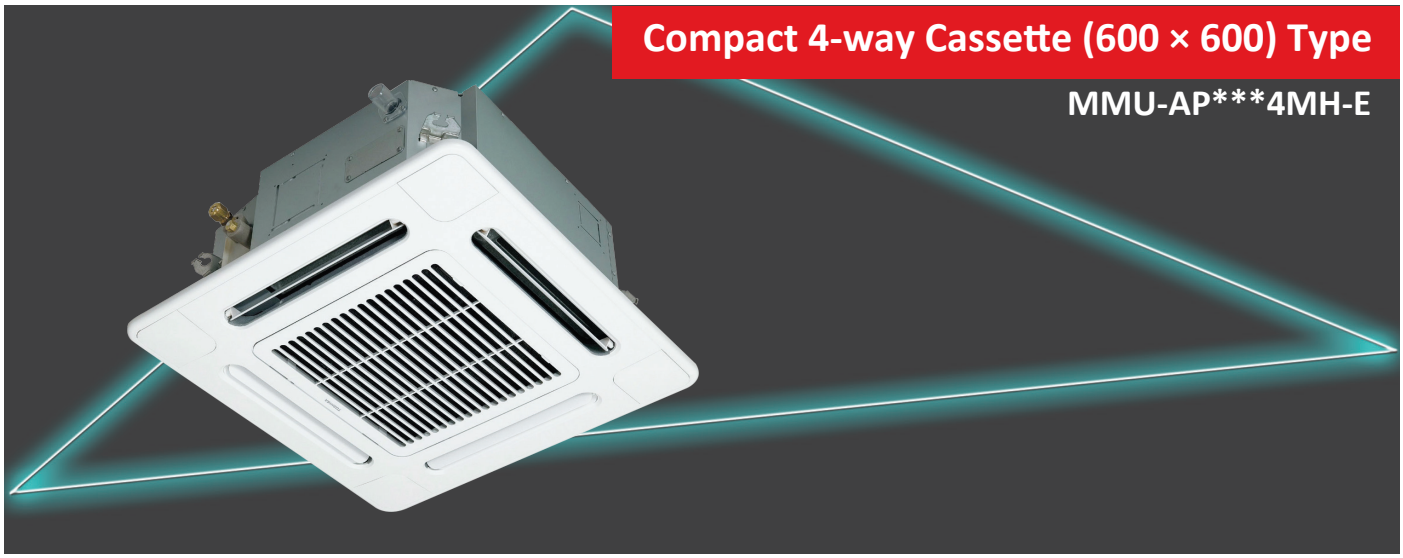
Model MMD-	A	B	C
AP0094HP-E, AP0124HP-E	256	Ø9.5	Ø6.4
AP0154HP-E, AP0184HP-E	256	Ø12.7	Ø6.4
AP0244HP-E, AP0274HP-E, AP0304HP-E	256	Ø15.9	Ø9.5
AP0364HP-E, AP0484HP-E, AP0564HP-E	319	Ø15.9	Ø9.5

(Unit: mm)

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

Options





Compact 4-way Cassette (600 × 600) Type

MMU-AP***4MH-E

Perfect for grid system ceiling

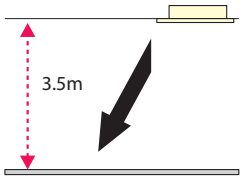
This compact unit (575 × 575 mm) fits perfectly into ceilings and matches standard architectural modules, without the need to cut ceiling tiles.
The flaps fold tightly against the ceiling when operation stops so that the ceiling is affected only slightly even if air conditioning is installed.

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



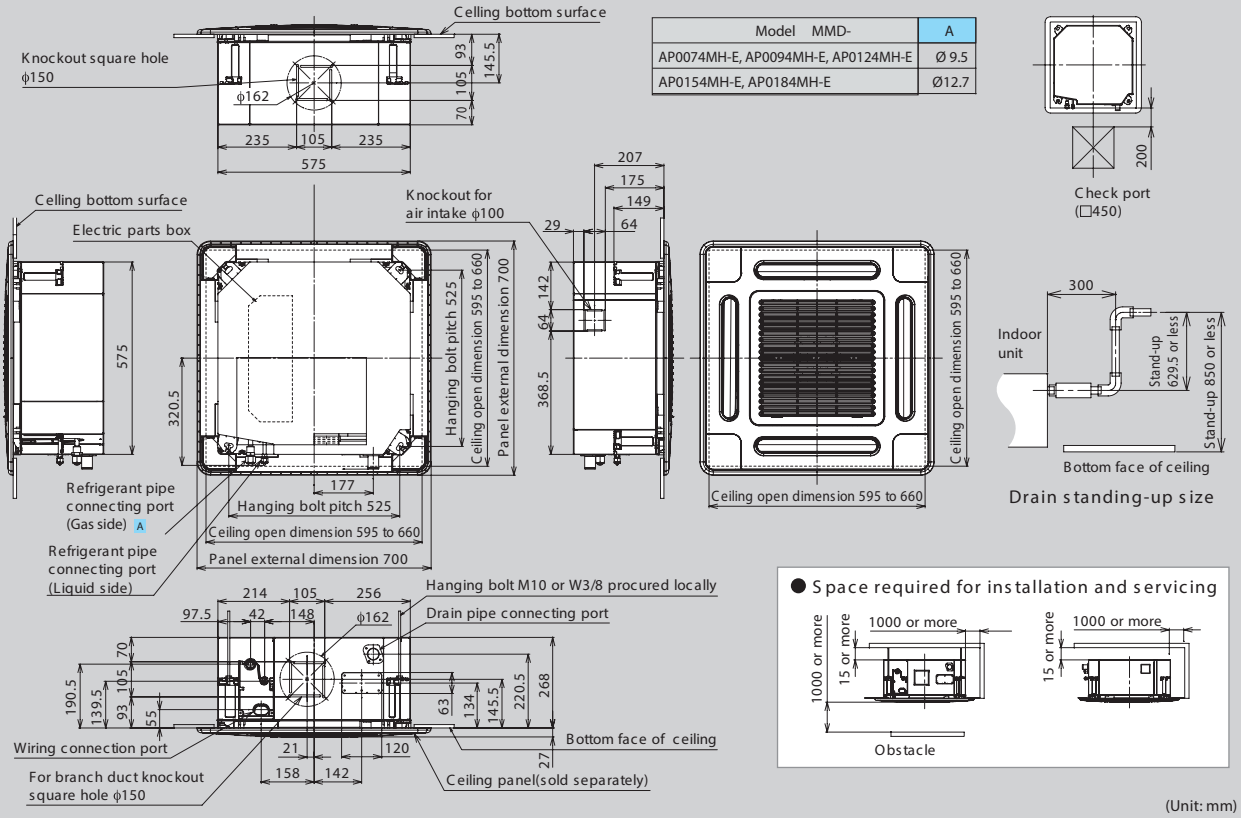
Maximum height

Technical specifications

Model name		MMU-	AP0074MH-E	AP0094MH-E	AP0124MH-E	AP0154MH-E	AP0184MH-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)	0.034/0.034	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)	552/462/378	570/468/378	594/504/402	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.)	25 (Polyvinyl chloride tube)				
Sound pressure level*2 (High/Mid/Low)		(dB(A))	36/32/28	37/33/28	37/33/29	40/35/30	44/39/34

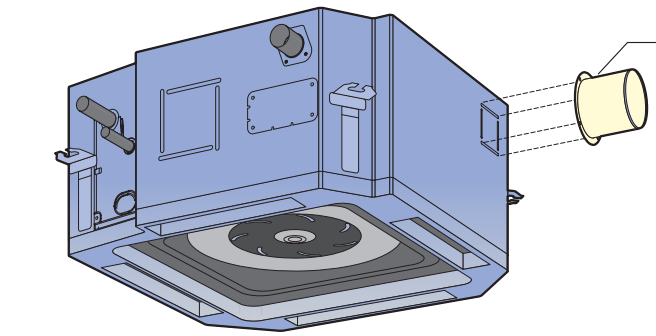
* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured 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-AP0074MH-E to AP0184MH-E

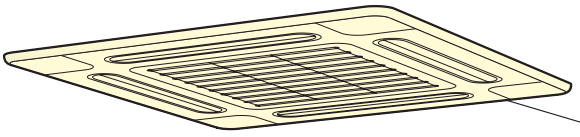


(Unit: mm)

Options



Auxiliary fresh air flange
TCB-FF101URE2



Ceiling panel
RBC-UM11PG(W)E

2-way Air Discharge Cassette Type

MMU-AP***2WH

Slim and compact unit

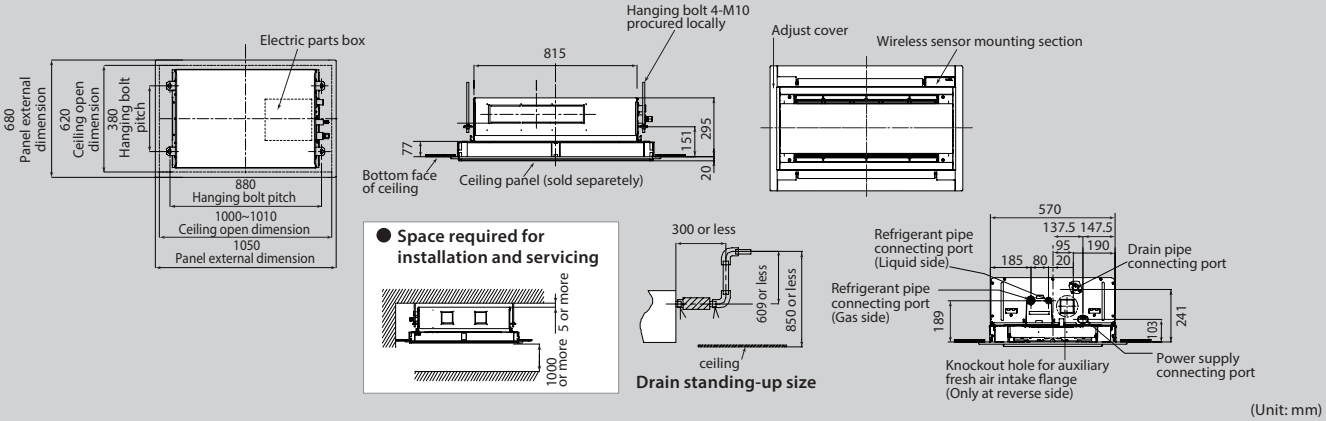
Unified the width of ceiling panel to 680mm.
Condensate drain pump included.
Available for ceilings up to 3.8m in height. (in case of 0.8HP to 3.2HP)
Easy installation and fine adjustment using the “Adjust-Cover” function.

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.)	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

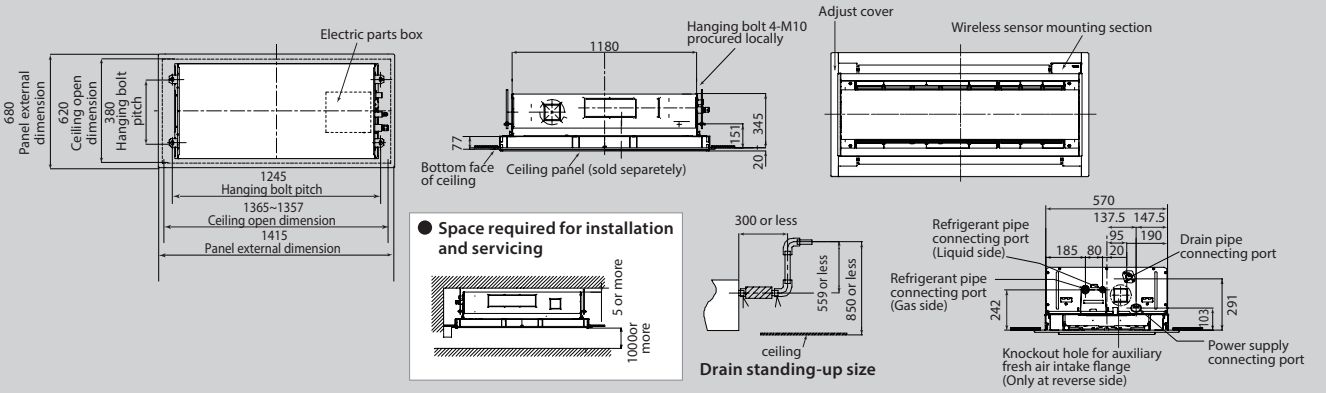
* Figures in parentheses are for ceiling panels.
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured 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



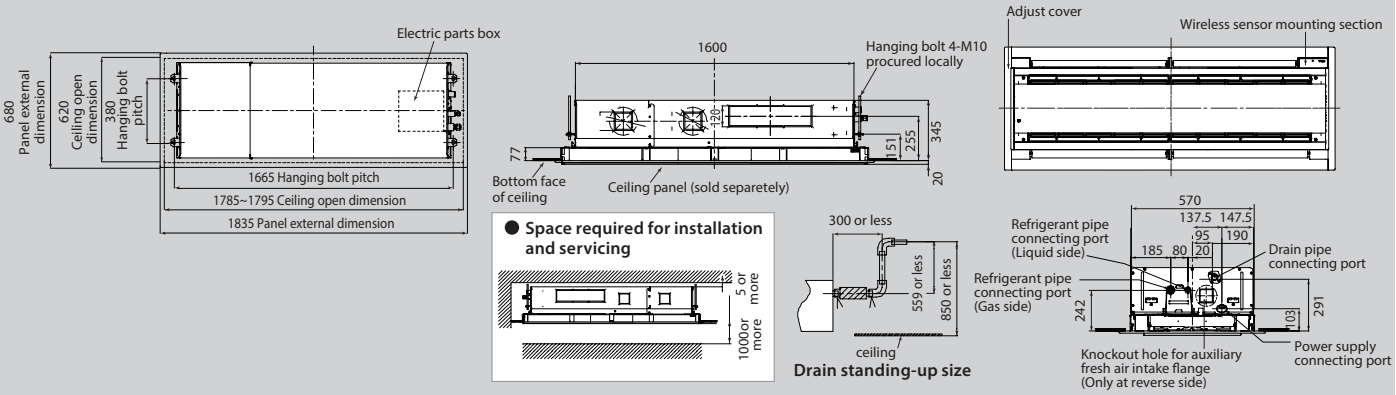
(Unit: mm)

MMU-AP0182WH to AP0302WH



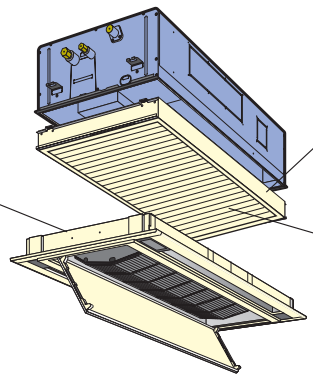
(Unit: mm)

MMU-AP0362WH to AP0562WH



(Unit: mm)

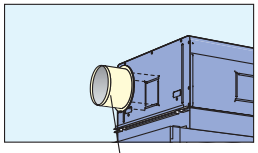
Options



Ceiling panel
RBC-UW283PG(W)-E
RBC-UW803PG(W)-E
RBC-UW1403PG(W)-E

Filter chamber
TCB-FC283UW-E
TCB-FC803UW-E
TCB-FC1403UW-E

Super long life filter
TCB-LF283UW-E
TCB-LF803UW-E
TCB-LF1403UW-E



Auxiliary fresh air flange
TCB-FF151US-E

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)

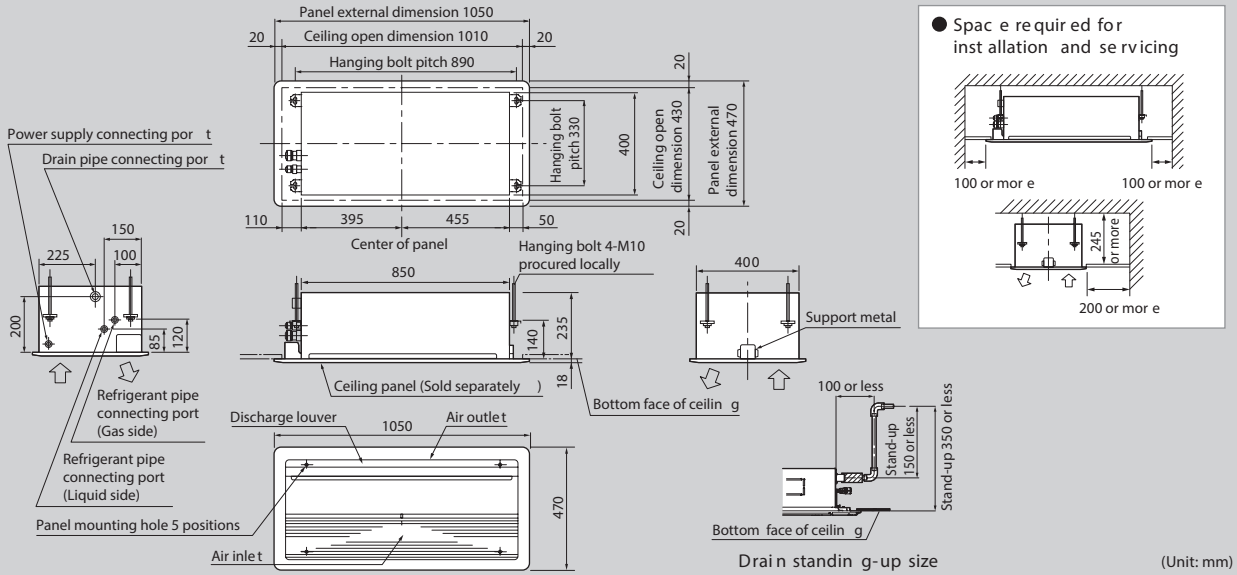
Preparations/connection possible with a circle duct flange.

