

TOSHIBA
Leading Innovation >>>

SMMS 7
SUPER MODULAR MULTI SYSTEM

SMMS - 7 the senses of cooling



**THE SUPERIOR COOLING
WITHOUT COMPROMISE**
— Air Conditioning for large building —

 **Better Air Solutions**

TOSHIBA
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TOSHIBA
SMMS 7

TOTALINE

March, 2018



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**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

INDEX

Introduction	
Toshiba Air Conditioning vision	2
7 Senses of smartness	3
7 Smart features	4
Product line up	5
7 Smart features	
Space saving and light weight	7
Wider ambient operation	8
Environmentally- oriented	8
High reliability	9
Design flexibility	11
Easy installation and maintenance	13
Outdoor units	
Outdoor units line-up	19
Outdoor units specifications	21
Outdoor units external view drawings	29
Indoor units	
Indoor units line-up for SMMS-7	33
4-way air discharge cassette type	35
Compact 4-way cassette type	37
2-way air discharge cassette type	39
1-way air discharge cassette type	41
Slim duct type	43
Concealed duct high static pressure type	45
Concealed duct type	47
Ceiling type	49
High-wall type (series 6)	51
Console type	52
Floor standing cabinet type	53
Floor standing concealed type	54
Floor standing type	55
Large capacity floor standing duct type	56
Large capacity floor standing direct type	58
Fresh air intake indoor unit type	59
Air-to-Air heat exchanger with DX-coil	61
Air-to-Air heat exchanger (stand alone unit)	63
Indoor unit accessories for SMMS-7	65
Remote controllers	67
Building management systems	71
Open network systems	73
Application controls	75
Safety precautions	78

TOSHIBA AIR CONDITIONING VISION



Better Air Solutions

Through our commitment to world-class efficiency, versatile scalability and leading quality, Toshiba Air Conditioning advances leading-edge technologies to find the most forward-thinking solutions possible for your world.



7 Senses of smartness

Because we understand your real needs, we researched and finally found 7 senses of smartness in air conditioning, which we have innovatively developed into the most advanced technologies SMMS-7. This VRF is cooling optimized for hot and humid temperature.

