

Introducing SMMS *i* The next-generation '*i*-quality' trio

Dedication to innovation and advanced intelligence fosters the imaginative creativity with which we deliver total value in air conditioning systems.

SMMS
SUPER MODULAR MULTI SYSTEM



Innovation

The new SMMS-i offers innovations in every savings with highly efficient DC twin rotary compressors and advanced vector-controlled inverters boasting COP of 6.41* at 50% partial load.

Notes: *8HP outdoor unit. European model.
Calculated based on JRA4048:2006 specification.



Intelligence

The intelligent VRF ensures precise control over cooling or heating for each individual room, delivering consistent temperature to even the furthest room from the unit.



Imagination

With flexible layout variations beyond imagination, this extremely versatile system can accommodate up to an impressive 235 metres in length and maximum height of 40 metres between indoor units.



Installation made easy

Piping layout flexibility increases design options

Toshiba SMMSi refrigerant distribution and piping design technology, contribute to reach the outstanding distance of 235m between outdoor units and last indoor unit, and the elevation of 40m between indoor units.

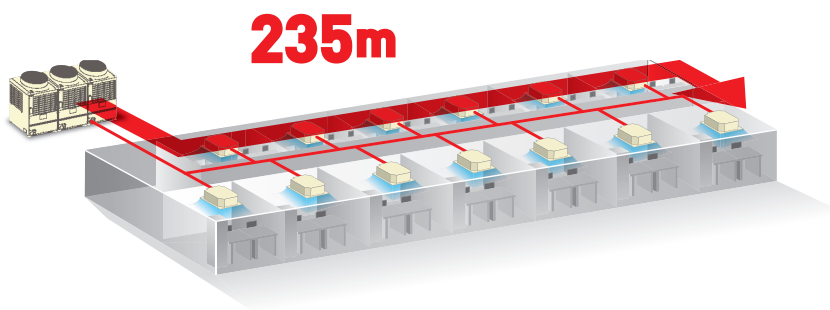
The combination of these two features is a unique advantage for air conditioning layout designers.

They have the freedom to place the indoor units position in building high up to 11 floors.

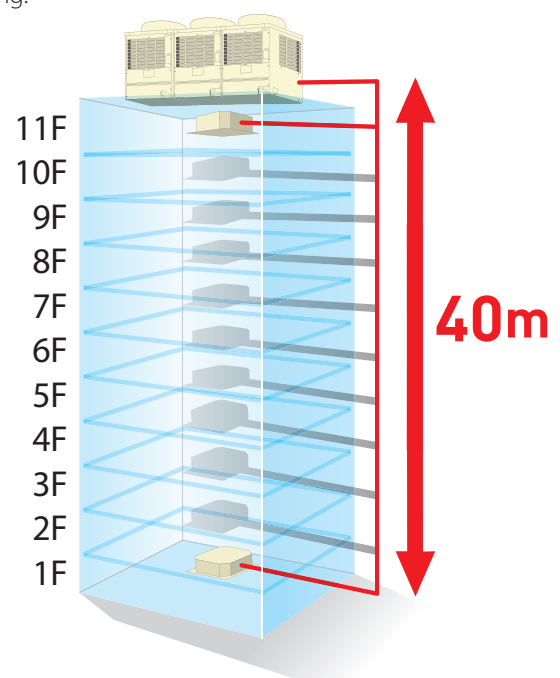
In case of repartitioning or redesign of the internal layouts (offices) this flexibility simplifies the change of the indoor units positions without the need of installing additional outdoor units or move them in a different location.

For specific projects the height may be increased up to 70m if the outdoor unit is positioned at basement level and the indoor units above.

Assuming 3,5 meter of floor height, it is equivalent of a 20 stories building.