Technical specifications

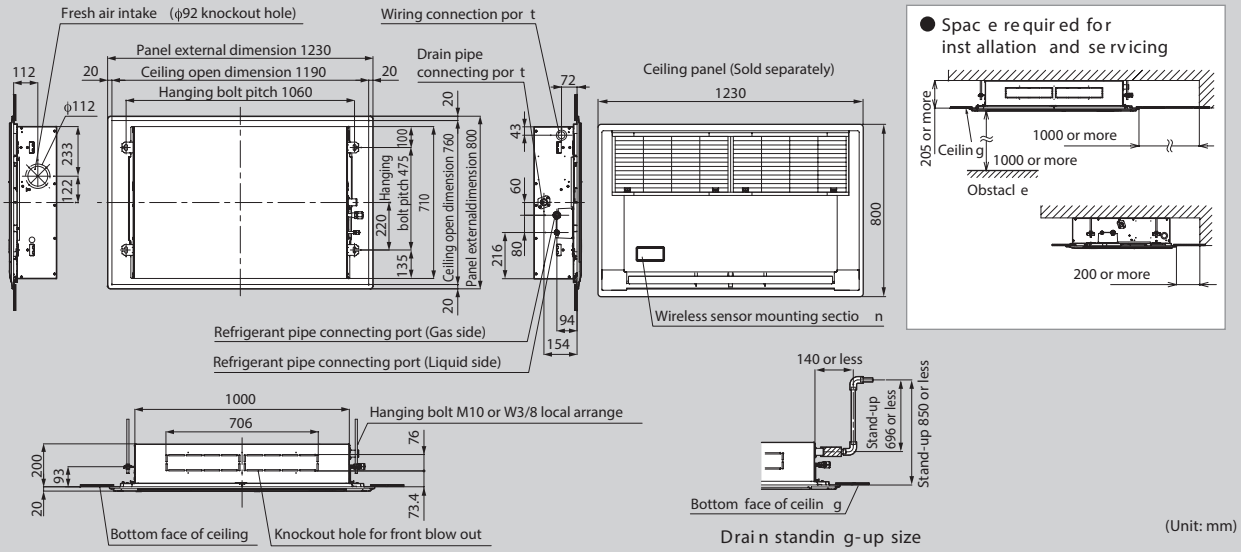
Model name		MMU-	AP0074YH-E	AP0094YH-E	AP0124YH-E	AP0154SH-E	AP0184SH-E	AP0244SH-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)					
	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					ø9.5
	Drain port (nominal dia.)		25 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	42/39/34			37/35/32	38/36/34	45/41/37

* 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

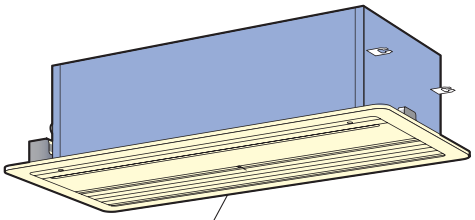


MMU-AP0154SH-E to AP0244SH-E

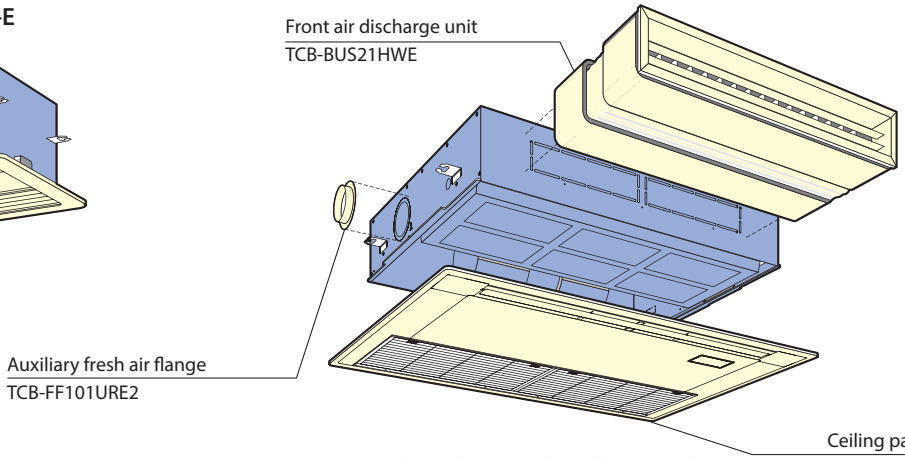


Options

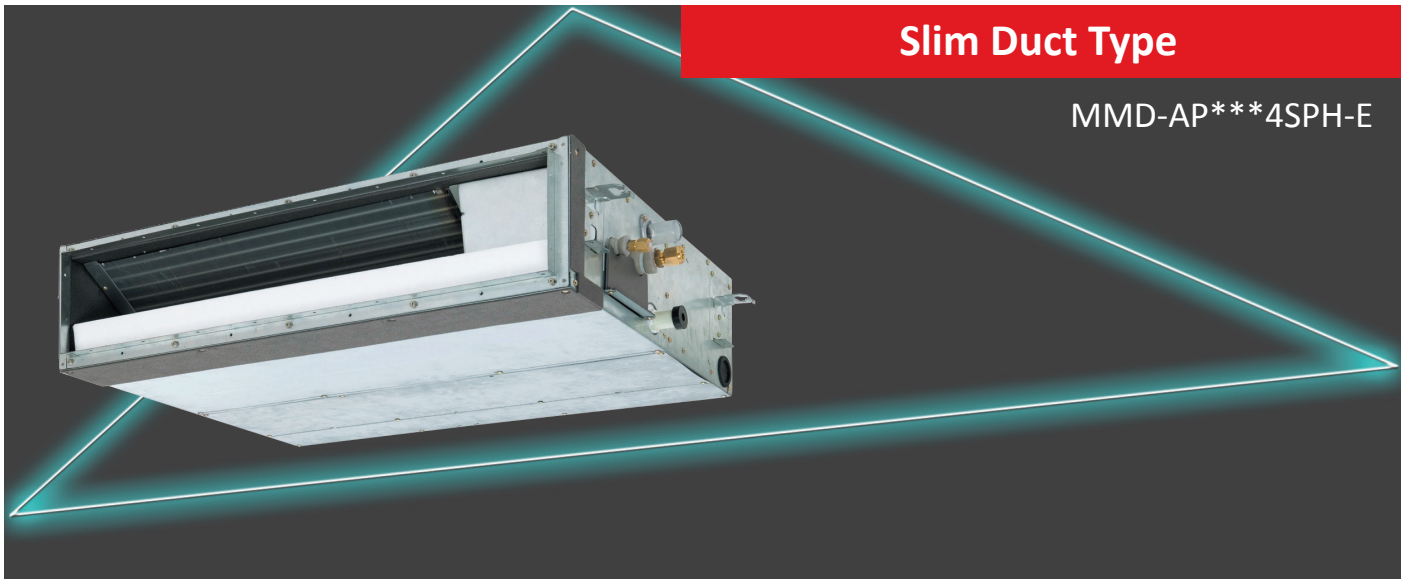
AP0074YH-E/AP0094YH-E/AP0124YH-E



Ceiling panel
RBC-UY136PG



AP0154SH-E/AP0184SH-E/AP0244SH-E



Slim Duct Type

MMD-AP***4SPH-E

Functional design

Only 210 mm in height for greater application flexibility.

4-step static pressure setup.

Concealed installation within a ceiling void.

Auxiliary fresh air intake available.

Slim & quiet

Perfect comfort throughout the room.

Can be used with any style of air diffuser.

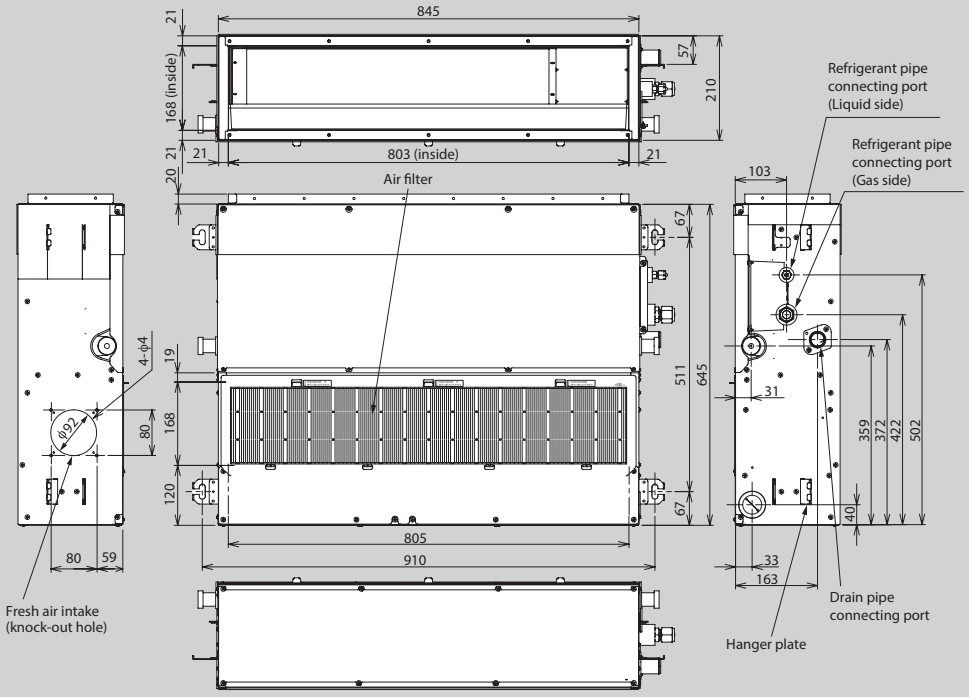
Quiet, powerful operation.

Technical specifications

Model name		MMD-	AP0074SPH-E	AP0094SPH-E	AP0124SPH-E	AP0154SPH-E	AP0184SPH-E	AP0244SPH-E	AP0274SPH-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0
Electrical characteristics	Power supply		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)						
	Power consumption 50 Hz/60 Hz	(kW)	0.039/0.037		0.043/0.041	0.045/0.043	0.054/0.052	0.105//0.105	
External dimensions	Height	(mm)	210						
	Width	(mm)	845					1140	
	Depth	(mm)	645						
Total weight		(kg)	22			23		29	
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	540/470/400		600/520/450	690/600/520	780/680/580	1080/1000/900	
	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					ø9.5	
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)						
Sound pressure level*2 (High/Med./Low)	Under air inlet	(dB(A))	36/33/30		38/35/32	39/36/33	40/38/36	49/47/44	
	Back air inlet	(dB(A))	28/26/24		29/27/25	32/30/28	33/31/29	38/36/33	

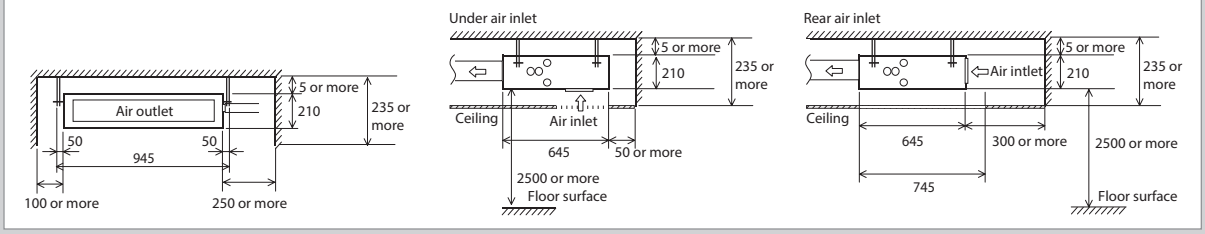
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS 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-AP0074SPH-E to AP0274SPH-E



Model MMD-
AP0074SPH-E to AP0274SPH-E

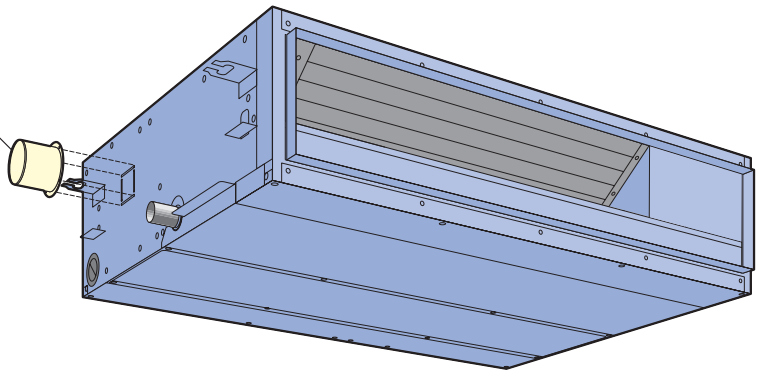
● Space required for installation and servicing



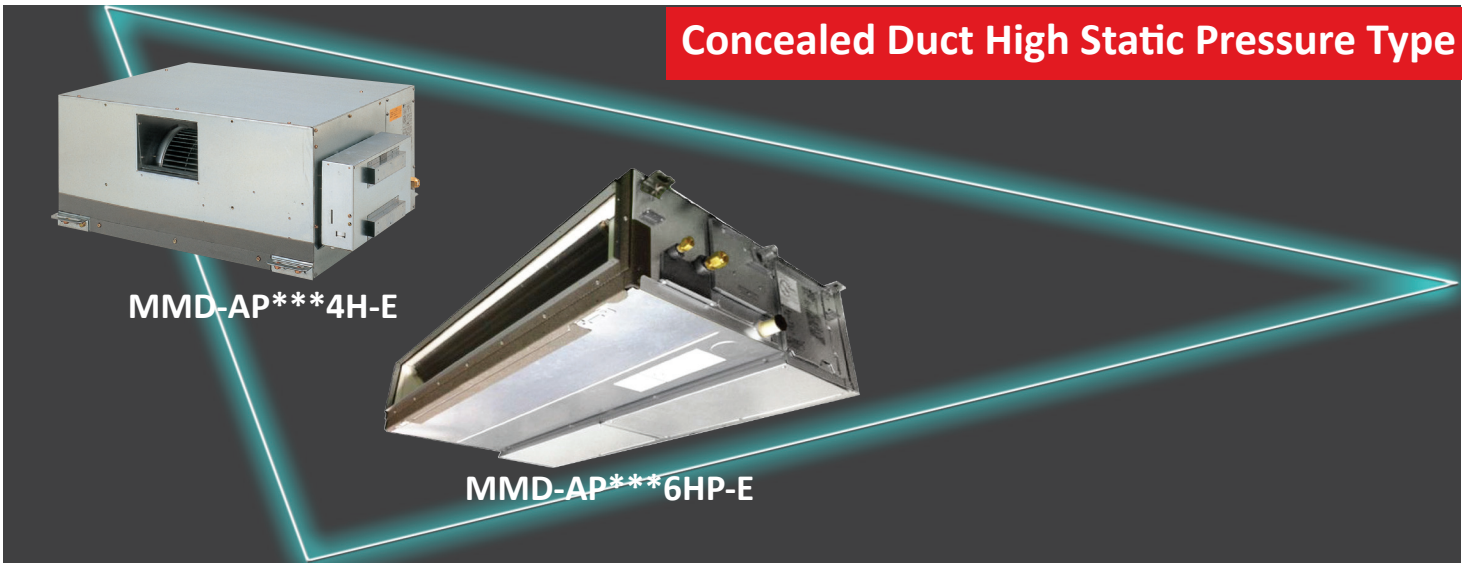
(Unit: mm)

Options

Auxiliary fresh air flange
TCB-FF101URE2



Concealed Duct High Static Pressure Type



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

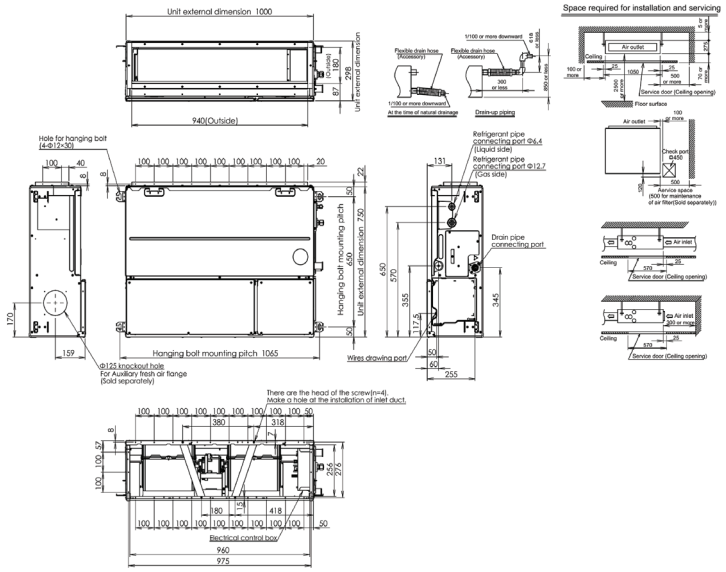
Three-stage-switchable static pressure.
The flexible duct is accessible.
Easy service and installation.
Inspection hole enables easy access and maintenance.