»»» Sense of efficiency
Higher energy efficiency

»»» Sense of care
Environmentally oriented

»»» Sense of space
Space saving and light weight

»»» Sense of convenience
Easy installation and maintenance

»»» Sense of flexibility
Design flexibility

»»» Sense of strength
High reliability

»»» Sense of endurance
Wider ambient operation



SMMS-7 the senses of cooling



SMMS-7 the senses of cooling

PRODUCT LINE UP

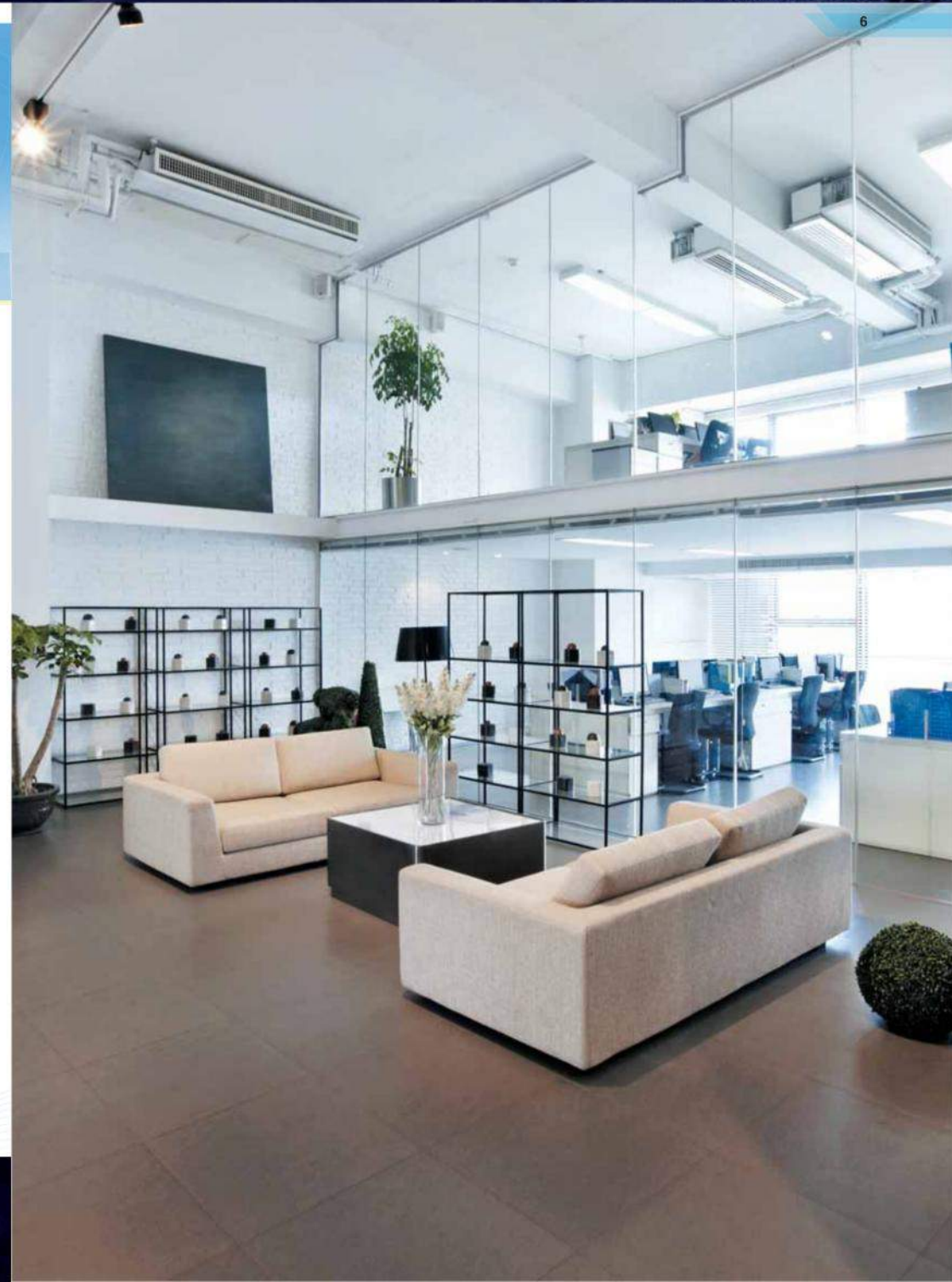


Standard model

Equivalent HP	8HP	10HP	12HP	14HP	14HP*	16HP	18HP	20HP	22HP*	24HP*
Appearance										
External dimensions (H x W x D)	1,800 x 990 x 780mm			1,800 x 1,210 x 780mm			1,800 x 1,600 x 780mm			
Refrigerant type	R410A									

*Medium Chassis Variant
*Non-Modular

Product line up



>>> Sense of space

Space saving and light weight

◀ 20 HP Model



◀ 24 HP Model



◀ 60 HP Combination model

The new compact design not only reduces the installation foot print, but also reduces the time to deliver and install.

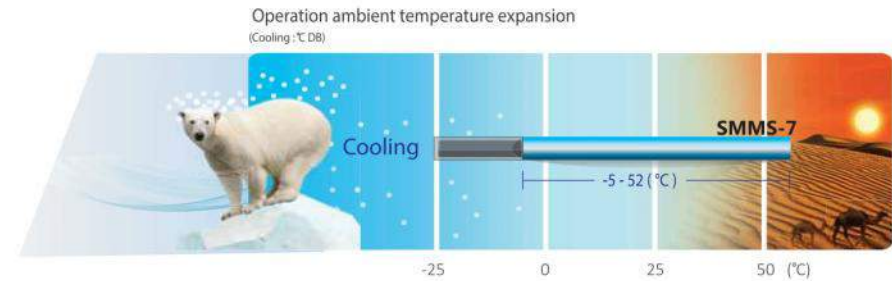


>>> Sense of endurance

Wider ambient operation

◀ Outdoor temperature range

The combination of new compressor design and system controls have enabled SMMS-7 to expand its allowable operational temperature range.



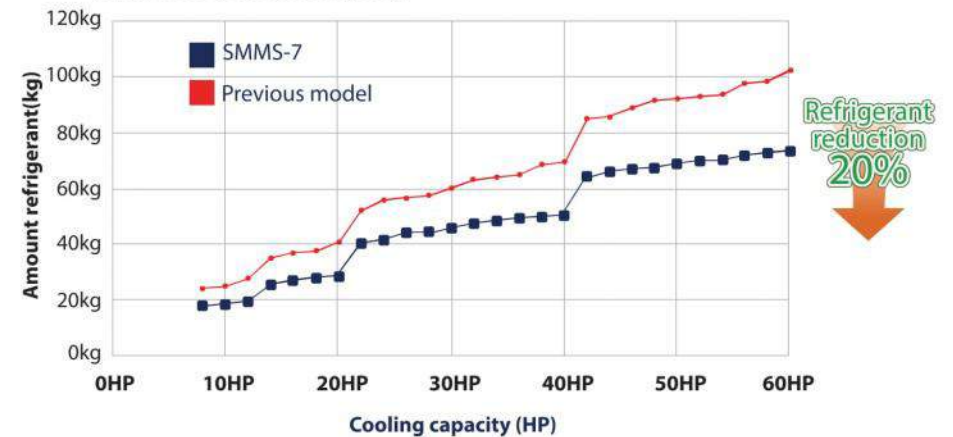
Note: Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

>>> Sense of care

Environmentally oriented

◀ Reduce refrigerant amount

More than 20% by delicated cooling design*



* Testing under controlled conditions.

>>> Sense of strength
High reliability

◀ Small animal protection

To prevent the small animals from entering and interfering with the electronic components in the system, our new inverter box has been upgraded with additional protection, while allowing reliable operation. The inverter box is fitted with punched sheet metal & resin sheet.



In order to stop small animals getting into the inverter box, SMMS-7 has resin sheet. It's preventive measure to keep them from shorting out PC boards.



>>> Sense of Strength
High reliability

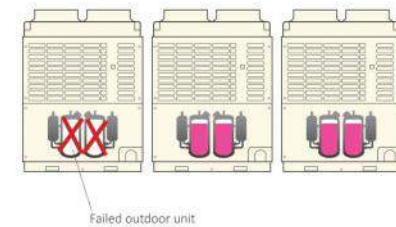
◀ Backup operation

Inverter control can be adjusted to compensate for a failed compressor or header unit and in the unlikely event of a compressor failure, backup operation is available in both a single system or as a module.