Equivalent length

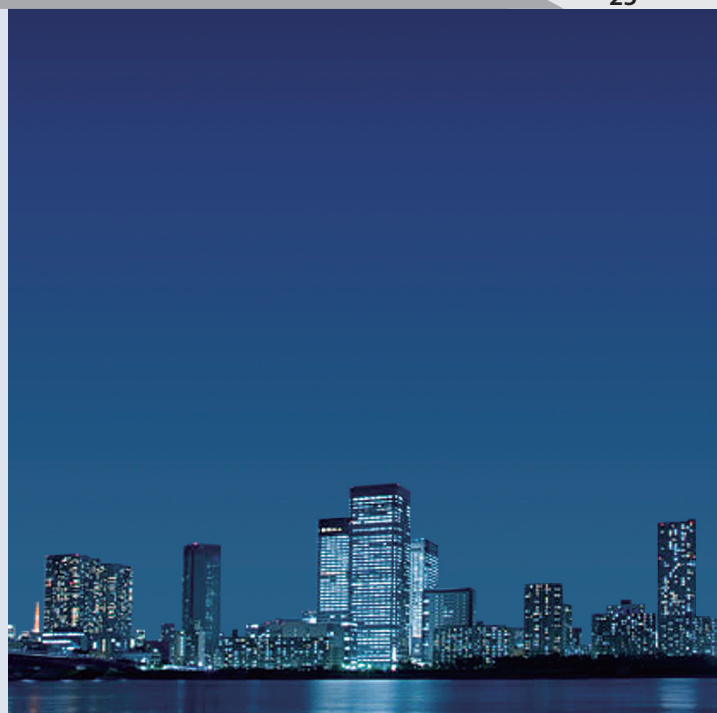


Height difference between outdoor unit and last indoor unit

Inspection window



With this easy to open sliding cover, PCB Inverter can be easily accessed without removing the unit panels. This new feature allows fast access to the inverter board in order to perform maintenance routines, address settings, test run and other operations.

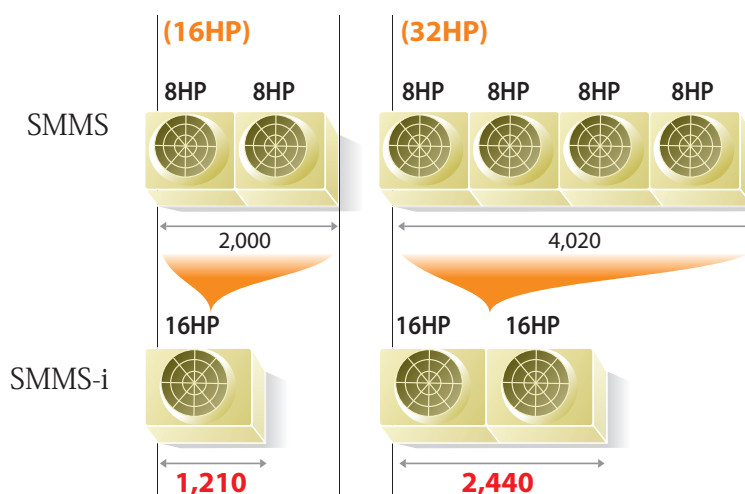


Compact outdoor units size

The introduction of the 16HP single size unit enables the designer of air conditioning plants more freedom in the selection of the necessary installation space.

The overall footprint reduction reaches up to 40%, in units combination. This solution becomes a paramount advantage in those projects or installations where the overall weight is a major concern and a key driver for the unit choice.

40% footprint reduction



A 16HP system installation now occupies only 2/3 the footprint and weight of two units previously required.

Y shaped gas pipe joints

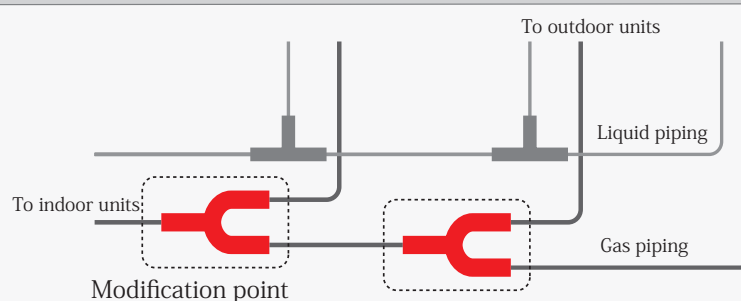
Installation piping layout is made easier with the introduction of the Y-shape pipe design.