Technical specifications

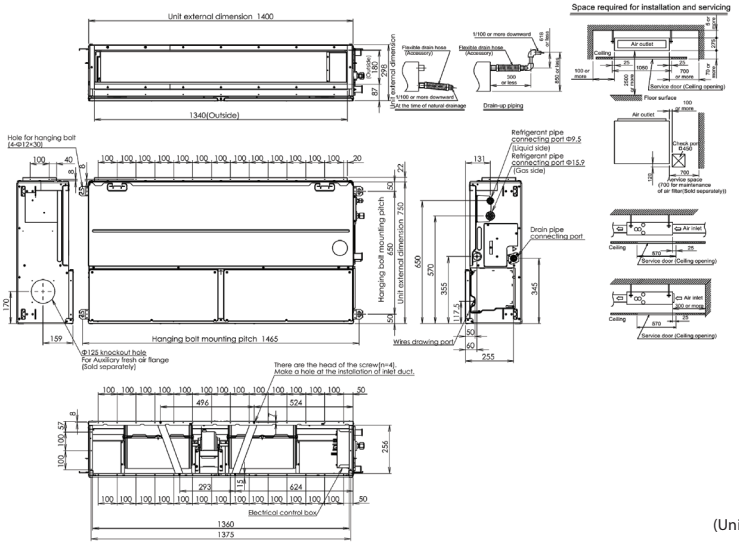
Model name		MMD-	AP0186HP-E	AP0246HP-E	AP0276HP-E	AP0366HP-E	AP0486HP-E	AP0566HP-E	AP0724H-E	AP0964H-E
Cooling/Heating capacity*1		(kW)	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0	22.4/25.0	28.0/31.5
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 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 (Med./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)	3600	4200
	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.)	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

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

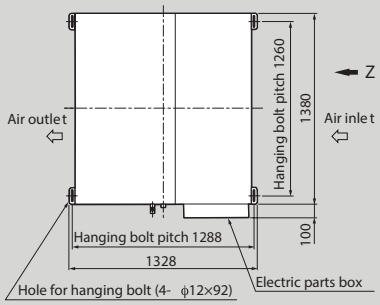


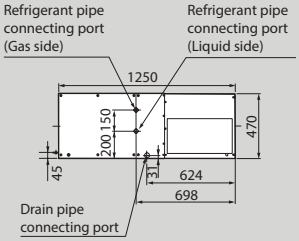
MMD-AP0366HP-E to AP0566HP-E

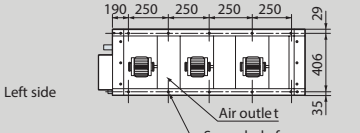


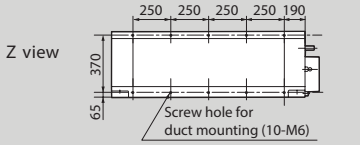
(Unit: mm)

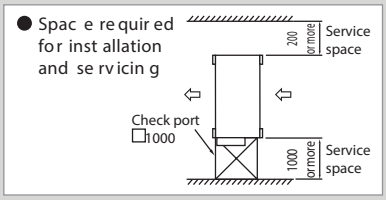
MMD-AP0724H-E, AP0964H-E





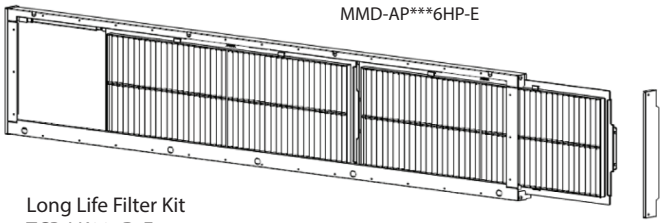




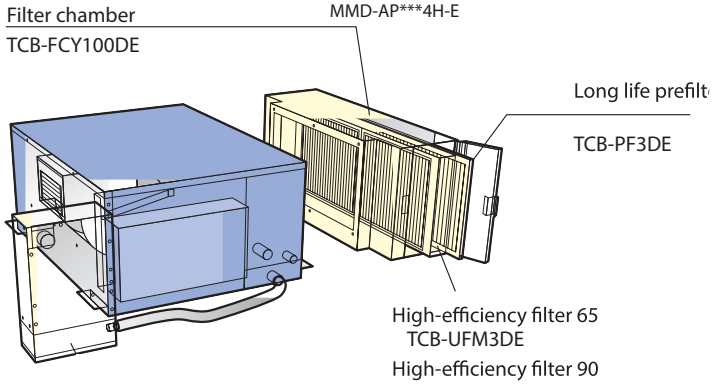


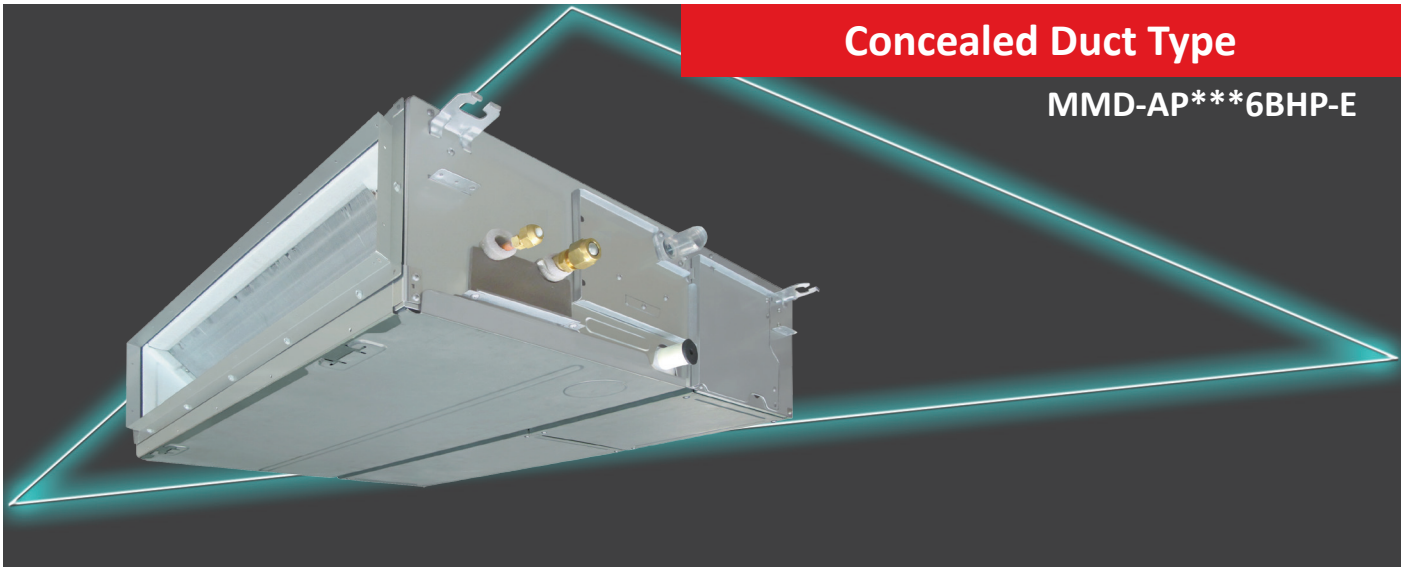
(Unit: mm)

Options



Long Life Filter Kit
TCB-LK801D-E
TCB-LK1401D-E





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

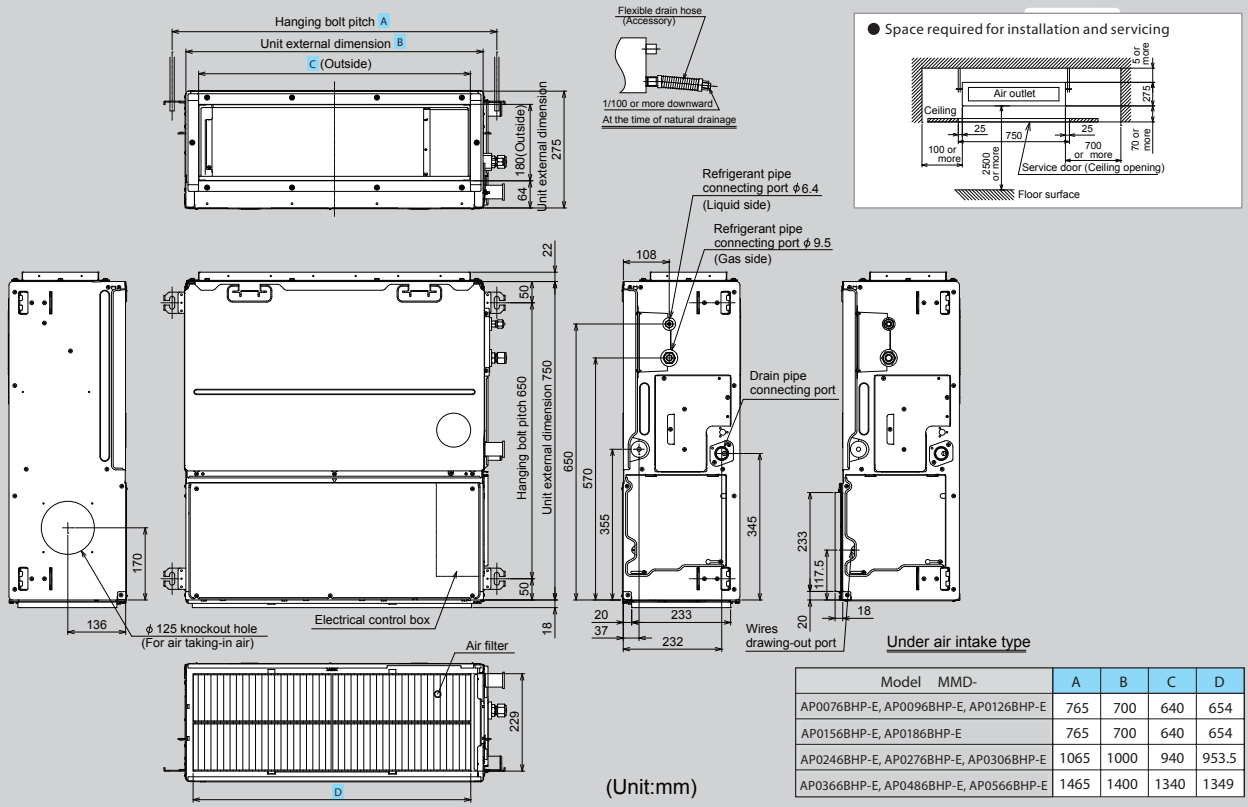
Built-in high-lift drain pump up to 850 mm.

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 dimension	Height	(mm)	275										
	Width	(mm)	700			700		1,000			1,400		
	Depth	(mm)	750										
Total weight		(kg)	23					30			40		
Fan unit	Standard air flow (Mid/Low)	(m^3/h)	540/ 450/360	570/ 480/390		798/ 660/540		1,200/990/870		1,260/ 1,110/930	1,920/ 1,620/1,380	2,100/ 1,740/1,500	
	Motor output	(W)	150								250		
	External static pressure (factory setting)	(Pa)	30					40			50		
	External static pressure	(Pa)	30-40-50-65-80-100-120 (7 steps)										
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9					
	Liquid side	(mm)	ø6.4					ø9.5					
	Drain port	(nominal dia.)	25 (Polypropylene tube)										
Sound pressure level*2 (High/Mid/Low)		(dB(A))	29/26/23	30/26/23		33/29/25		36/31/27			40/36/33		

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



(Unit:mm)

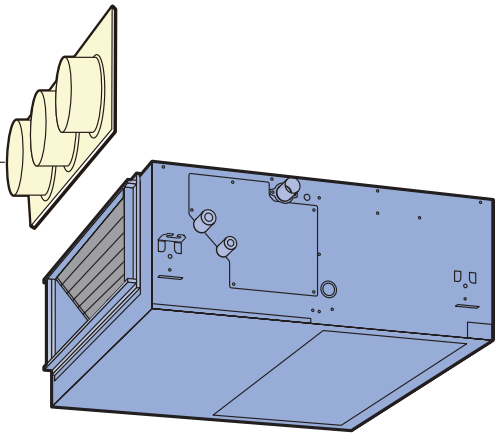
Model MMD-	A	B	C	D
AP0076BHP-E, AP0096BHP-E, AP0126BHP-E	765	700	640	654
AP0156BHP-E, AP0186BHP-E	765	700	640	654
AP0246BHP-E, AP0276BHP-E, AP0306BHP-E	1065	1000	940	953.5
AP0366BHP-E, AP0486BHP-E, AP0566BHP-E	1465	1400	1340	1349

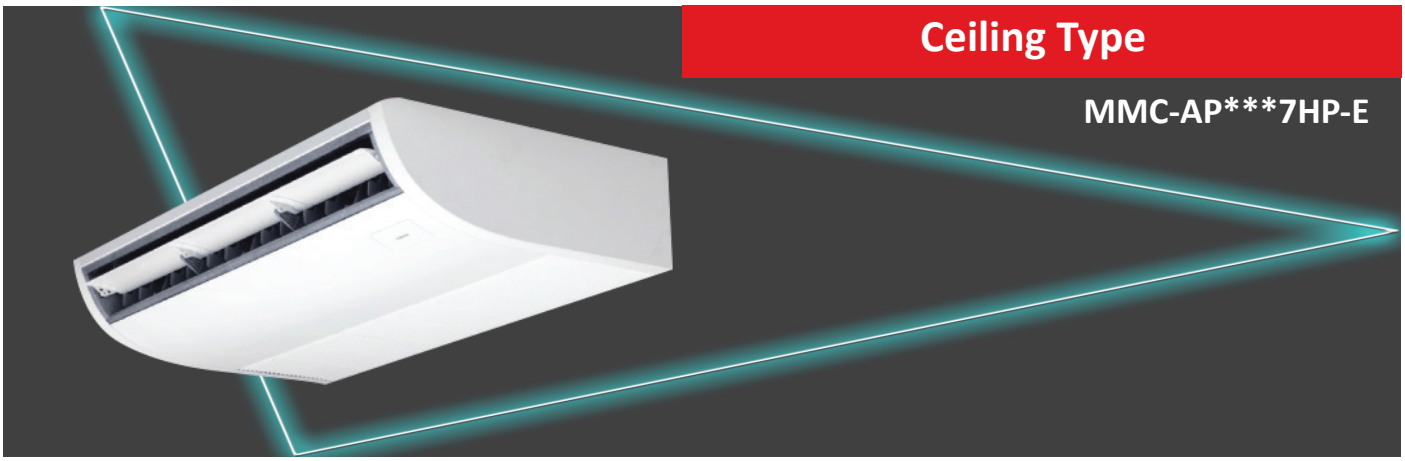
* Standard filter is provided, but deeper filtration filter needs to be purchased locally.

Options

Spigot shaped flange

TCB-SF56C6BPE
TCB-SF80C6BPE
TCB-SF160C6BPE





Ceiling Type

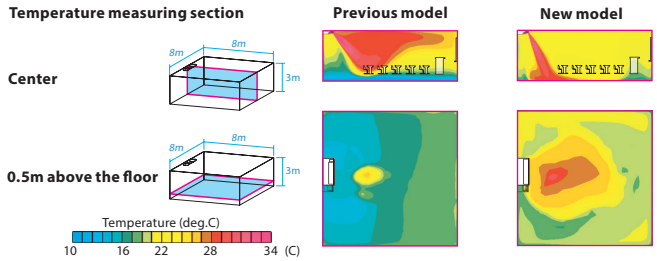
MMC-AP***7HP-E

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.