Single outdoor unit backup*

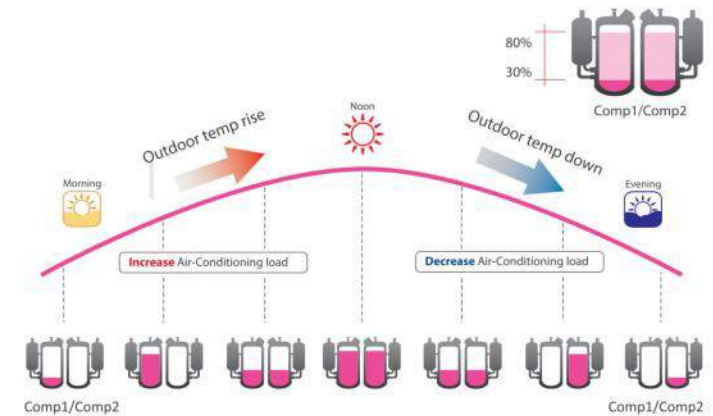


Module outdoor unit backup



◀ Reliability rotational control*

The rotational control in SMMS-7 is designed to improve system reliability by controlling the operation of each compressor to work equally under variable conditions.



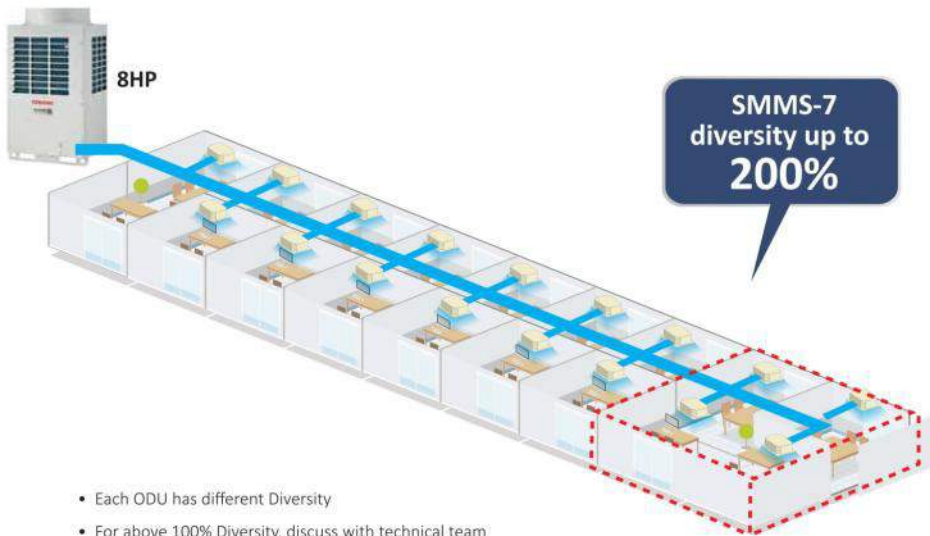
* Applicable for multiple compressor only.

>>> Sense of flexibility

Design flexibility

◀ Upto 200 % diversity

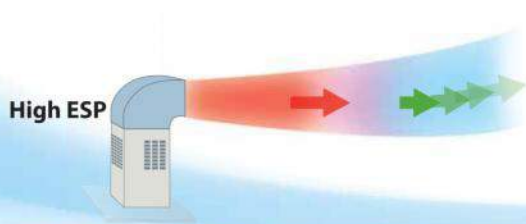
Thanks to the newly developed refrigerant circuit, the diversity of outdoor units has drastically increased. This makes it much easier to design for installations with many rooms or offices.



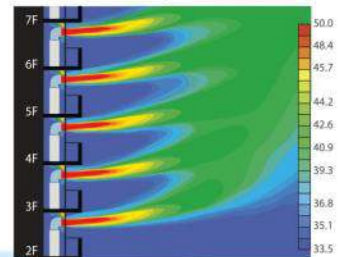
- Each ODU has different Diversity
- For above 100% Diversity, discuss with technical team

◀ The external static pressure

The SMMS-7 units are suitable for challenging installations where high external static pressure performance is needed.



Air flow simulation diagram



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

>>> Sense of flexibility

Design flexibility

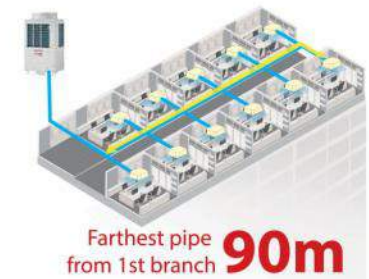
◀ Total piping length

Applied with Toshiba's unique and greatly improved technology, SMMS-7 can reach up to 1,000 meters of maximum piping length.



◀ Farthest pipe from 1st branch

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



◀ Farthest equivalent length

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



◀ Height between indoor units

Another industry's top class is a maximum vertical distance between indoor units which reaches up to 40 meters, equal to an entire 11-storied building. SMMS-7's enhanced piping capabilities result in more benefits for the system design, installation flexibility, as well as the less installation cost.





CAPACITY RANGE



Single unit capacity expanded

SMMS-7 comes with a larger capacity unit, producing up to 24HP on a single module platform.