As shown in the picture this clever solution reduces the overall spaced needed compared to the standard T-shape joint.



The overall positive effect is a reduced number of bends and consequently a more tidy piping installation.

Y-shape branching joints on the gas lines between SMMS-i outdoor units results in smoother flow to each branch and contributes to the reliability of the system.



Innovation and technology

New intelligent VRF control

Total system control and consistent room-to-room temperature

Toshiba's newly developed intelligent VRF control ensures supply of the right amount of refrigerant to satisfy the demands of each room, regardless of the type of indoor unit used, the length or height differences of the pipes.

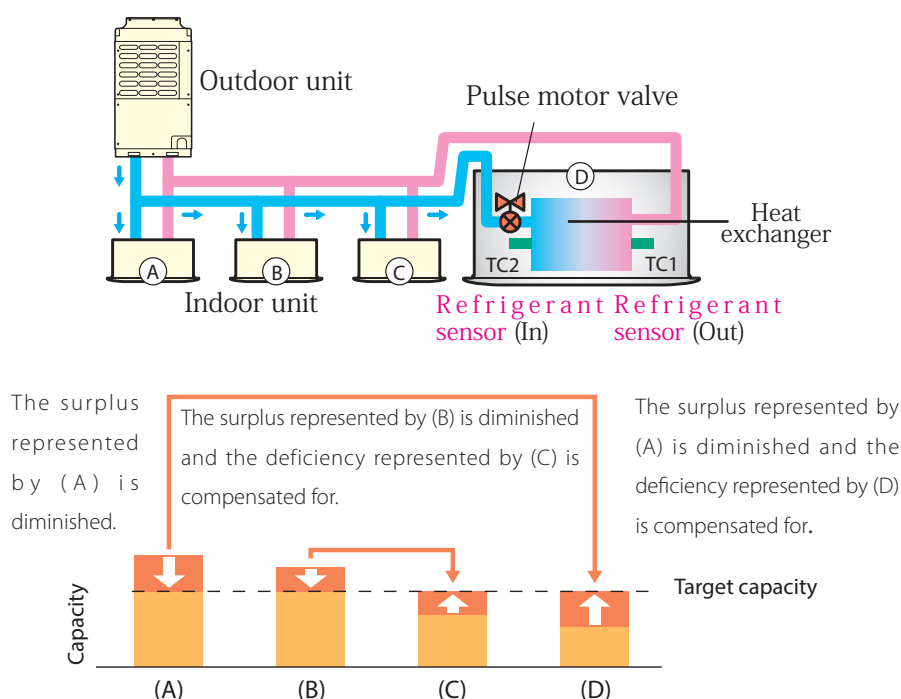
With SMMS-i the refrigerant flow is optimized not only at the level of each fan coil unit but also at total system level.

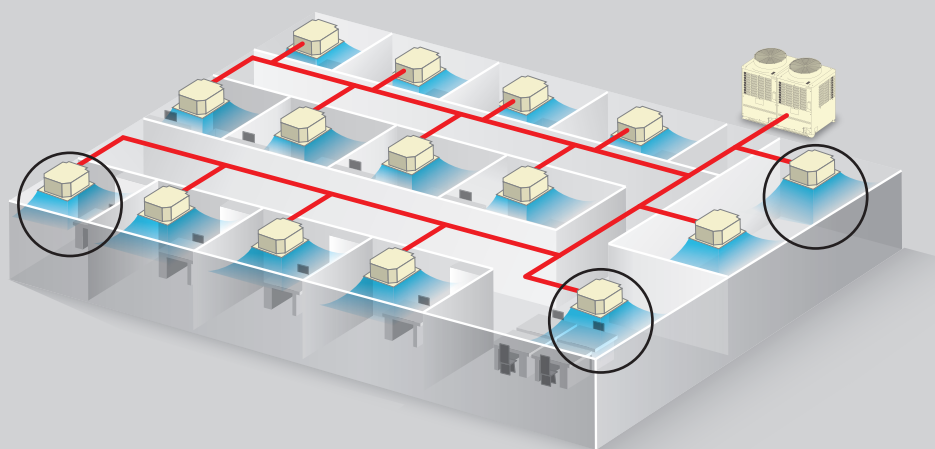
Optimal refrigerant control

When a multiple number of indoor units are connected on a system, an insufficient or excess amount of refrigerant may be supplied to indoor units depending on the difference in length of the connection pipe from the outdoor unit.