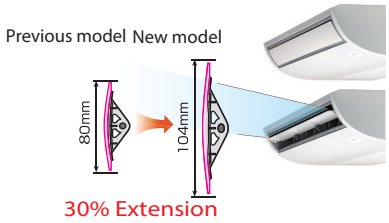
Smooth curve for pliant Shape

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



Flap control

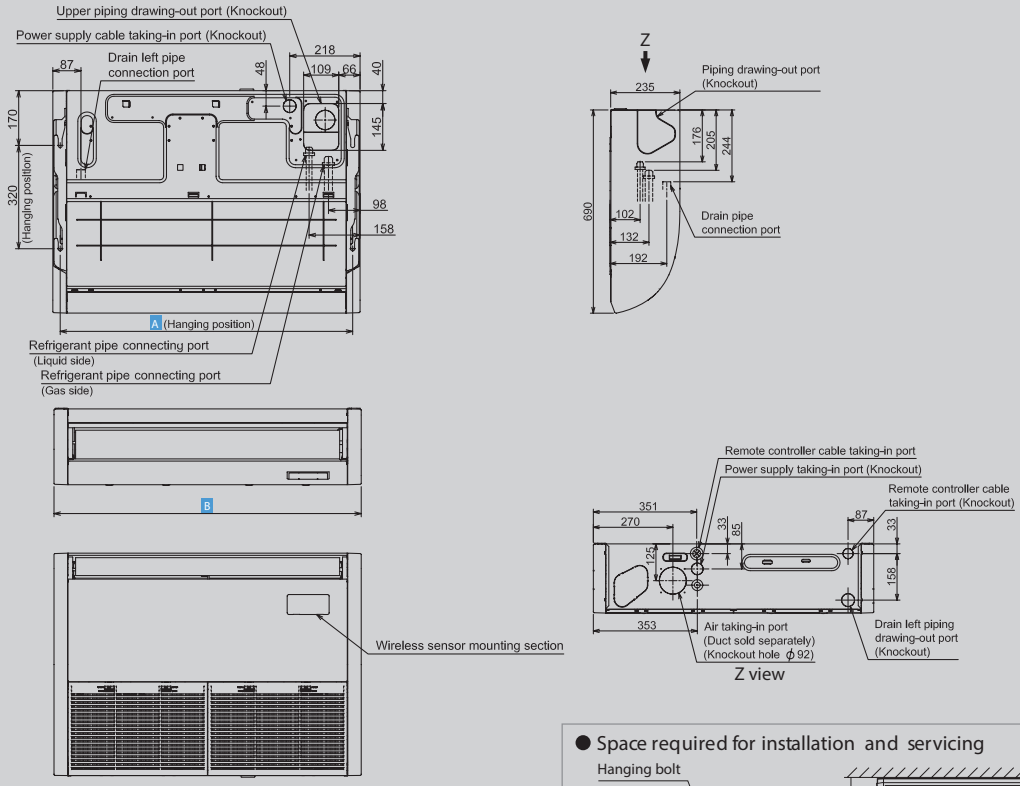
The airflow angle is automatically set to the most suitable setting according to your cooling or heating needs, and an automatic swing mode enables airflow to reach all areas of the room to create a comfortable ambience.

Technical specifications

Model name		MMC-	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	1440 /1020/750		1860 /1350/1020	1860 /1530/1200	2040 /1650/1260
	Motor	(W)	94		94		139		
Connecting pipe	Gas side	(mm)	ø12.7		ø15.9				
	Liquid side	(mm)	ø6.4		ø9.5				
	Drain port (nominal dia.)		20 (Polyvinyl chloride tube)						
Sound pressure level*2 (High/Mid/Low)		(dB(A))	36/34/28	37/35/28	41/36/29		44/38/32	44/41/35	46/42/36

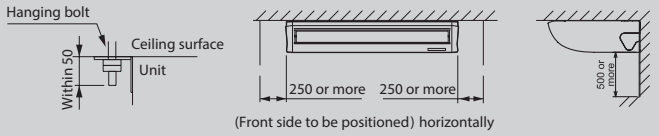
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS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

MMC-AP0157HP-E to AP0567HP-E

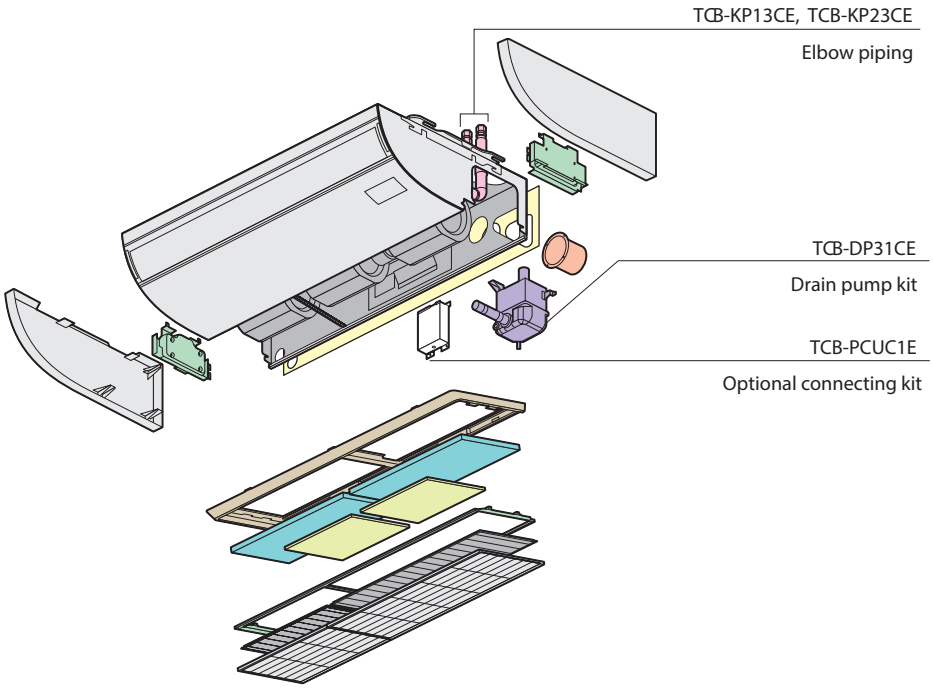


Model MMC-	A	B
AP0157HP-E, AP0187HP-E	906	950
AP0247HP-E, AP0277HP-E	1223	1269
AP0367HP-E, AP0487HP-E, AP0567HP-E	1540	1586

● Space required for installation and servicing



Options



High-wall Type (3 series)

MMK-AP***3H

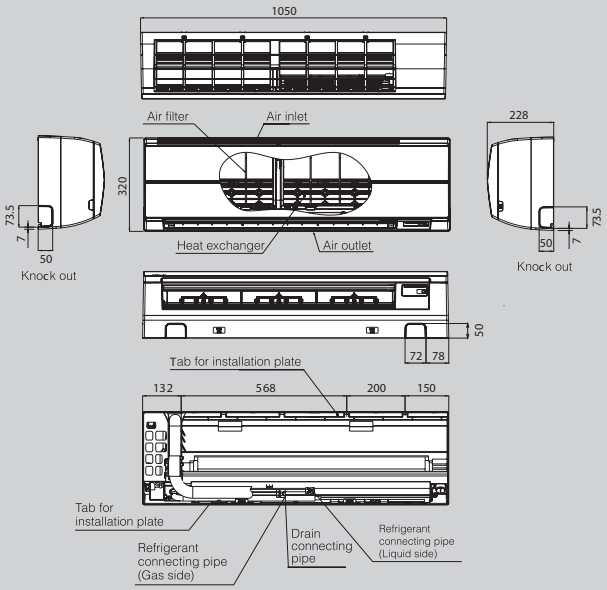
Elegant and slim

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

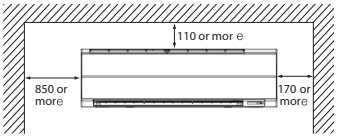
Total comfort is granted, thanks also to the 70° directional auto-swing louver that provides uniform air distribution.

Remote controller

MMK-AP0073H to AP0243H



● Space re quir ed for installation and se rv icing

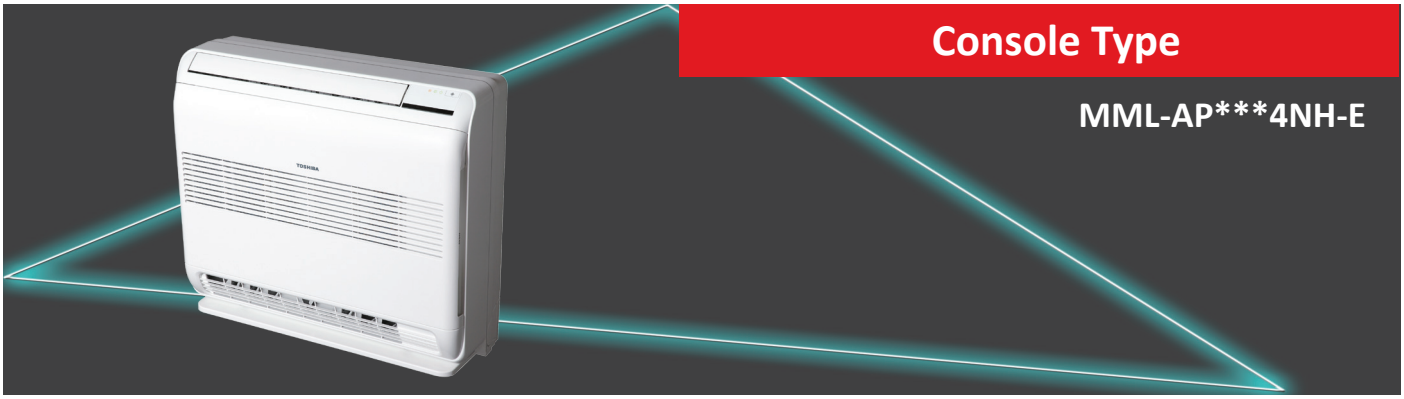


(Unit: mm)

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	(kW)	0.018	0.021		0.043		0.050
External dimensions	Height	(mm)	320					
	Width	(mm)	1050					
	Depth	(mm)	228					
Total weight		(kg)	15					
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	570/450/390	600/480/390		840/660/540		1020/750/570
	Motor output	(W)	30					
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port	(nominal dia.)	16 (polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	35/31/28	37/32/28		41/36/33		46/39/34

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

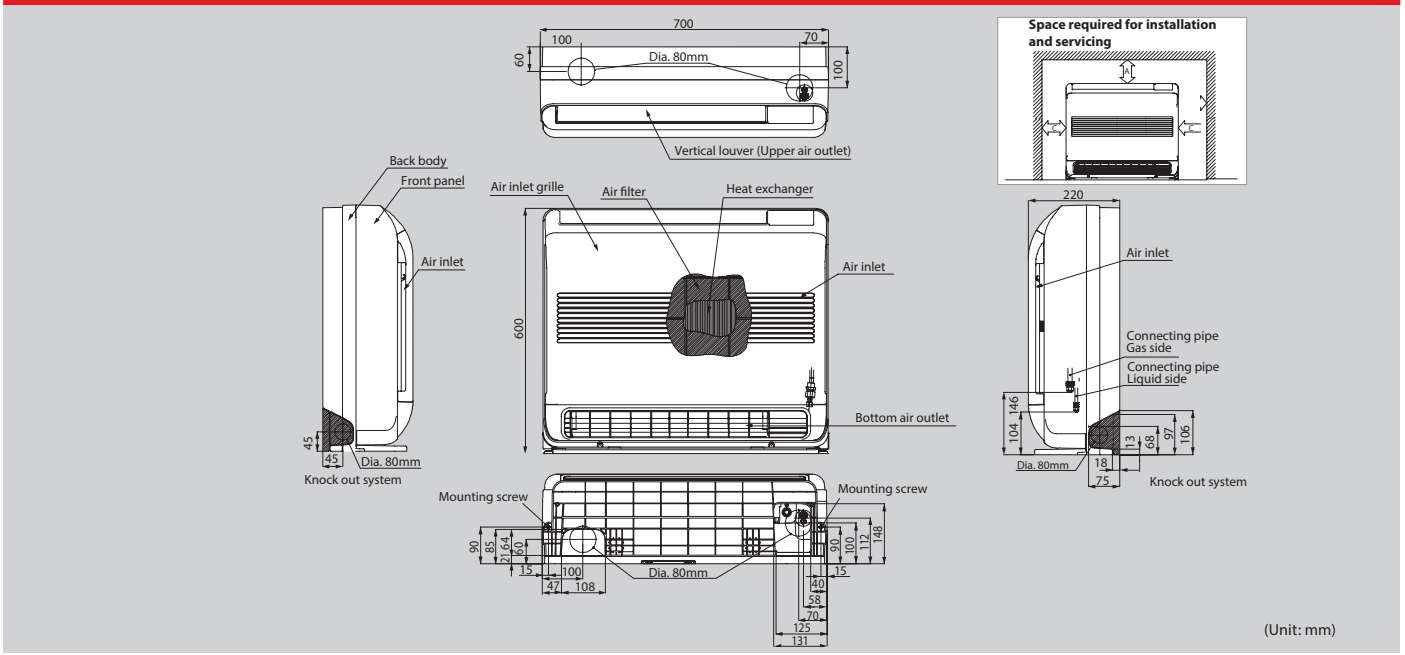
MML-AP***4NH-E

Features

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

Remote controller

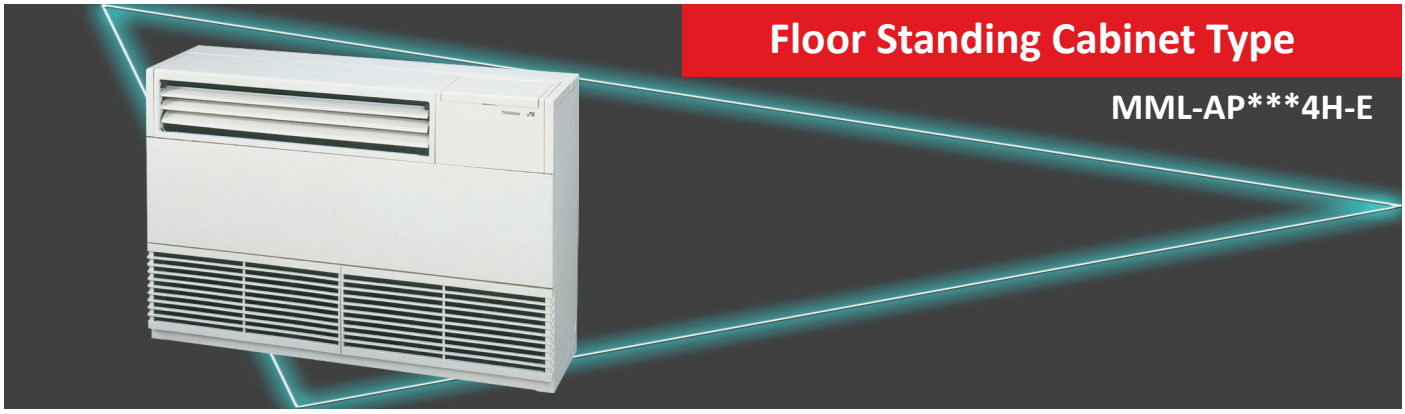
MML-AP0074NH-E to AP0184NH-E



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.)	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

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

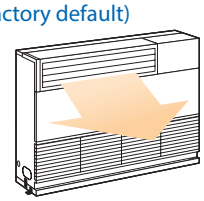
Under-window mounting does not block lighting.

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

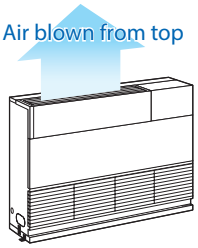
Slim & compact design

Distribution can be reversed to suit occupant preference.