*Standard model

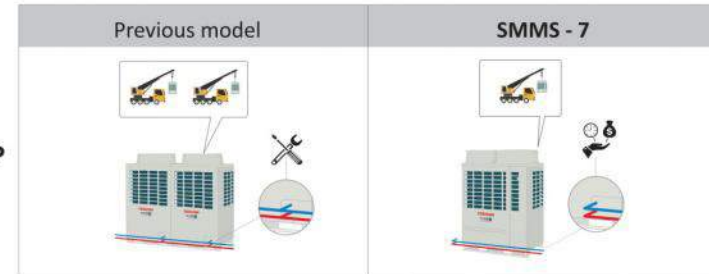
Industry-leading installation flexibility

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.



Installation flexibility

The maximum combination is available upto 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.

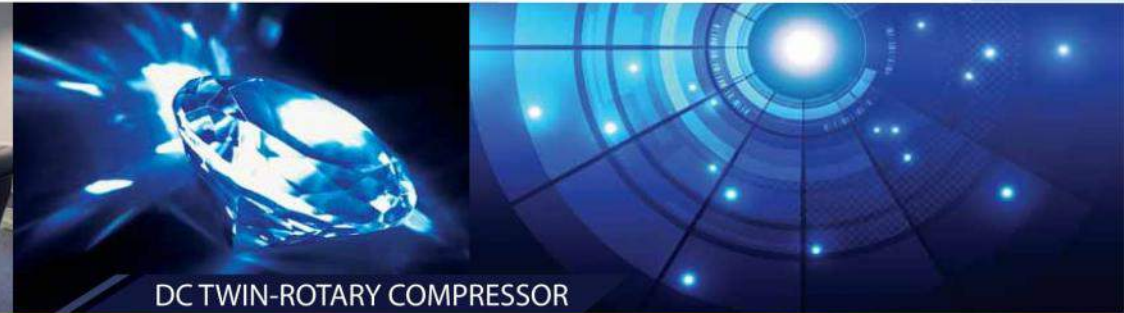


SMMS-7 is capable of covering up to 24HP with a single module. Reducing pipe work and overall installation time.





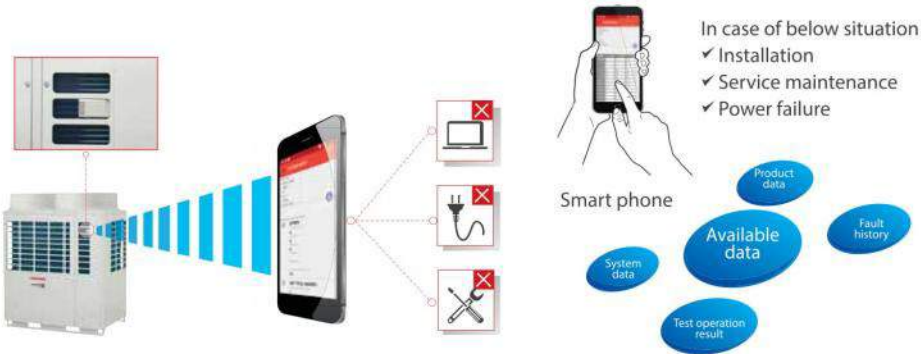
SMMS WAVE TOOL



DC TWIN-ROTARY COMPRESSOR

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 a PC or opening cabinet.



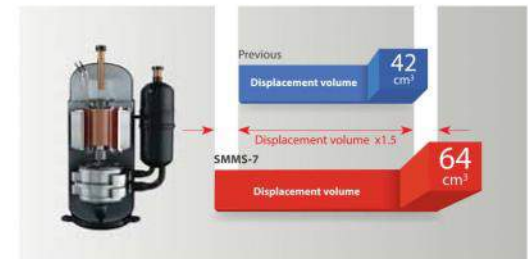
By the new smart phone application, the testing and commissioning can be done without opening the cabinet.



*Smartphone specification : Android™ OS 5.0

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

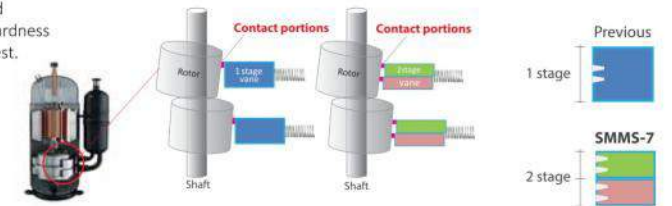
Increased hardness of the DLC coated vane reduces friction and increases both reliability and performance.