This is caused by pressure loss and heat leaks as the refrigerant travels through the pipes, resulting in incorrect amounts of refrigerant being supplied to the indoor units.

Optimal refrigerant flow control featuring intelligent control over the refrigerant sensors and opening rate of individual pulse motor valves realizes stable indoor temperatures throughout a building with height differences of up to 40m between indoor units.

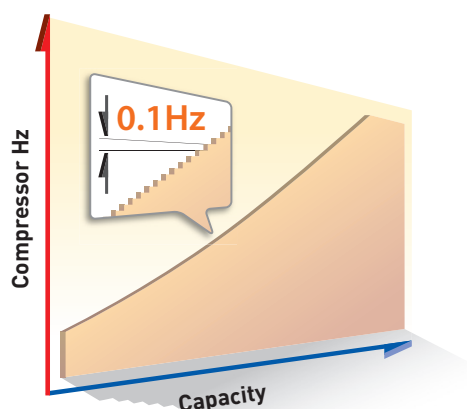




Refrigerant flow is adjusted to maintain consistent individual temperature control



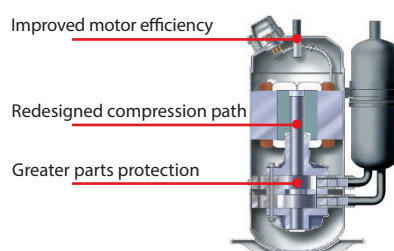
Infinity variable control



Ultra-precise 0.1 Hz control over compressor rotation speed

Infinity variable control adjusts compressor rotation speed in near-seamless 0.1 Hz steps. Responding precisely to the capacity needs of the moment, this fine control minimizes energy loss when changing frequencies, and also creates a comfortable environment subject to minimal temperature variations.

Twin-rotary



Optimization of discharge port positioning and blade thickness reduces the compression loss and friction resistance. Increasing the surface area of the rotor magnets and the addition of slits realize greater efficiency and reduced noise.



Each motor employs a compact and powerful new magnetic rotor and features reduced eddy-current loss.

Powerful Inverter

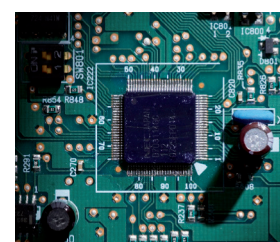
All-inverter compressor control realizes finer control over operation to match the load on the system

Smooth sine curve



The fast-calculating vector-controlled inverter produces a smooth sine curve that improves operating efficiency.

Circuit board



The vector-controlled inverter quickly converts current into a smooth sine curve to achieve smoother operation of the compressor's DC motor.

Performance and reliability

Comfort in all seasons

Either cooling for the warm season or heating for the cold periods of the year the SMMS-i units provide and maintain the right temperature.

These systems are designed to operate even in extreme outdoor conditions. Down to -20°C in heating mode and up to +43°C in cooling mode.

Operating mode	Min	Max
Heating	-20°C	-15°C
Cooling	-5°C	+43°C

Effective air management

Toshiba engineers have focused on the air management in order to improve the amount and speed of the air throw while reducing to the minimum the noise and the sound of the rotating parts.

Innovations include:

- New patented four blades fan propeller with a large diameter (740mm)
- New design of the fan guard
- High power motor drive



Better air management contributes to the achievement of high energy efficiency. It also allows higher standard pressure for applications with condensing units installed indoors (city environments, etc).

Exceptionally low noise levels

Outdoor unit noise is a combination of two factors: the technology and the material adopted for the moving and vibrating parts and the operation speed of the units. A new inverter control for the fan motor enables the unit to reduce its speed down to 60 RPM.

The compressors shield and unit casing were designed in order to maximize the containment of the noise produced by the compressor.

The powerful compressor balance load function and the new heat exchanger design enable the SMMS-i system to operate most of the time at lower capacity load. In this condition the running sound of the units is at its lowest levels.