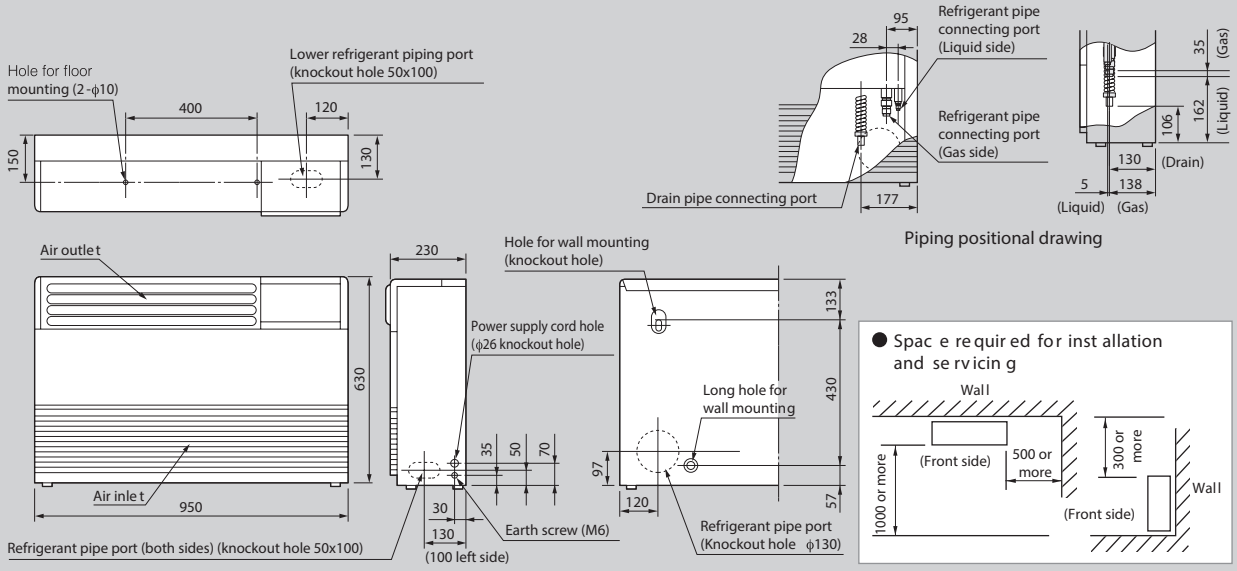
Air blown from front panel (factory default)



Air blown from top



MML-AP0074H-E to AP0244H-E

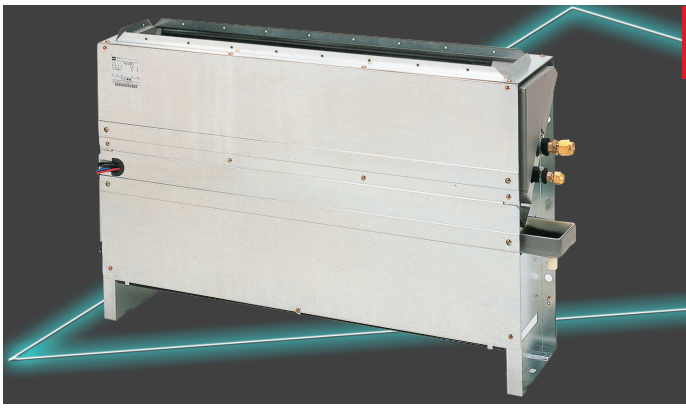


(Unit: mm)

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.)	20 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	39/37/35		45/41/38		49/44/39	

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

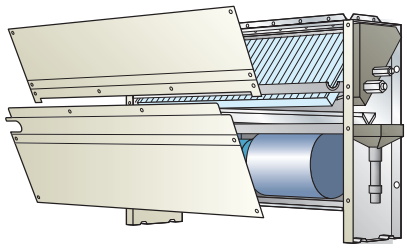
MML-AP***4BH-E

Cool air makes for a pleasant indoor environment

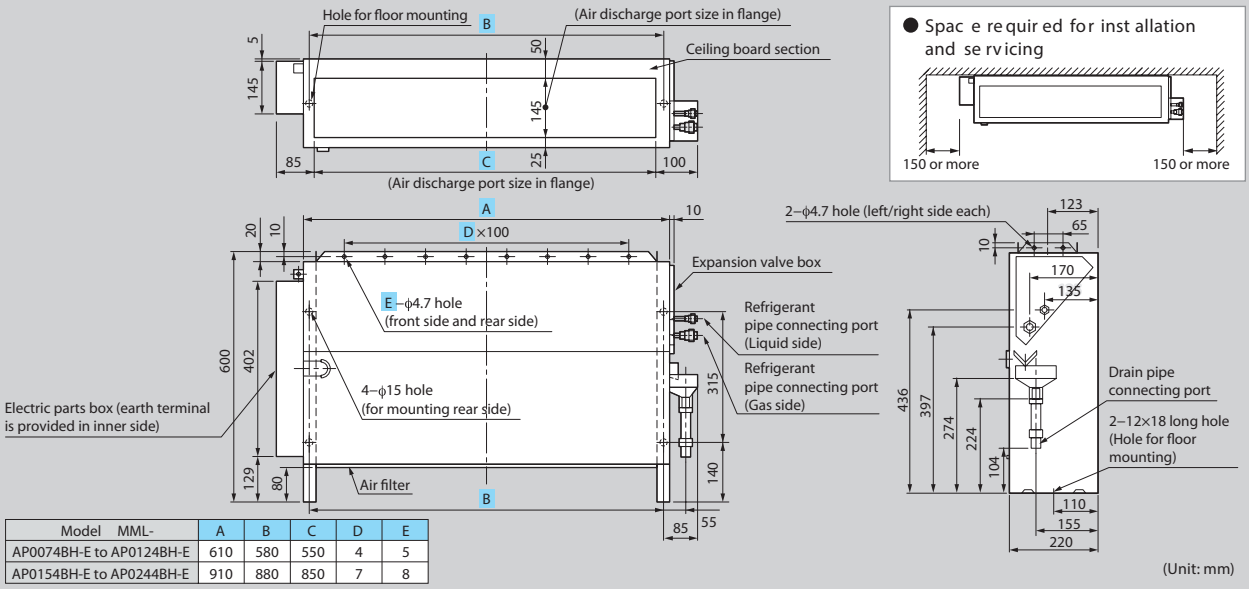
Install it under a window and air-condition any room effectively.

Easy maintenance

Simplified design of fan and drainage pipe eases maintenance.



MML-AP0074BH-E to AP0244BH-E

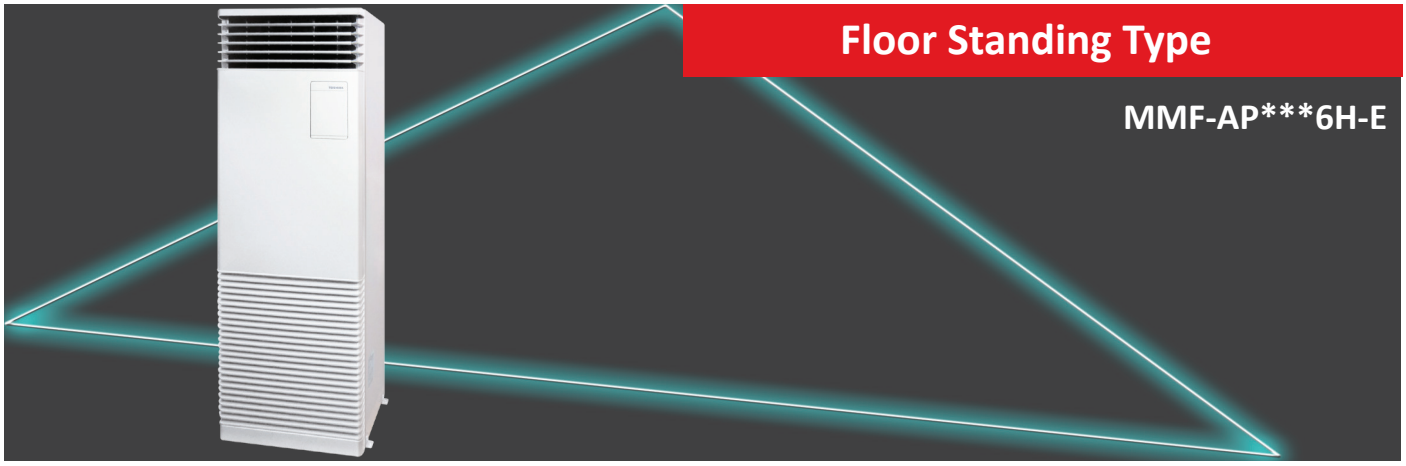


Model MML-	A	B	C	D	E
AP0074BH-E to AP0124BH-E	610	580	550	4	5
AP0154BH-E to AP0244BH-E	910	880	850	7	8

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			1045		
	Depth	(mm)	220					
Total weight		(kg)	21			29		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	460/400/300			740/600/490		950/790/640
	Motor output	(W)	19			70		
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7		ø15.9
	Liquid side	(mm)	ø6.4					ø9.5
	Drain port	(nominal dia.)	20 (Polyvinyl chloride tube)					
Sound pressure level*2 (High/Mid/Low)		(dB(A))	36/34/32					42/37/33

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



Floor Standing Type

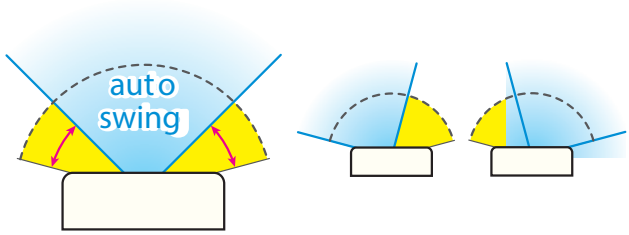
MMF-AP***6H-E

Thin profile suits interior design

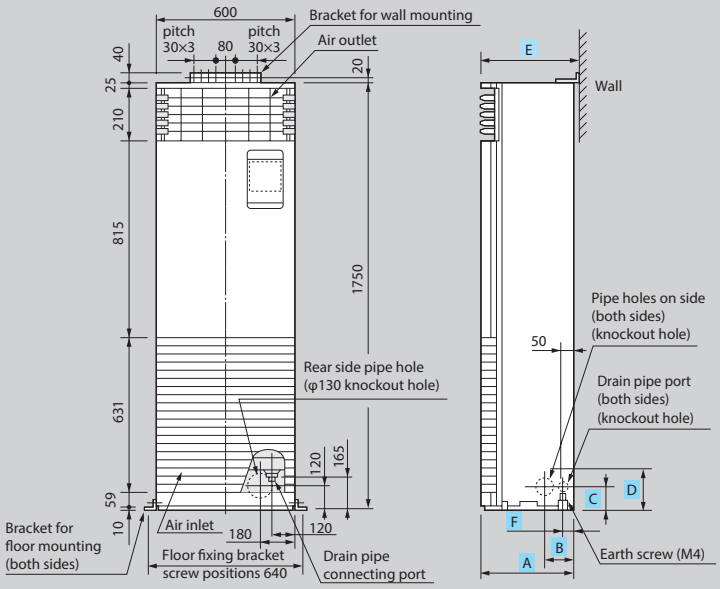
Slender, space-saving type (1.7–8.0HP)

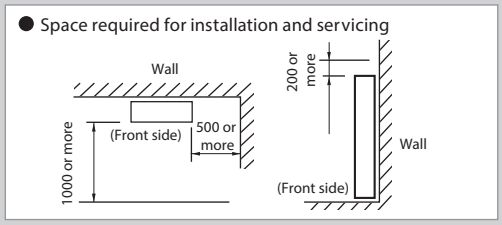
Wide outlet

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

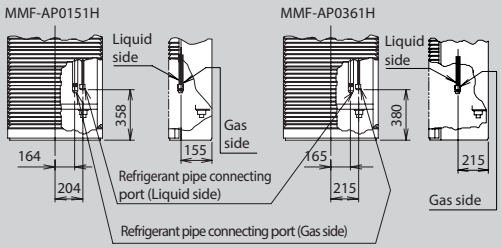


MMF-AP0156H-E to AP0566H-E





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



Refrigerant piping position

(Unit: mm)

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)	1750						
	Width	(mm)	600						
	Depth	(mm)	210				390		
Total weight		(kg)	46		47		62		
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	900/780/660		1200/990/840		1920/1620/1380	2160/1730/1560	
	Motor output	(W	62		62		109	109	
Connecting pipe	Gas side	(mm)	ø12.7			ø12.7			
	Liquid side	(mm)	ø6.4			ø9.5			
	Drain port	(nominal dia.)	20 (one side of male screw)						
Sound pressure level*2 (High/Mid/Low)		(dB(A))	46/42/37		49/45/39		51/46/41	54/49/44	

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

Large capacity floor standing type

MMF-AP***3DH-V/H-VA/VB

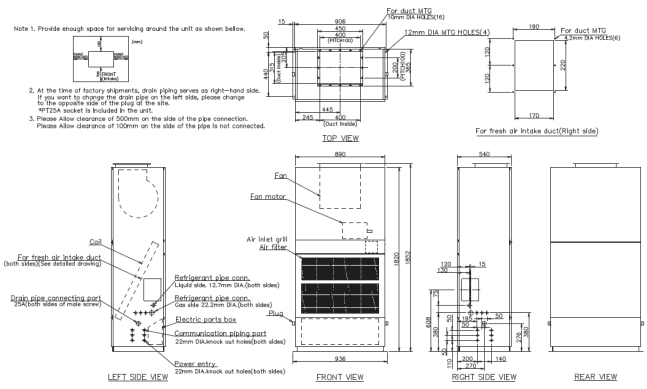
Floor Standing <Duct Type>

(50 Hz/60 Hz)
MMF-AP0723DH-V/MMF-AP0963DH-V
MMF-AP1443DH-V/MMF-AP1923DH-V

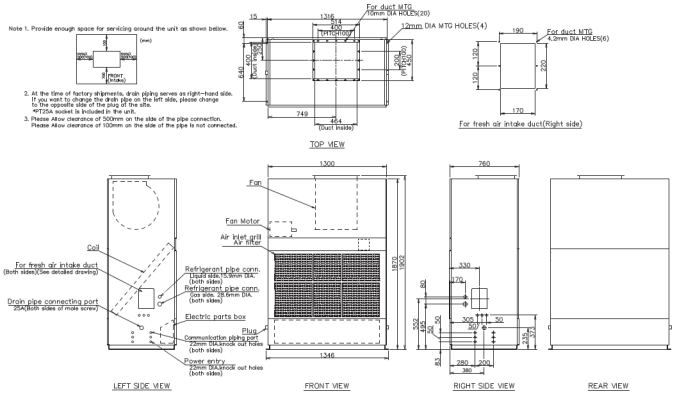
Floor Standing <Direct Type>

(50 Hz)
MMF-AP0723H-VA/MMF-AP0963H-VA
MMF-AP1443H-VA/MMF-AP1923H-VA
(60 Hz)
MMF-AP0723H-VB/MMF-AP0963H-VB
MMF-AP1443H-VB/MMF-AP1923H-VB

MMF-AP0723DH-V/H-VA/VB, AP0963DH-V/H-VA/VB



MMF-AP1443DH-V/H-VA/VB, AP19233DH-V/H-VA/VB



(Unit: mm)

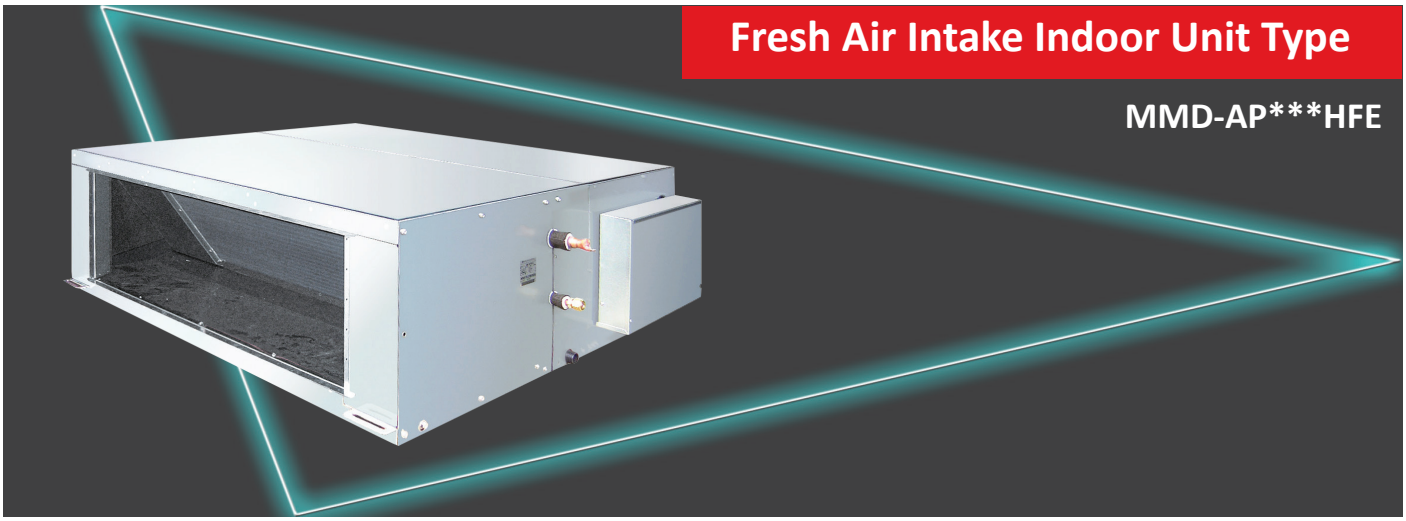
Technical specifications

Model name		MMF-	AP0723DH-V	AP0963DH-V	AP1443DH-V	AP19233DH-V
Cooling/Heating capacity*1		(kW)	22.4/25.0	28.0/31.5	45.0/50.0	56.0/63.0
Electrical characteristics	Power requirements		3 phase 50/60Hz 400V(Separate power supply for indoor units is required.)			
	Power consumption 50 Hz/60 Hz	(kW)	0.59/0.70	0.80/0.99	1.04/1.28	1.79/2.26
External dimensions	Height	(mm)	1820		1870	
	Width	(mm)	890		1300	
	Depth	(mm)	540		760	
Total weight		(kg)	48	49	65	
Fan unit	Standard air flow (High/Mid/Low)	(m^3/h)	900/780/660	1200/1020/840	1920/1680/1380	2160/1860/1560
	Motor output	(W)	37	63	110	160
	External static pressure (50Hz/60Hz)	(Pa)	33/115	29/135	28/111	86/222
Connecting pipe	Gas side	(mm)	ø12.7	ø15.9		
	Liquid side	(mm)	ø6.4	ø9.5		
	Drain port	(nominal dia.)	20 (polyvinyl chloride tube)			
Sound pressure level*2 (High/Mid/Low)		(dB(A))	46/43/38	49/45/40	51/48/44	54/50/46