* DLC: Diamond Like Carbon

2-stage vane

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

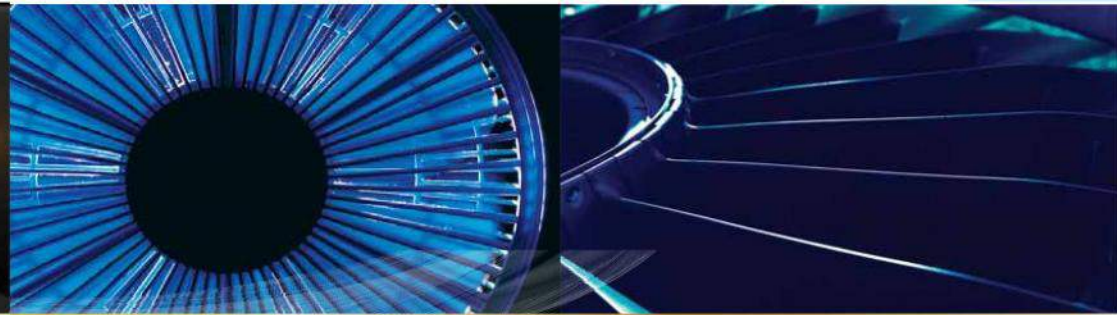
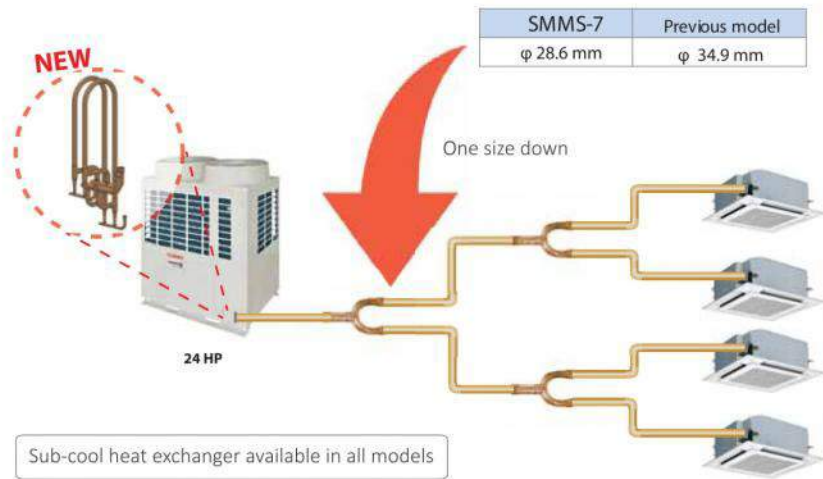




SLIMMER PIPE SIZE

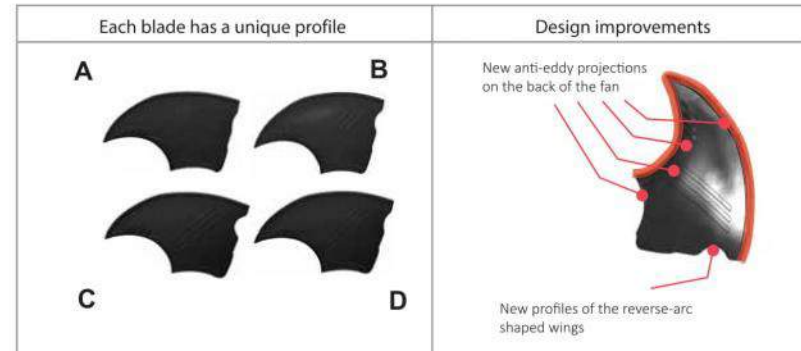
◀ Piping saving costs

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



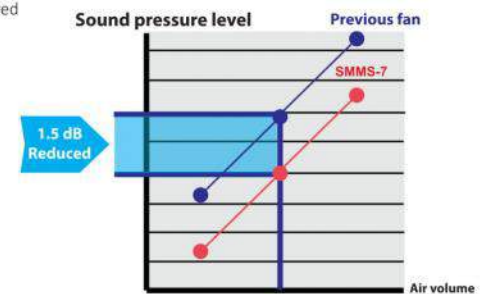
◀ New advanced blade shapes for a better air flow management

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



◀ More quiet in comparison with the previous fan

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



Outdoor units

Standard model

Capacity		8HP	10HP	12HP	14HP	16HP	18HP	20HP	22HP	24HP
Model Name (MMY-)	50 Hz	MAP08078P	MAP10078P	MAP12078P	MAP14078P	MAP16078P	MAP18078P	MAP20078P	MAP22078P	MAP24078P
Cooling capacity (kW)		22.4	28.0	33.5	40.0	45.0	50.4	56.0	61.5	67.0

Capacity		26HP	28HP	30HP	32HP	34HP	36HP	38HP		
Model Name (MMY-)	50 Hz	AP26178P	AP28178P	AP30178P	AP32178P	AP34178P	AP36178P	AP38178P		
Cooling capacity (kW)		73.5	80.0	85.0	90.0	95.4	100.8	106.4		

Capacity		40HP	42HP	44HP	46HP	48HP				
Model Name (MMY-)	50 Hz	AP40178P	AP42178P	AP44178P	AP46178P	AP48178P				
Cooling capacity (kW)		112.0	120.0	125.0	130.4	136.0				

Capacity		50HP	52HP	54HP	56HP	58HP	60HP			
Model Name (MMY-)	50 Hz	AP50178P	AP52178P	AP54178P	AP56178P	AP58178P	AP60178P			
Cooling capacity (kW)		141.0	146.4	152.0	157.0	162.4	168.0			

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

High efficiency Model

Capacity		14HP	16HP	18HP	20HP	22HP	24HP			
Model Name (MMY-)	50 Hz	MAP14A778P	AP162778P	AP182778P	AP202778P	AP222778P	AP242778P			
Cooling capacity (kW)		40.0	44.8	50.4	56.0	61.5	67.2			

Capacity		26HP	28HP	30HP	32HP	34HP				
Model Name (MMY-)	50 Hz	AP262778P	AP282778P	AP302778P	AP322778P	AP342778P				
Cooling capacity (kW)		73.5	80.0	84.0	89.5	95.0				