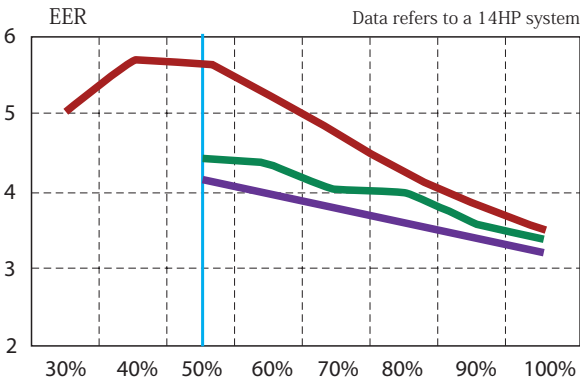


-10dB(A) Sound reduction mode



High performance and savings in part load conditions

COP and EER are calculated at nominal value, when the compressors runs at 100% of their capacity.
This condition of maximum load usually happens only for few days a year, therefore most of the time the units are working at medium/ low speed.
This means that the most efficient system is not the one with the higher capacity in the peak conditions, but the system that performs better in medium low speeds of the compressor (part load conditions).
Toshiba products are widely know in the market for their ability to deliver high capacity and efficiency at partial load condition. In the new SMMS-i system this ability is further increased with the use of three inverter and three newly designed compressors which precisely manage and distribute the load in the system.



- 3 inverter twin rotary compressor
- 1 inverter scroll compressor
- 1 inverter + 2 fixed speed scroll compressor

The graph shows how is effective the SMMS-i compared to other VRF systems. It is important to note that while at full capacity load the efficiency is similar (when the EER and COP are measured) and how effective is at lower capacities, resulting effective even down to 30%: a condition in which other systems cannot operate.

Compressors 1 Inverter 2 fixed speed	Load	Compressors 3 Inverters

In the table are shown the advantages of the 3 inverter compressors. Instead of a single compressor running at high speed, the load is evenly balanced between three compressors. The capacity load is the same but working at lower speeds the energy consumption is lower.

Outdoor unit specifications

Standard model (Single unit)

Technical specifications

Equivalent HP			5HP	6HP	8HP	10HP	12HP	14HP	16HP
Model name	Heat Pump	MMY-	MAP0501HT8 -E	MAP0601HT8 -E	MAP0804HT8P-E	MAP1004HT8P-E	MAP1204HT8P-E	MAP1404HT8P-E	MAP1604HT8P-E
Outdoor unit type			Inverter						
Cooling capacity (*1)		(kW)	14.0	16.0	22.4	28.0	33.5	40.0	45.0
Heating capacity (*1)		(kW)	16.0	18.0	25.0	31.5	37.5	45.0	50.0
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)						
Electrical characteristics (*1)	Cooling	Power consumption (kW)	3.65	4.64	5.40	7.41	9.55	11.50	13.70
		EER (Energy Efficiency Ratio)	3.84	3.45	4.15	3.78	3.51	3.48	3.28
	Heating	Power consumption (kW)	3.84	4.56	5.53	7.50	10.20	11.20	14.20
		COP (Coefficient of Performance)	4.17	3.95	4.52	4.20	3.68	4.02	3.52
External dimensions (Height / Width / Depth)		(mm)	1,800 / 990 / 750	1,800 / 990 / 750	1,830 / 990 / 780	1,830 / 990 / 780	1,830 / 990 / 780	1,830 / 1,210 / 780	1,830 / 1,210 / 780
Total weight	Heat Pump	(kg)	228	228	242	242	242	330	330
Compressor	Motor output	(kW)	1.1 x 2	1.4 x 2	2.3 x 2	3.1 x 2	4.2 x 2	3.0 x 3	3.6 x 3
Fan unit	Motor output	(kW)	0.6	0.6	1.0	1.0	1.0	1.0	1.0
	Air volume	(m³/h)	9,000	9,000	9,900	10,500	11,600	12,000	13,000
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 15.9	ø 19.1	ø 22.2	ø 22.2	ø 28.6	ø 28.6	ø 28.6
		Liquid side (mm)	ø 9.5	ø 9.5	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	ø 9.5	ø 9.5
Sound pressure level (Cooling/Heating)		(dB(A))	55 / 55	56 / 56	55 / 56	57 / 58	59 / 62	60 / 62	62 / 64
Sound power level (Cooling/Heating)		(dB(A))	—	—	77 / 78	78 / 79	82 / 83	82 / 83	83 / 84