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

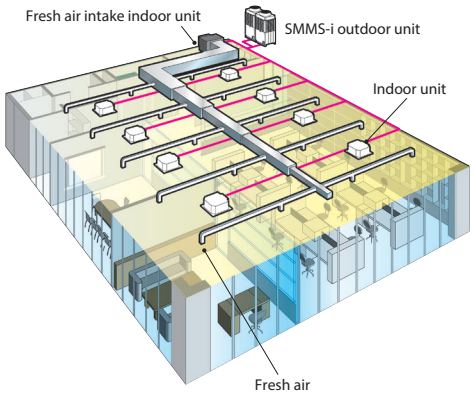


Air controller for fresh-air intake

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 supply			(kW)	1-phase 50 Hz 230 V (220–240 V)/60 Hz 220 V		
	Power consumption			(kW)	0.28/0.34	0.45/0.55	0.52/0.65
External dimensions	Main unit		Height	(mm)	492		
			Width	(mm)	892	1392	
			Depth	(mm)	1262		
Total weight				(kg)	93	144	
Fan unit	Standard air flow			(m^3/h)	1080	1680	2100
	Motor output			(kW)	0.160	0.160×2	
	External static pressure	50 Hz/60 Hz		(Pa)	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		(m^3/h)	756/1188	1176/1848	1470/2310
Connecting pipe	Gas side			(mm)	ø15.9	ø22.2	
	Liquid side			(mm)	ø9.5	ø12.7	
	Drain port			(mm)	25		
Sound pressure level (Note 2) (High/Med./Low)				(dB(A))	45/43/41	46/45/44	
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

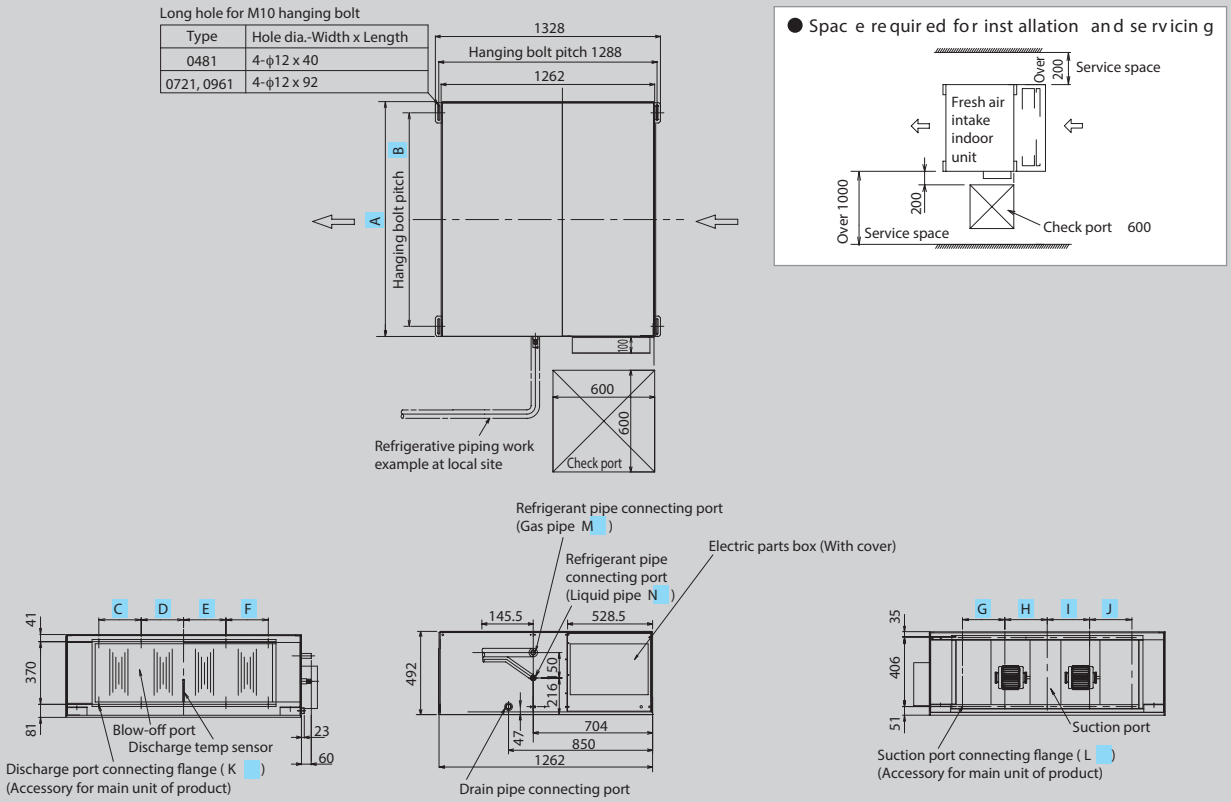
• In COOL mode, if temperature of the fresh air is below the setup temp. of +3°C, FAN status is automatically made. When temperature of the fresh air is below 19°C, FAN status is also made regardless of the setup temperature.

• 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

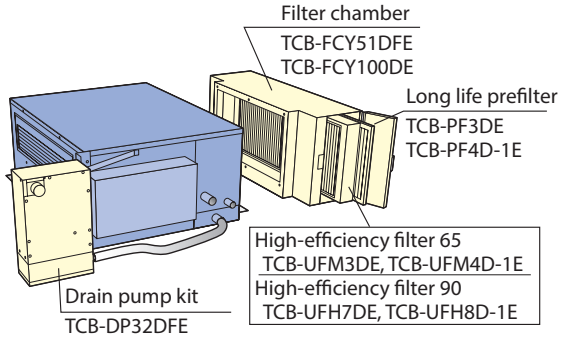
MMD-AP0481HFE to AP0961HFE



(Unit: mm)

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	φ15.9 flare	φ9.5 flare

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.

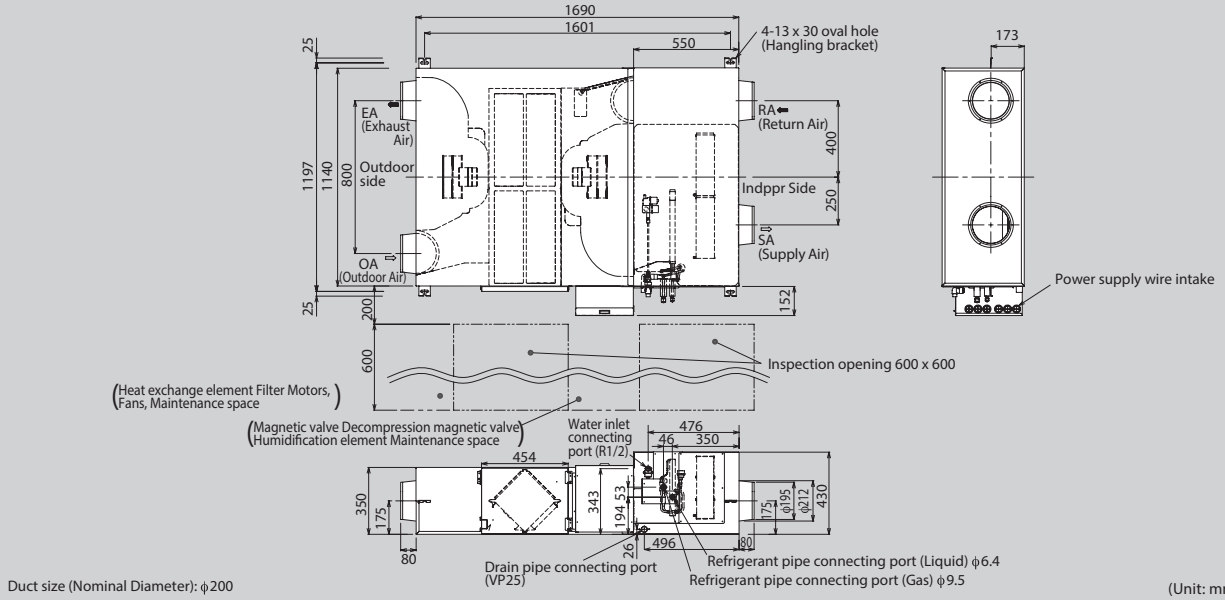
Remote controller
NRC-01HE

Technical specifications

Model name				MMD-	VN502HEXE	VN802HEXE	VN1002HEXE	VN1002HEXE2
Fresh air conditioning load	Cooling (*1)			(kW)	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)	8.25 (2.32)
	Heating (*1)			(kW)	5.53 (2.33)	8.61 (3.61)	10.92(4.32)	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 (220V-240V) (Separate power supply for indoor units is required.)	1-phase 60Hz 220V (Separate power supply for indoor units is 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	68.0
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	55.0
	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	69.0
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	800
	External static pressure	High		(Pa)	120/200	120/190	135	195
		Mid		(Pa)	105/170	100/155	120	160
		Low		(Pa)	115/150	105/130	105	130
Sound pressure 50Hz / 60Hz	High			(dB)	37.5/40.0	41.0/43.0	43.0	43.5
	Mid			(dB)	36.5/38.0	40.0/42.0	42.0	
	Low			(dB)	34.5/36.5	38.0/37.0	40.0	
External Dimensions	Height			(mm)	430			
	Width			(mm)	1140	1189		
	Depth			(mm)	1690	1739		
Total weight				(kg)	84	100	101	103
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.

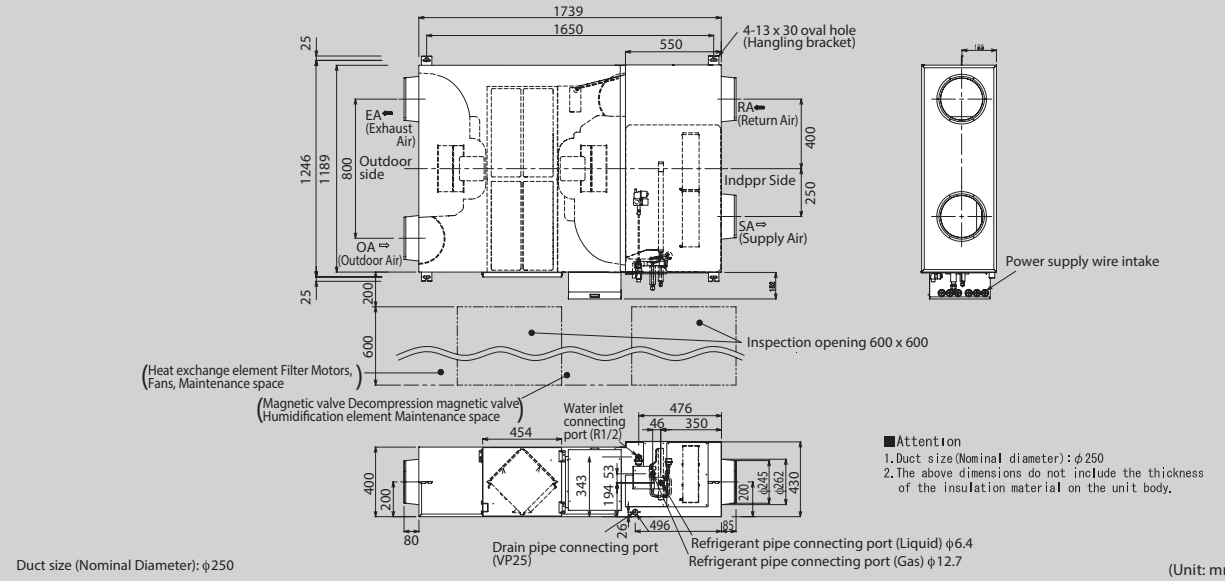
MMD-VN502HEXE



Duct size (Nominal Diameter): ϕ200

(Unit: mm)

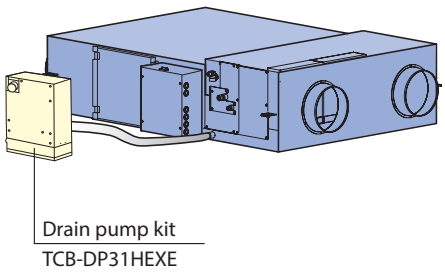
MMD-VN802HEXE to VN1002HEXE/2



Duct size (Nominal Diameter): ϕ250

(Unit: mm)

Options



Drain pump kit
TCB-DP31HEXE

Air-to-Air Heat Exchanger (Stand alone unit)

VN-M***HE

Greater comfort and reduced load

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

Free cooling at night

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

Easy maintenance

The heat exchange element can be washed in water.

Flexible control

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

Remote controller
NRC-01HE

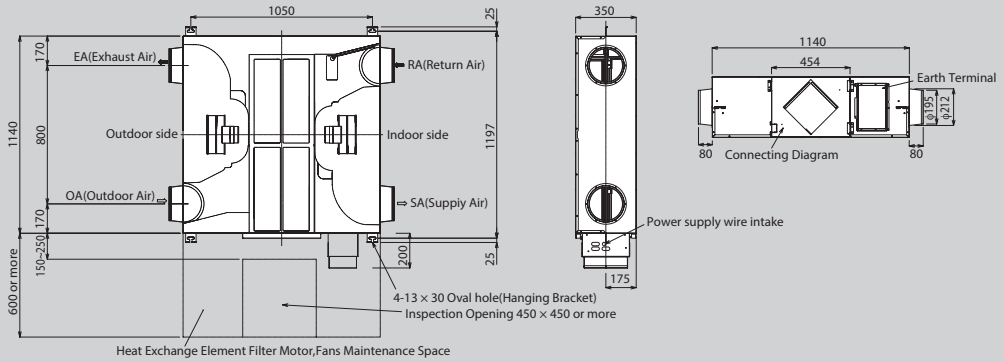
*** Does not connect to refrigerant piping from outdoor unit. Control wires can be connected.**

Technical specifications

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

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

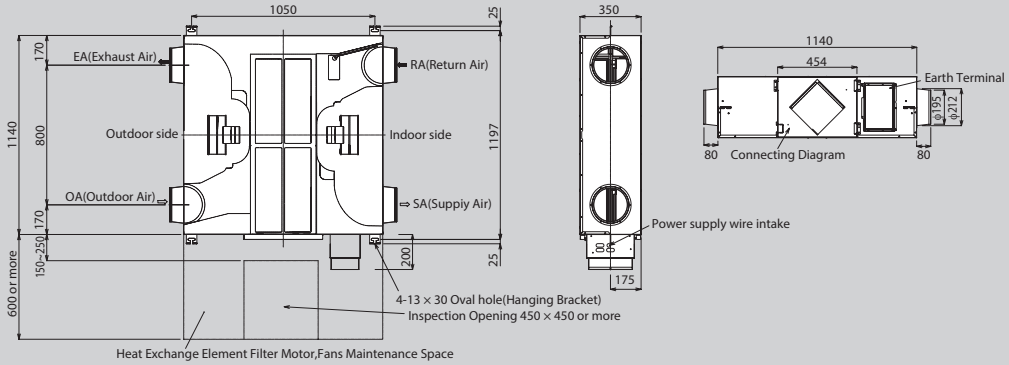
VN-M150HE to VN-M350HE



Duct size (Nominal Diameter): ϕ200

(Unit: mm)

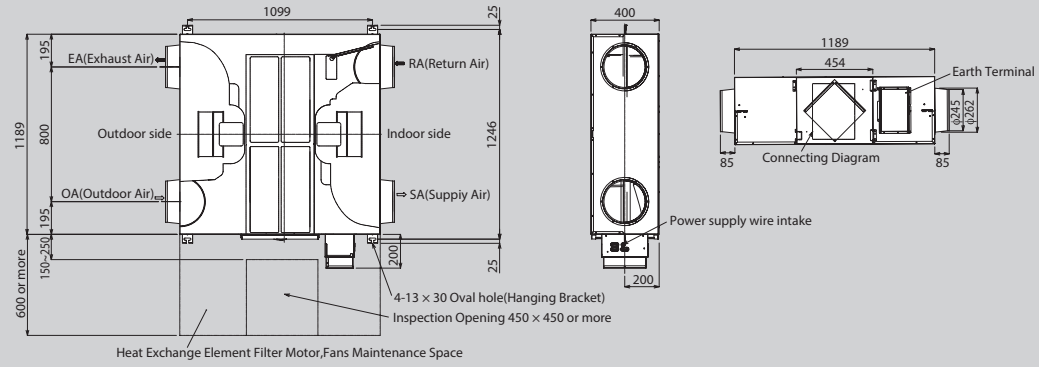
VN-M500HE, VN-M650HE



Duct size (Nominal Diameter): ϕ200

(Unit: mm)