Capacity		36HP	38HP	40HP	42HP					
Model Name (MMY-)	50 Hz	AP362778P	AP382778P	AP402778P	AP422778P					
Cooling capacity (kW)		105.0	107.0	113.5	120.0					

Capacity		44HP	46HP	48HP	50HP	52HP	54HP			
Model Name (MMY-)	50 Hz	AP442778P	AP462778P	AP482778P	AP502778P	AP522778P	AP542778P			
Cooling capacity (kW)		125.0	130.4	135.0	140.4	145.8	151.2			

	Y-shape branching joint				Branch headers				Outdoor unit connection piping kit	
Appearance										
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 Total below 14.2 or more and below 25.2		Max.8 branches Total below 14.2 or more and below 25.2		Total below 26.0	Total 26.0 or more

* Anti-Corrosion protection model: MMY-MAP****T8JP

Outdoor unit specifications

Standard model (Single unit)

Equivalent HP		Technical specifications				
50Hz (MMY-)		8HP	10HP	12HP	14HP	16HP
Model name		MAP0807T8P	MAP1007T8P	MAP1207T8P	MAP1407T8P	MAP1607T8P
Outdoor unit type		Inverter				
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)				
Cooling (*) Capacity	(kW)	22.4	28.0	33.5	40.0	45.0
External dimensions (Height / Width / Depth)	(mm)	1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 990 / 780	1,800 / 1,210 / 780
Total weight	(kg)	200	200	200	200	281
Compressor	Motor output (kW)	4.0 x 1	5.8 x 1	7.1 x 1	10.0 x 1	5.5 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
Sound pressure level	(dB(A))	55	57	60	61	61

Standard model (Single unit)

Equivalent HP		Technical specifications			
50Hz (MMY-)		18HP	20HP	22HP	24HP
Model name		MAP1807T8P	MAP2007T8P	MAP2207T8P	MAP2407T8P
Outdoor unit type		Inverter			
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)			
Cooling (*) Capacity	(kW)	50.4	56.0	61.5	67.0
External dimensions (Height / Width / Depth)	(mm)	1,800 / 1,210 / 780	1,800 / 1,210 / 780	1,800 / 1,600 / 780	1,800 / 1,600 / 780
Total weight	(kg)	281	281	340	340
Compressor	Motor output (kW)	6.6 x 2	7.8 x 2	8.2 x 2	10.3 x 2
Fan unit	Motor output (kW)	1.0	1.0	2.0	2.0
	Air volume (m ³ /h)	12,600	12,600	18,500	18,500
Refrigerant piping	Main pipe diameter	Gas side (mm) ø 28.6	ø 28.6	ø 28.6	ø 34.9
		Liquid side (mm) ø 15.9	ø 15.9	ø 19.1	ø 19.1
Sound pressure level	(dB(A))	61	61	63	63

Outdoor unit specifications

Standard model (Combination)

Equivalent HP		Technical specifications				
50Hz (MMY-)		26HP	28HP		30HP	
Model name		AP2617T8P	AP2817T8P		AP3017T8P	
Outdoor unit type		Inverter				
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)				
Outdoor unit model	50Hz (MMY-)	MAP1407T8P	MAP1207T8P	MAP1407T8P	MAP1607T8P	MAP1407T8P
Cooling (*) Capacity	(kW)	73.5		80.0		85.0
Total weight	(kg)	200	200	200	200	281
Compressor	Motor output (kW)	10.0 x 1	7.1 x 1	10.0 x 1	10.0 x 1	5.5 x 2
Fan unit	Motor output (kW)	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
Refrigerant piping	Main pipe diameter	Gas side (mm) ø 19.1		ø 34.9		ø 34.9
		Liquid side (mm) ø 12.7		ø 19.1		ø 19.1
Sound pressure level	(dB(A))	63.5		64.0		64.0

Standard model (Combination)

Equivalent HP		Technical specifications			
50Hz (MMY-)		32HP	34HP		36HP
Model name		AP3217T8P	AP3417T8P		AP3617T8P
Outdoor unit type		Inverter			
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)			
Outdoor unit model	50Hz (MMY-)	MAP1607T8P	MAP1607T8P	MAP1807T8P	MAP1807T8P
Cooling (*) Capacity	(kW)	90.0	281	95.4	281
Total weight	(kg)	281	281	281	281
Compressor	Motor output (kW)	5.5 x 2	5.5 x 2	6.6 x 2	5.5 x 2
Fan unit	Motor output (kW)	1.0	1.0	1.0	1.0
	Air volume (m ³ /h)	12,600	12,600	12,600	12,600
Refrigerant piping	Main pipe diameter	Gas side (mm) ø 34.9		ø 34.9	
		Liquid side (mm) ø 19.1		ø 19.1	
Sound pressure level	(dB(A))	64.0		64.0	