Standard model (Combination)

Technical specifications

Equivalent HP			18HP		20HP		22HP		24HP		
Model name	Heat Pump		AP1814HT8P-E		AP2014HT8P-E		AP2214HT8P-E		AP2414HT8P-E		
Outdoor unit type			Inverter								
Outdoor unit model	Heat Pump		1004HT8P-E	0804HT8P-E	1004HT8P-E	1004HT8P-E	1204HT8P-E	1004HT8P-E	1204HT8P-E	1204HT8P-E	
Cooling capacity (*1)			(kW)		50.4		56.0		61.5		
Heating capacity (*1)			(kW)		56.5		63.0		69.0		
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)								
Electrical characteristics (*1)	Cooling	Power consumption (kW)	12.81		14.82		16.96		19.66		
		EER (Energy Efficiency Ratio)	3.93		3.78		3.63		3.46		
	Heating	Power consumption (kW)	13.03		15.00		17.70		21.13		
		COP (Coefficient of Performance)	4.34		4.20		3.90		3.62		
Total weight	Heat Pump		(kg)	242	242	242	242	242	242	242	
Compressor	Motor output		(kW)	3.1 x 2	2.3 x 2	3.1 x 2	3.1 x 2	4.2 x 2	3.1 x 2	4.2 x 2	
Fan unit	Motor output		(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume		(m³/h)	10,500	9,900	10,500	10,500	11,600	10,500	11,600	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 28.6		ø 28.6		ø 34.9		ø 34.9		
		Liquid side (mm)	ø 15.9		ø 15.9		ø 19.1		ø 19.1		
		Balance pipe (mm)	ø 9.5		ø 9.5		ø 9.5		ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))	59.5 / 60.5		60.0 / 61.0		61.5 / 63.5		62.0 / 65.0	

Standard model (Combination)

Technical specifications

Equivalent HP			26HP		28HP		30HP	
Model name	Heat Pump MMY-		AP2614HT8P-E		AP2814HT8P-E		AP3014HT8P E	
Outdoor unit type			Inverter					
Outdoor unit model	Heat Pump MMY-MAP		1604HT8P-E	1004HT8P-E	1604HT8P-E	1204HT8P-E	1604HT8P-E	1404HT8P-E
Cooling capacity (*1)			(kW) 73.0		78.5		85.0	
Heating capacity (*1)			(kW) 81.5		88.0		95.0	
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)					
Electrical characteristics (*1)	Cooling	Power consumption (kW)	21.11		23.25		25.20	
		EER (Energy Efficiency Ratio)	3.46		3.38		3.37	
	Heating	Power consumption (kW)	21.70		24.65		25.40	
		COP (Coefficient of Performance)	3.76		3.57		3.74	
Total weight	Heat Pump (kg)		330	242	330	242	330	330
Compressor	Motor output (kW)		3.6 x 3	3.1 x 2	3.6 x 3	4.2 x 2	3.6 x 3	3.0 x 3
Fan unit	Motor output (kW)		1.0	1.0	1.0	1.0	1.0	1.0
	Air volume (m³/h)		13,000	11,500	13,000	11,600	13,000	12,000
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)) 63.5 / 65.0		64 / 66.5		64.5 / 66.5	