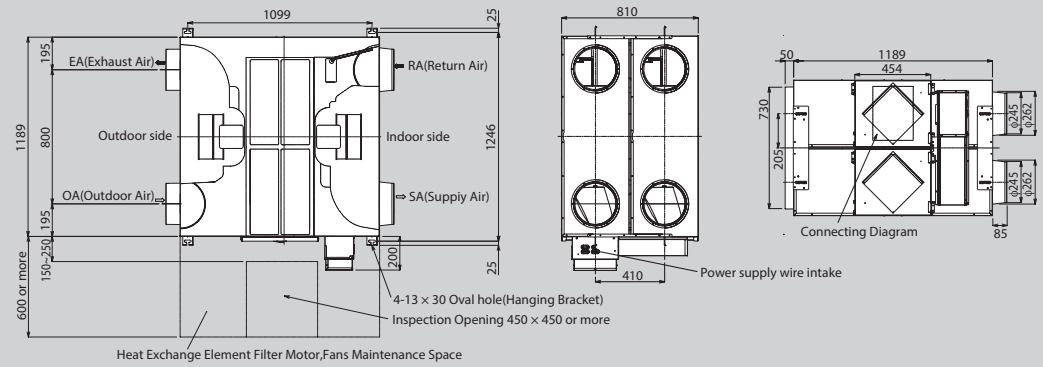
VN-M800HE, VN-M1000HE



Duct size (Nominal Diameter): ϕ250

(Unit: mm)

VN-M1500HE, VN-M2000HE



Duct size (Nominal Diameter): ϕ250

(Unit: mm)

Indoor unit accessories

Indoor unit	Parts Name	Model Name	Applied Model	Notes	Remarks
4-way air discharge cassette type	Ceiling panel	RBC-U31PG(W)-E	MMU-AP***4HP-E	Required accessory	
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)	Use with TCB-GFC1602UE
	Fresh air filter chamber	TCB-GFC1602UE		For fresh air inlet box	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
	Spacer for height	TCB-SP1602UE		Height=50 mm	
	Air discharge direction kit	TCB-BC1602UE		Air direction charge by cutting off air discharge port (3 pcs.)	
Compact 4-way cassette (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		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			
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
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 Colorimentric method)	
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0724/0964H-E	Dust collecting effect: 90%(NBS Colorimentric 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		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		
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 Colorimemtric method)	Use with TCB-PF3DE
		TCB-UFM4D-1E	MMD-AP0481HFE		Use with TCB-PF4D-1E
	High-efficiency filter 90	TCB-UFH7DE	MMD-AP0721/0961HFE	Dust collecting effect: 90% (NBS Colorimemtric method)	Use with TCB-PF3DE
		TCB-UFH8D-1E	MMD-AP0481HFE		Use with TCB-PF4D-1E
	Long life prefilter	TCB-PF3DE	MMD-AP0721/0961HFE	Dust collecting effect: 50% (Weight method)	
		TCB-PF4D-1E	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)	

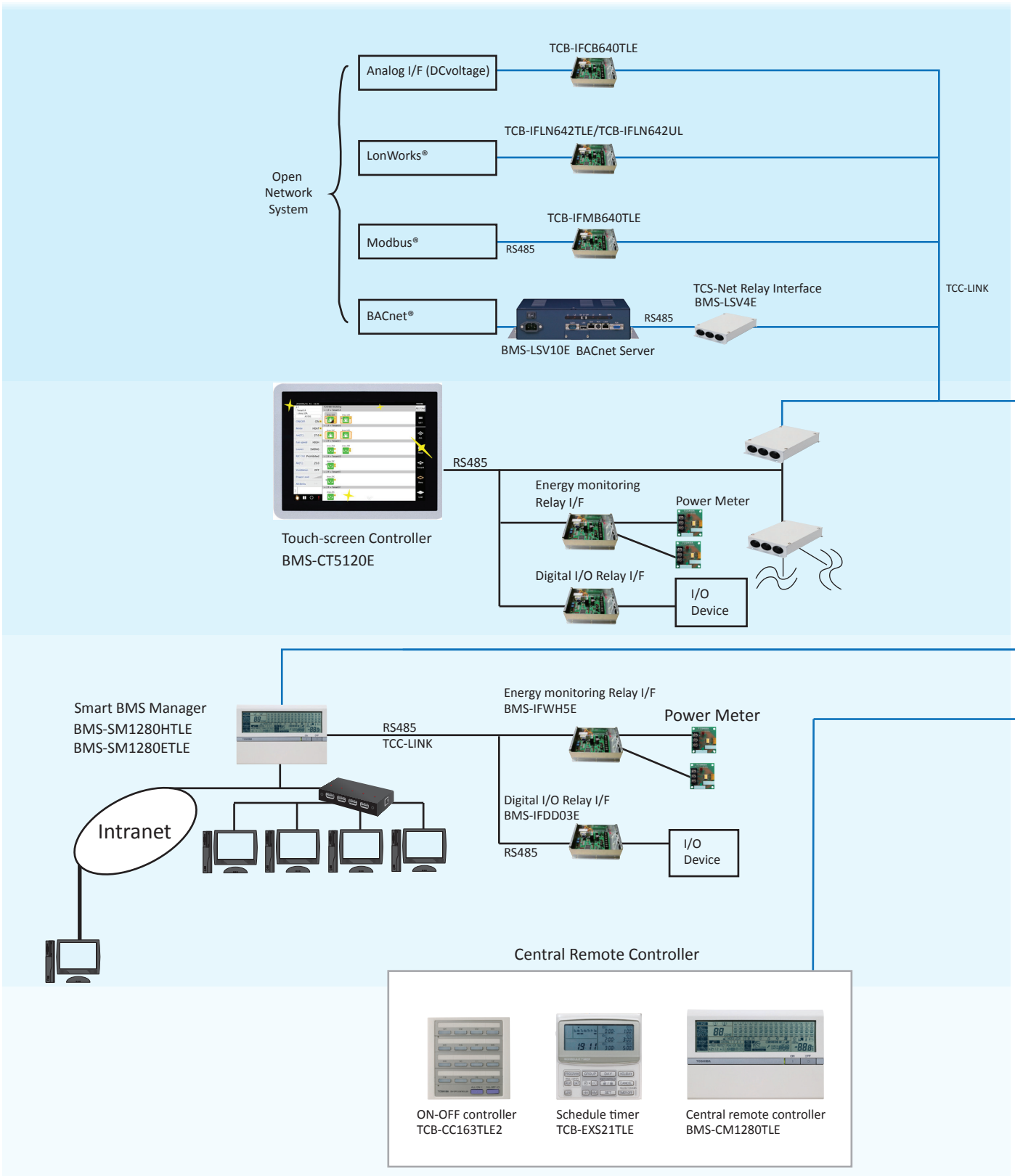
Combination Pattern

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

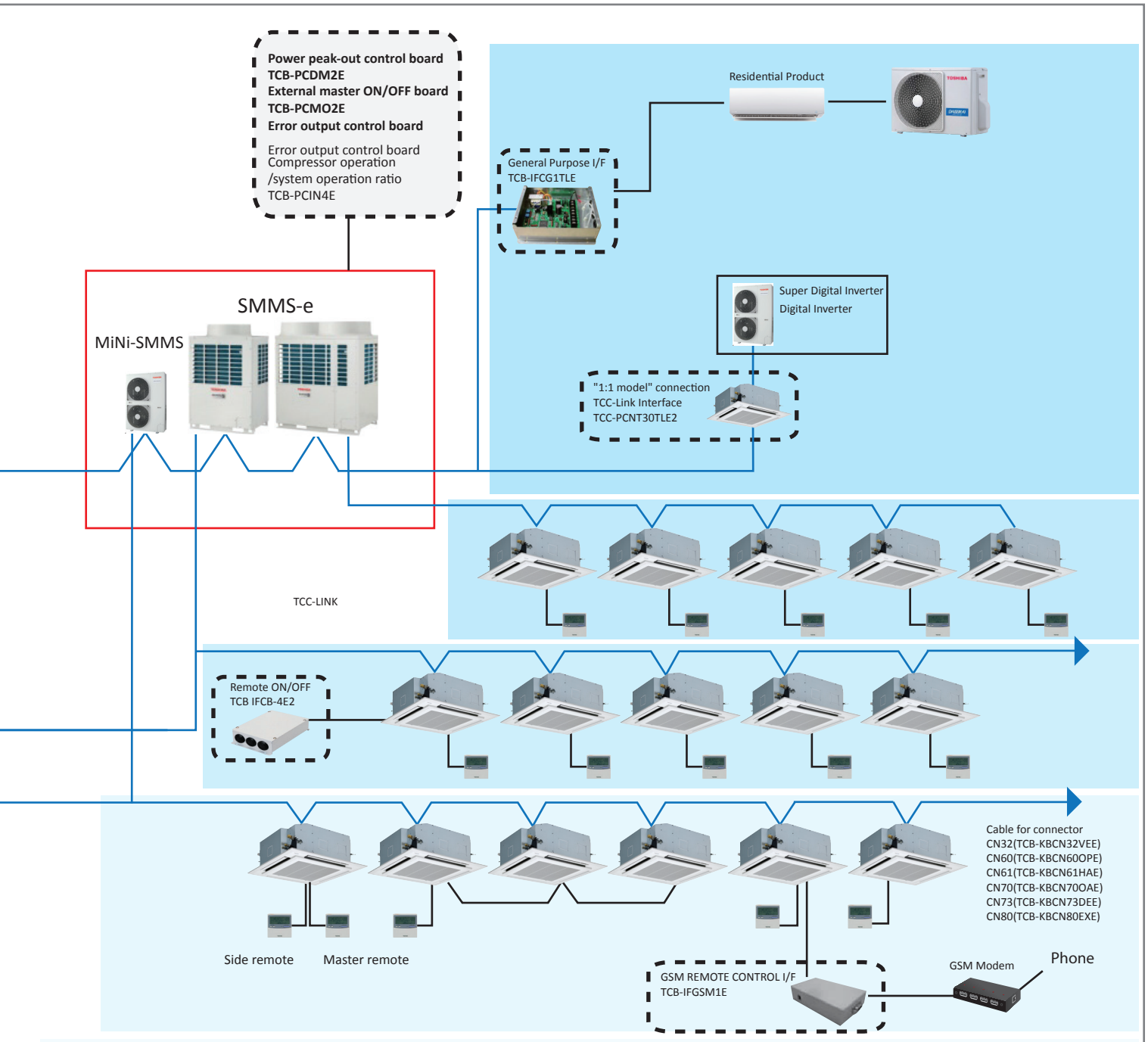
		1	2	3	4	5	6
		Ceiling panel	Fresh air inletbox + Fresh air filter chamber	Fresh air filter chamber	Auxiliary fresh air flange	Spacer for height adjustment	Air discharge direction kit
1	Ceiling panel		OK	OK	OK	OK	OK
2	Fresh air inlet box + Fresh air filter chamber	OK			OK	—	OK
3	Fresh airfilter chamber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

Remote controllers

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.



Wire remote controller/Wireless remote controller

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

Wired remote controller
with Weekly timer
RBC-AMS41E

Wired remote controller
RBC-AMT32(31)E

Simple remote controller
RBC-AS41E2

Wireless remote
controller

Remote Sensor
TCB-TC41LE

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
- Air flow changing
- Timer function
  Either "ON" time or "OFF" time or "CYCLIC" can be set how many 30 min. later ON or OFF is operated.
- Control by 2 remote controllers is available.
  Two wireless remote controllers can operate one indoor unit. The indoor unit can then be operated separately from the two different locations.
- Check code display

*The wireless remote control cannot be connected to concealed duct high static pressure type.

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

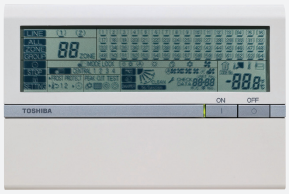
TCB-AX32E2
Stand alone receiver
(For 4-way air discharge cassette, compact 4-way cassette (600 x 600), 2-way air discharge cassette, ceiling, concealed duct standard, slim duct, floor standing cabinet, floor standing, 1-way discharge cassette
(MMU-AP ***4YH-E/SH-E)

RBC-AX32U(W)-E

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

RBC-AX23UW(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.

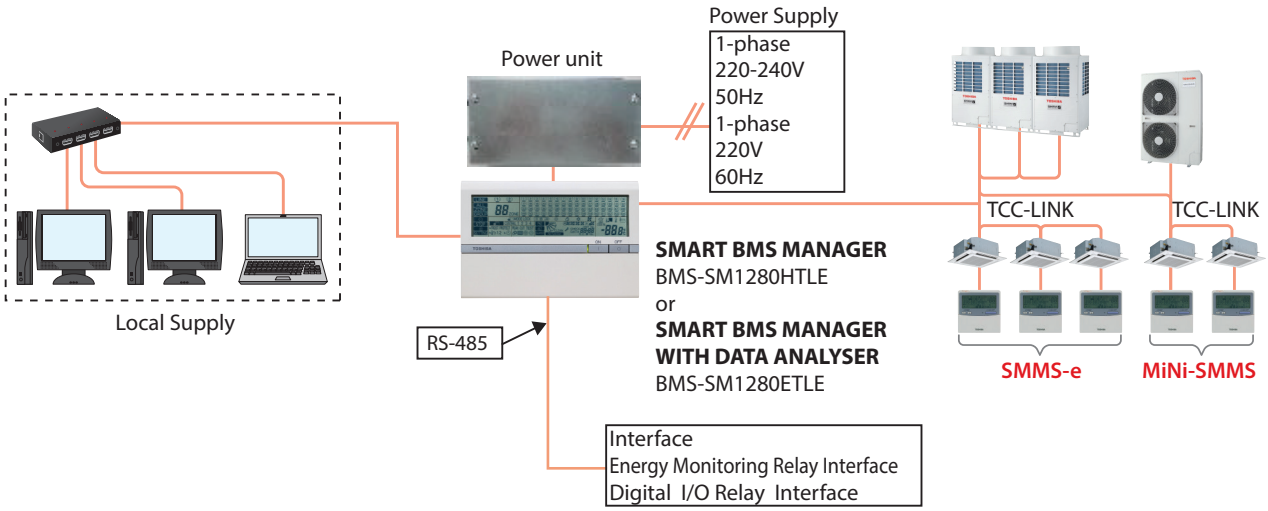
Wired remote controller for air to air heat exchanger

NRC-01HE

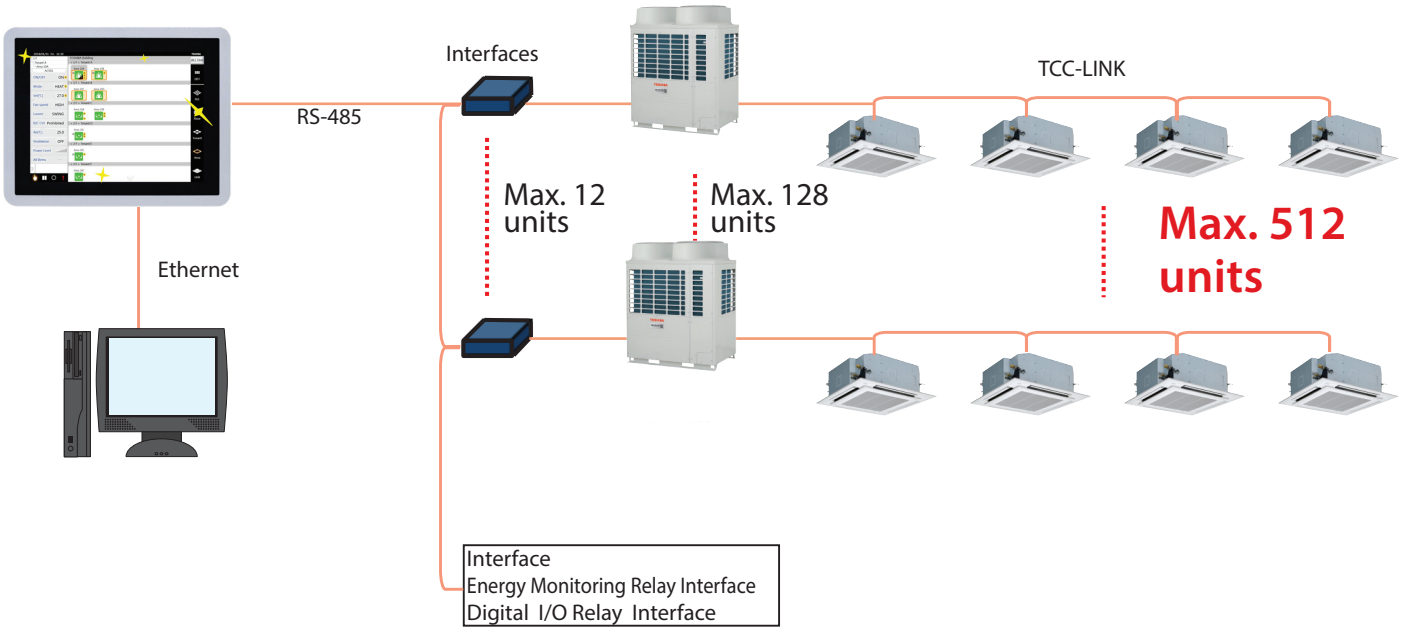
- Up to 8 units of the Air to Air Heat Exchanger can be operated using this remote controller.
- Control by 2 remote controllers is available.
  Two remote controllers can operate a single Air to Air Heat Exchanger.
- Air conditioning units may be controlled in addition to controlling the Air to Air 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)

Building management systems

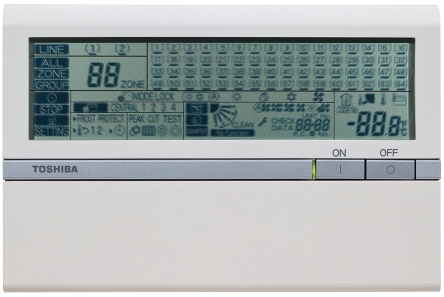
SMART MANAGER / SMART MANAGER WITH DATA ANALYSER



Touch screen controller



TOUCH SCREEN CONTROLLER
BMS-CT5120E



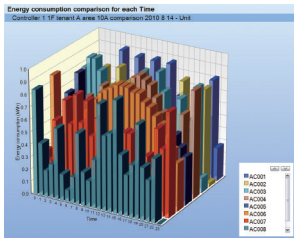
SMART BMS MANAGER
BMS-SM1280HTLE

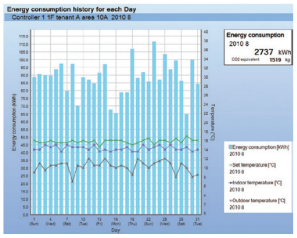
Web browser control software

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

SMART MANAGER WITH DATA ANALYSER
BMS-SM1280ETLE

Energy monitoring display


3D energy view


Daily energy view

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 / groups are controllable.