*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

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

Indoor units for SMMS - 7



Cooling capacity (HP equivalent)	4-way air discharge cassette type#	Compact 4-way cassette	2-way air discharge cassette type#	1-way air discharge cassette type#	Concealed duct type#
007 type 2.2 kW (0.8HP)		MMU-AP0074MH1-E	MMU-AP0072WH1	MMU-AP0074YH1-E	MMD-AP0076BHP1-E
009 type 2.8 kW (1HP)	MMU-AP0094HP1-E	MMU-AP0094MH1-E	MMU-AP0092WH1	MMU-AP0094YH1-E	MMD-AP0096BHP1-E
012 type 3.6 kW (1.25HP)	MMU-AP0124HP1-E	MMU-AP0124MH1-E	MMU-AP0122WH1	MMU-AP0124YH1-E	MMD-AP0126BHP1-E
015 type 4.5 kW (1.7HP)	MMU-AP0154HP1-E	MMU-AP0154MH1-E	MMU-AP0152WH1	MMU-AP0154YH1-E	MMD-AP0156BHP1-E
018 type 5.6 kW (2HP)	MMU-AP0184HP1-E	MMU-AP0184MH1-E	MMU-AP0182WH1	MMU-AP0184SH1-E	MMD-AP0186BHP1-E
024 type 7.1 kW (2.5HP)	MMU-AP0244HP1-E		MMU-AP0242WH1	MMU-AP0244SH1-E	MMD-AP0246BHP1-E
027 type 8.0 kW (3HP)	MMU-AP0274HP1-E		MMU-AP0272WH1		MMD-AP0276BHP1-E
030 type 9.0 kW (3.2HP)	MMU-AP0304HP1-E		MMU-AP0302WH1		MMD-AP0306BHP1-E
036 type 11.2 kW (4HP)	MMU-AP0364HP1-E		MMU-AP0362WH1		MMD-AP0366BHP1-E
048 type 14.0 kW (5HP)	MMU-AP0484HP1-E		MMU-AP0482WH1		MMD-AP0486BHP1-E
056 type 16.0kW (6HP)	MMU-AP0564HP1-E		MMU-AP0562WH1		MMD-AP0566BHP1-E
072 type 22.4kW (8HP)					
096 type 28.0kW (10HP)					



Cooling capacity (HP equivalent)	Concealed duct high static pressure type*	Slim duct type	Ceiling type	High wall type 6 series
007 type 2.2 kW (0.8HP)		MMD-AP0074SPH1-E		MMK-AP0076HP1-IN
009 type 2.8 kW (1HP)		MMD-AP0094SPH1-E		MMK-AP0096HP1-IN
012 type 3.6 kW (1.25HP)		MMD-AP0124SPH1-E		MMK-AP0126HP1-IN
015 type 4.5 kW (1.7HP)		MMD-AP0154SPH1-E	MMC-AP0157HP1-E	MMK-AP0156HP1-IN
018 type 5.6 kW (2HP)	MMD-AP0186HP1-E	MMD-AP0184SPH1-E	MMC-AP0187HP1-E	MMK-AP0186HP1-IN
024 type 7.1 kW (2.5HP)	MMD-AP0246HP1-E	MMD-AP0244SPH1-E	MMC-AP0247HP1-E	MMK-AP0246HP1-IN
027 type 8.0 kW (3HP)	MMD-AP0276HP1-E	MMD-AP0274SPH1-E	MMC-AP0277HP1-E	
030 type 9.0 kW (3.2HP)				
036 type 11.2 kW (4HP)	MMD-AP0366HP1-E		MMC-AP0367HP1-E	
048 type 14.0 kW (5HP)	MMD-AP0486HP1-E		MMC-AP0487HP1-E	
056 type 16.0kW (6HP)	MMD-AP0566HP1-E		MMC-AP0567HP1-E	
072 type 22.4kW (8HP)	MMD-AP0726HP-E			
096 type 28.0 kW (10HP)	MMD-AP0966HP-E			

Drain pump in-built
* Drain pump in-built upto 6HP



Cooling capacity (HP equivalent)	Console	Floor standing cabinet type	Floor standing concealed type	Floor standing type	Floor standing duct type	Floor standing direct type
007 type 2.2 kW (0.8HP)	MML-AP0074NH1-E	MML-AP0074H1-E	MML-AP0074BH1-E			
009 type 2.8 kW (1HP)	MML-AP0094NH1-E	MML-AP0094H1-E	MML-AP0094BH1-E			
012 type 3.6 kW (1.25HP)	MML-AP0124NH1-E	MML-AP0124H1-E	MML-AP0124BH1-E			
015 type 4.5 kW (1.7HP)	MML-AP0154NH1-E	MML-AP0154H1-E	MML-AP0154BH1-E	MMF-AP0156H1-E		
018 type 5.6 kW (2HP)	MML-AP0184NH1-E	MML-AP0184H1-E	MML-AP0184BH1-E	MMF-AP0186H1-E		
024 type 7.1 kW (2.5HP)		MML-AP0244H1-E	MML-AP0244BH1-E	MMF-AP0246H1-E		
027 type 8.0 kW (3HP)				MMF-AP0276H1-E		
030 type 9.0 kW (3.2HP)						
036 type 11.2 kW (4HP)				MMF-AP0366H1-E		
048 type 14.0 kW (5HP)				MMF-AP0486H1-E		
056 type 16.0 kW (6HP)				MMF-AP0566H1-E		
072 type 22.4 kW (8HP)					MMF-AP0724DH-V	MMF-AP0724H-VA
096 type 28.0 kW (10HP)					MMF-AP0964DH-V	MMF-AP0964H-VA
144 type 45.0 kW (16HP)					MMF-AP1444DH-V	MMF-AP1444H-VA
192 type 56.0 kW (20HP)					MMF-AP1924DH-V	MMF-AP1924H-VA