Outdoor unit specifications

Standard model (Combination)			Technical specifications							
Equivalent HP			32HP		34HP			36HP		
Model name	Heat Pump MMY-		AP3214HT8P-E		AP3414HT8P-E			AP3614HT8P-E		
Outdoor unit type			Inverter							
Outdoor unit model	Heat Pump MMY-MAP		1604HT8P-E	1604HT8P-E	1204HT8P-E	1204HT8P-E	1004HT8P-E	1204HT8P-E	1204HT8P-E	1204HT8P-E
Cooling capacity (*1)			(kW)		90.0			101.0		
Heating capacity (*1)			(kW)		100.0			113.0		
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Power consumption (kW)	27.40		27.06			28.93		
		EER (Energy Efficiency Ratio)	3.28		3.55			3.49		
	Heating	Power consumption (kW)	28.40		28.60			30.84		
		COP (Coefficient of Performance)	3.52		3.78			3.66		
Total weight	Heat Pump (kg)		330	330	242	242	242	242	242	242
Compressor	Motor output (kW)		3.6 x 3	3.6 x 3	4.2 x 2	4.2 x 2	3.1 x 2	4.2 x 2	4.2 x 2	4.2 x 2
Fan unit	Motor output (kW)		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume (m³/h)		13,000	13,000	11,600	11,600	10,500	11,600	11,600	11,600
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 34.9		ø 34.9			ø 41.3		
		Liquid side (mm)	ø 19.1		ø 19.1			ø 22.2		
		Balance pipe (mm)	ø 9.5		ø 9.5			ø 9.5		
Sound pressure level (Cooling/Heating)			(dB(A))		65.0 / 67.0			63.5 / 66.0		
								64.0 / 67.0		

Standard model (Combination)			Technical specifications								
Equivalent HP			38HP			40HP			42HP		
Model name	Heat Pump MMY-		AP3814HT8P-E			AP4014HT8P-E			AP4214HT8P-E		
Outdoor unit type			Inverter								
Outdoor unit model	Heat Pump MMY-MAP		1604HT8P-E	1204HT8P-E	1004HT8P-E	1604HT8P-E	1204HT8P-E	1204HT8P-E	1604HT8P-E	1404HT8P-E	1204HT8P-E
Cooling capacity (*1)			(kW)			106.5			112.0		
Heating capacity (*1)			(kW)			119.5			127.0		
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)								
Electrical characteristics (*1)	Cooling	Power consumption (kW)	30.66			32.80			34.47		
		EER (Energy Efficiency Ratio)	3.47			3.41			3.42		
	Heating	Power consumption (kW)	32.14			35.29			35.46		
		COP (Coefficient of Performance)	3.72			3.60			3.72		
Total weight	Heat Pump (kg)		330	242	242	330	242	242	330	330	242
Compressor	Motor output (kW)		3.6 x 3	4.2 x 2	3.1 x 2	3.6 x 3	4.2 x 2	4.2 x 2	3.6 x 3	3.0 x 3	4.2 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 (m³/h)		13,000	11,600	10,500	13,000	11,600	11,600	13,000	12,000	11,600
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))			65.0 / 67.0			65.0 / 67.5			65.5 / 67.5		

Standard model (Combination)			Technical specifications								
Equivalent HP			44HP			46HP			48HP		
Model name	Heat Pump MMY-		AP4414HT8P-E			AP4614HT8P-E			AP4814HT8P-E		
Outdoor unit type			Inverter								
Outdoor unit model	Heat Pump MMY-MAP		1604HT8P-E	1604HT8P-E	1204HT8P-E	1604HT8P-E	1604HT8P-E	1404HT8P-E	1604HT8P-E	1604HT8P-E	1604HT8P-E
Cooling capacity (*1)			(kW)			123.5			130.0		
Heating capacity (*1)			(kW)			138.0			145.0		
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)								
Electrical characteristics (*1)	Cooling	Power consumption (kW)	36.95			38.90			41.10		
		EER (Energy Efficiency Ratio)	3.34			3.34			3.28		
	Heating	Power consumption (kW)	38.85			39.60			42.60		
		COP (Coefficient of Performance)	3.55			3.66			3.52		
Total weight	Heat Pump (kg)		330	330	242	330	330	330	330	330	330
Compressor	Motor output (kW)		3.6 x 3	3.6 x 3	4.2 x 2	3.6 x 3	3.6 x 3	3.0 x 3	3.6 x 3	3.6 x 3	3.6 x 3
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 (m³/h)		13,000	13,000	11,600	13,000	13,000	12,000	13,000	13,000	13,000
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))			66.0 / 68.5			66.5 / 68.5			67.0 / 69.0		

*1 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.