• Energy monitoring and billing application

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

• Power meter

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

Relay Interface BMS-IFWH5E
For Energy Monitoring

Relay Interface BMS-IFDD03E
For Digital I/O

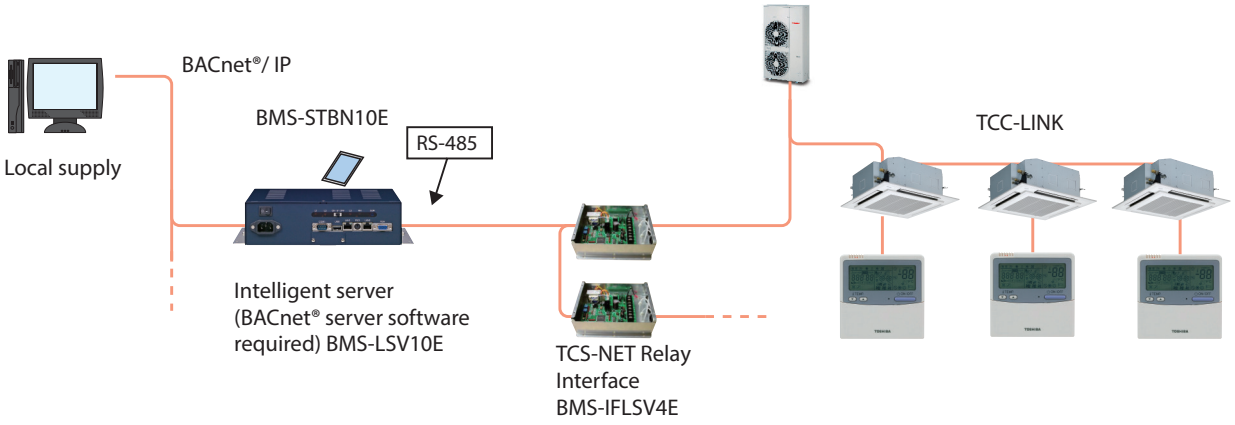
Relay Interface BMS-IFLSV4E
For TCS-NET

FEATURES

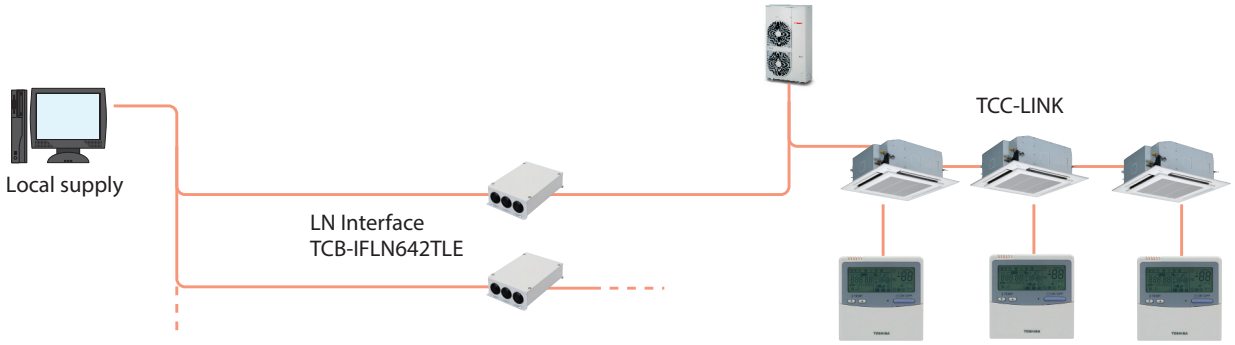
- Icon display
- Return back function
- Save & demand control for outdoor unit
- Ventilation unit control & monitoring
- Setting temp. range control
- Setting temp. shift

Open network systems

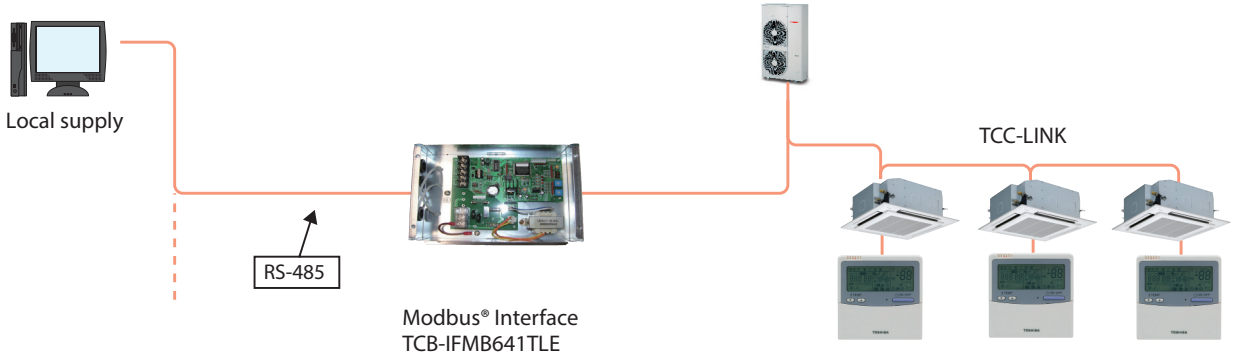
BACnet® system



LonWorks®



Modbus®



Intelligent Server
BMS-LSV10E

• **BACnet®**

The BACnet® system operates in conjunction with the BACnet®.
Server uses object signals to provide the following functions:

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

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

BACnet® Server Software
BMS-STBN10E

Relay Interface BMS-IFLSV4E
For TCS-NET

LN Interface
TCB-IFLN642TLE

• **LonWorks® LN Interface**

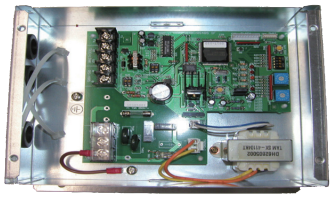
The LonWorks® interface manages the MiNi-SMMS air conditioning system as a Lon device to communicate with the customer's Building Management System and to monitor operational status.
A maximum of 64 units / groups are controllable per interface.

• **SNVT signal**

Signals and provides the following functions:

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

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



Modbus® Interface
TCB-IFMB641TLE

• **Modbus®**

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

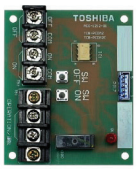
• **Control**
– ON/OFF
– Temperature setting
– Fan speed

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

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

Application controls

TCB-PCDM4E



Size: 71 × 85 (mm)

Power peak-cut control

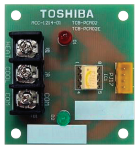
• Feature

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

• Function

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

TCB-PCMO4E



Size: 55.5 × 60 (mm)

Snowfall fan control

• Feature

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

External master ON/OFF control

• Feature

The outdoor unit starts or stops the system.

Night operation (Sound reduction) control

• Feature

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

Operation mode selection control

• Feature

This control can restrict the selectable operation modes.

TCB-PCIN4E

Size: 73 × 79 (mm)

Error/Operation output control

• Feature

Enables external output of error and operation signals.

Compressor operation output

• Feature

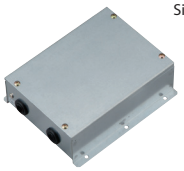
Enables external signal output for each compressor that is in operation within any given outdoor unit. This feature provides a practical method for calculating total operating times for each compressor.

Operating rate output

• Feature

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

TCB-IFCB-4E2

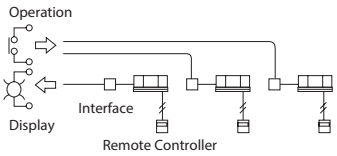


Size: 200 × 170 × 66 (mm)

Remote location ON/OFF control box

• Feature

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

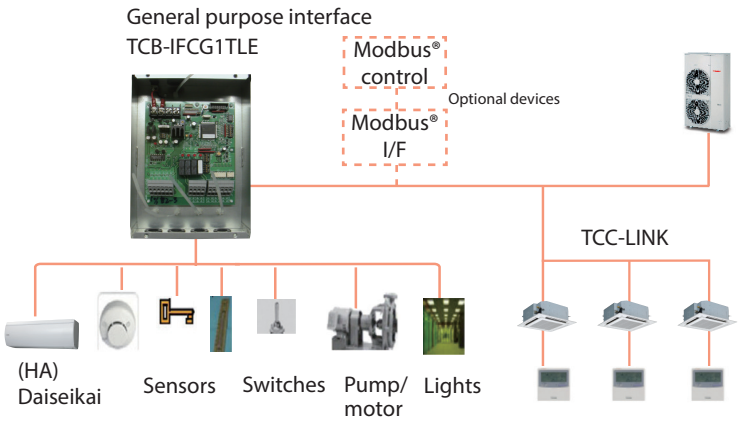


Monitoring

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

Safety precautions

General Purpose Interface



Concept

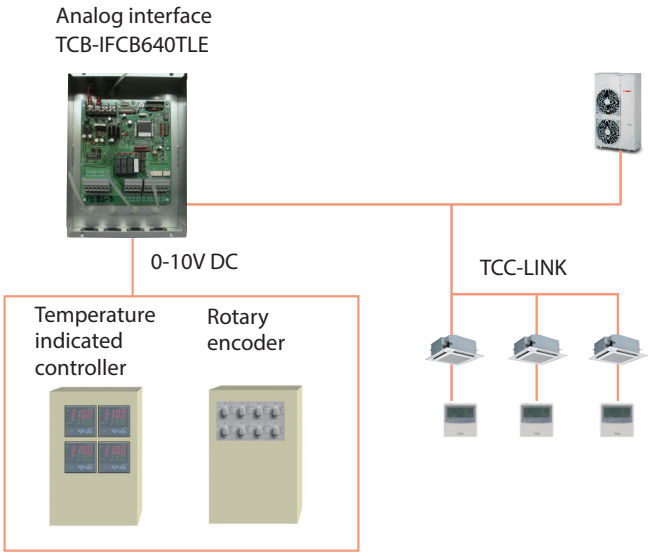
• Controls the operation status of each indoor unit.

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

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

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

Analog Interface



Concept

• Provides access to 64 indoor units.

• Does not require special network knowledge.

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

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

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

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

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

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

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

⚠ SAFETY PRECAUTIONS

For operation:

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

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

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

Precautions for using air conditioners

Concerning the automatic defrosting unit

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

Concerning the air conditioner's operating conditions and their selection

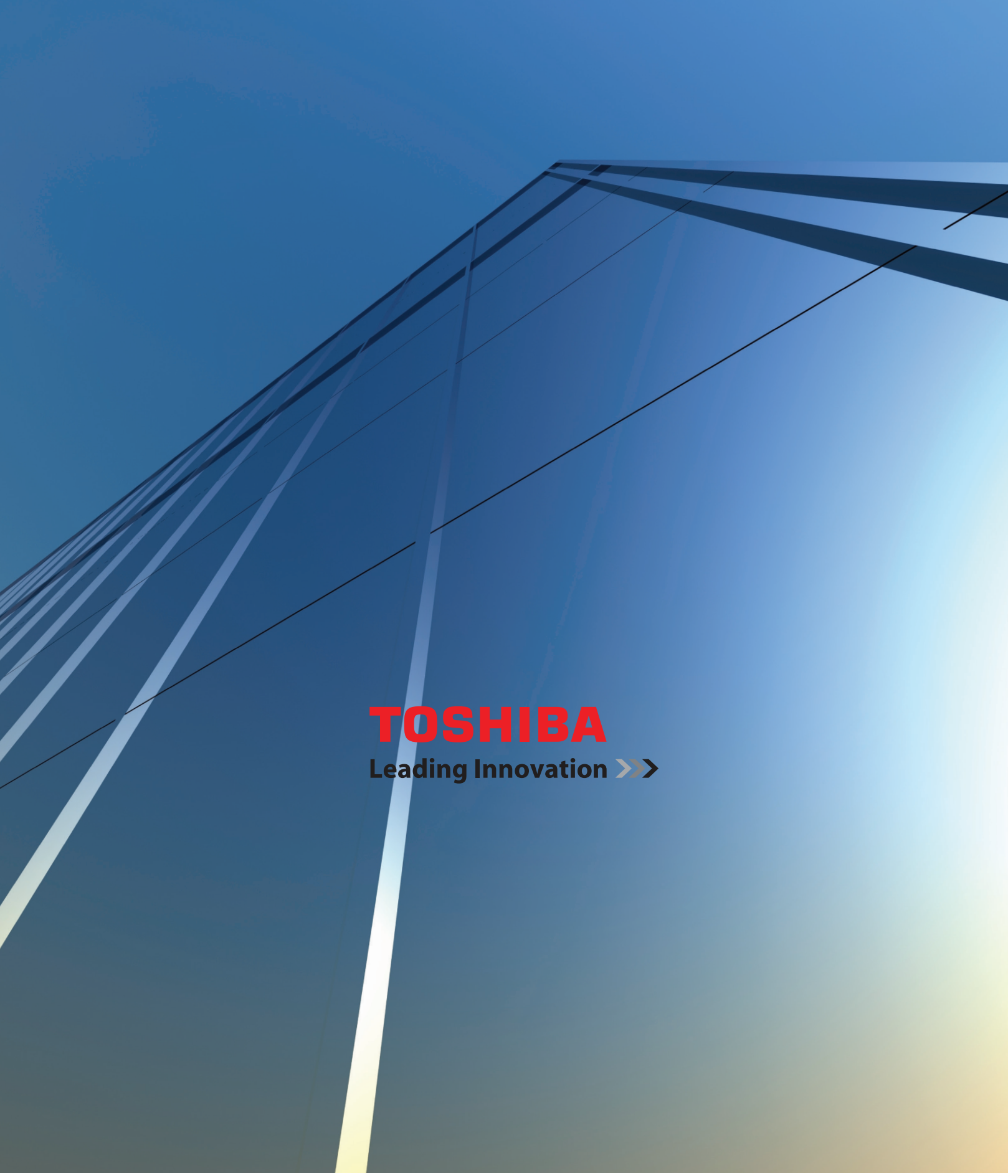
(1) Avoid using the air conditioner in the following locations.
- Locations with acidic or alkaline atmospheres (locations at which highly acidic or alkaline air is directly drawn in, such as in hot springs areas from which sulfur gases are given off, or where chemicals, vinegar, exhaust air from burners,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

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

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

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

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



ISO9001 ISO14001 TIS18001 OHSAS R-410A HFC

Notice : 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.

TOSHIBA CARRIER (THAILAND) CO.,LTD. 144/9 Moo 5, Bangkadi Industrial Park, Tivanon Road,Tambol Bangkadi, Amphur Muang, Pathumthani 12000
T201506C-Asia/LAO