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

Outdoor unit specifications

High efficiency model (Combination)

Technical specifications

Equivalent HP			38HP				40HP			
Model name	Heat Pump	MMY-	AP3824HT8P-E				AP4024HT8P-E			
Outdoor unit type			Inverter							
Outdoor unit model	Heat Pump	MMY-MAP	1004HT8P-E	1004HT8P-E	1004HT8P-E	0804HT8P-E	1004HT8P-E	1004HT8P-E	1004HT8P-E	1004HT8P-E
Cooling capacity (*1)		(kW)	106.5				112.0			
Heating capacity (*1)		(kW)	119.5				127.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Power consumption (kW)	27.68				29.64			
		EER (Energy Efficiency Ratio)	3.85				3.78			
	Heating	Power consumption (kW)	28.03				30.42			
		COP (Coefficient of Performance)	4.26				4.17			
Total weight	Heat Pump	(kg)	242	242	242	242	242	242	242	242
Compressor	Motor output	(kW)	3.1 x 2	3.1 x 2	3.1 x 2	2.3 x 2	3.1 x 2	3.1 x 2	3.1 x 2	3.1 x 2
Fan unit	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume	(m³/h)	10,500	10,500	10,500	9,900	10,500	10,500	10,500	10,500
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))	63.0 / 64.0				63.0 / 64.0			

High efficiency model (Combination)

Technical specifications

Equivalent HP			42HP				44HP			
Model name	Heat Pump	MMY-	AP4224HT8P-E				AP4424HT8P-E			
Outdoor unit type			Inverter							
Outdoor unit model	Heat Pump	MMY-MAP	1204HT8P-E	1004HT8P-E	1004HT8P-E	1004HT8P-E	1204HT8P-E	1204HT8P-E	1004HT8P-E	1004HT8P-E
Cooling capacity (*1)		(kW)	118.0				123.5			
Heating capacity (*1)		(kW)	132.0				138.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Power consumption (kW)	32.04				34.19			
		EER (Energy Efficiency Ratio)	3.68				3.61			
	Heating	Power consumption (kW)	32.70				35.40			
		COP (Coefficient of Performance)	4.04				3.90			
Total weight	Heat Pump	(kg)	242	242	242	242	242	242	242	242
Compressor	Motor output	(kW)	4.2 x 2	3.1 x 2	3.1 x 2	3.1 x 2	4.2 x 2	4.2 x 2	3.1 x 2	3.1 x 2
Fan unit	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume	(m³/h)	11,600	10,500	10,500	10,500	11,600	11,600	10,500	10,500
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))	64.0 / 65.5				64.5 / 66.5			

High efficiency model (Combination)

Technical specifications

Equivalent HP			46HP				48HP			
Model name	Heat Pump	MMY-	AP4624HT8P-E				AP4824HT8P-E			
Outdoor unit type			Inverter							
Outdoor unit model	Heat Pump	MMY-MAP	1204HT8P-E	1204HT8P-E	1204HT8P-E	1004HT8P-E	1204HT8P-E	1204HT8P-E	1204HT8P-E	1204HT8P-E
Cooling capacity (*1)		(kW)	130.0				135.0			
Heating capacity (*1)		(kW)	145.0				150.0			
Power supply (*2)			3phase 4wires 50Hz 400V (380-415V)							
Electrical characteristics (*1)	Cooling	Power consumption (kW)	36.88				38.76			
		EER (Energy Efficiency Ratio)	3.52				3.48			
	Heating	Power consumption (kW)	38.57				40.80			
		COP (Coefficient of Performance)	3.76				3.68			
Total weight	Heat Pump	(kg)	242	242	242	242	242	242	242	242
Compressor	Motor output	(kW)	4.2 x 2	4.2 x 2	4.2 x 2	3.1 x 2	4.2 x 2	4.2 x 2	4.2 x 2	4.2 x 2
Fan unit	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Air volume	(m³/h)	11,600	11,600	11,600	10,500	11,600	11,600	11,600	11,600
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))	65.0 / 67.5				65.0 / 68.0			

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