Cooling capacity (HP equivalent)	Air-to-air heat exchanger with DX-coil type	Fresh air intake Indoor unit type	Air volume	Air-to-air heat exchanger*
007 type 2.2 kW (0.8HP)			150 m ³ /h	VN-M150HE
009 type 2.8 kW (1HP)	MMD-VN502HEXE		250 m ³ /h	VN-M250HE
012 type 3.6 kW (1.25HP)			300 m ³ /h	VN-M350HE
015 type 4.5 kW (1.7HP)	MMD-VN800HEXE		500 m ³ /h	VN-M500HE
018 type 5.6 kW (2HP)			650 m ³ /h	VN-M650HE
024 type 7.1 kW (2.5HP)	MMD-VN1002HEXE/2		800 m ³ /h	VN-M800HE
027 type 8.0 kW (3HP)			1000 m ³ /h	VN-M1000HE
030 type 9.0 kW (3.2HP)			1500 m ³ /h	VN-M1500HE
036 type 11.2 kW (4HP)			2000 m ³ /h	VN-M2000HE
048 type 14.0 kW (5HP)		MMD-AP0481HFE		
056 type 16.0kW (6HP)				
072 type 22.4kW (8HP)		MMD-AP0721HFE		
096 type 28.0 kW (10HP)		MMD-AP0961HFE		

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

Outdoor unit specifications

Standard model (Combination)

Equivalent HP		38HP			40HP			42HP			
Model name	50Hz (MMY-)	AP3817T8P			AP4017T8P			AP4217T8P			
Outdoor unit type		Inverter									
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model	50Hz (MMY-)	MAP2007T8P	MAP1807T8P	MAP2007T8P	MAP2007T8P	MAP1407T8P	MAP1407T8P	MAP1407T8P	MAP1407T8P	MAP1407T8P	
Cooling (**) Capacity	(kW)	106.4			112.0			120.0			
Total weight		281	281	281	281	200	200	200	200	200	
Compressor	Motor output	(kW)	7.8 x 2	6.6 x 2	7.8 x 2	7.8 x 2	10.0 x 1	10.0 x 1	10.0 x 1	10.0 x 1	
Fan unit	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m ³ /h)	12,600	12,600	12,600	12,600	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		
Sound pressure level	(dB(A))	64.0			64.0			66.0			

Standard model (Combination)

Equivalent HP		44HP			46HP			48HP			
Model name	50Hz (MMY-)	AP4417T8P			AP4617T8P			AP4817T8P			
Outdoor unit type		Inverter									
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model	50Hz (MMY-)	MAP1607T8P	MAP1407T8P	MAP1407T8P	MAP1807T8P	MAP1407T8P	MAP1407T8P	MAP2007T8P	MAP1407T8P	MAP1407T8P	
Cooling (**) Capacity	(kW)	281	200	200	281	200	200	281	200	200	
Total weight	(kg)	125.0			130.4			136.0			
Compressor	Motor output	(kW)	5.5 x 2	10.0 x 1	10.0 x 1	6.6 x 2	10.0 x 1	10.0 x 1	7.8 x 2	10.0 x 1	
Fan unit	Motor output	(kW)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
	Air volume	(m ³ /h)	12,600	12,200	12,200	12,600	12,200	12,200	12,600	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		
Sound pressure level	(dB(A))	66.0			66.0			66.0			

Outdoor unit specifications

Standard model (Combination)

Equivalent HP		50HP			52HP			54HP			
Model name	50Hz (MMY-)	AP5017T8P			AP5217T8P			AP5417T8P			
Outdoor unit type		Inverter									
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model	50Hz (MMY-)	MAP2007T8P	MAP1607T8P	MAP1407T8P	MAP2007T8P	MAP1807T8P	MAP1407T8P	MAP2007T8P	MAP2007T8P	MAP1407T8P	
Cooling (**) Capacity	(kW)	141.0			146.4			152.0			
Total weight	(kg)	281	281	200	281	281	200	281	281	200	
Compressor	Motor output	(kW)	7.8 x 2	5.5 x 2	10.0 x 1	7.8 x 2	6.6 x 2	10.0 x 1	7.8 x 2	7.8 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	(m ³ /h)	12,600	12,600	12,200	12,600	12,600	12,200	12,600	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		
Sound pressure level	(dB(A))	66.0			66.0			66.0			

Standard model (Combination)

Equivalent HP		56HP			58HP			60HP			
Model name	50Hz (MMY-)	AP5617T8P			AP5817T8P			AP6017T8P			
Outdoor unit type		Inverter									
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)									
Outdoor unit model	50Hz (MMY-)	MAP2007T8P	MAP1607T8P	MAP1607T8P	MAP2007T8P	MAP2007T8P	MAP1807T8P	MAP2007T8P	MAP2007T8P	MAP2007T8P	
Cooling (**) Capacity	(kW)	157.0			162.4			168.0			
Total weight	(kg)	281	281	281	281	281	281	281	281	281	
Compressor	Motor output	(kW)	7.8 x 2	7.8 x 2	5.5 x 2	7.8 x 2	7.8 x 2	6.6 x 2	7.8 x 2	7.8 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	(m ³ /h)	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3			ø 41.3		
		Liquid side (mm)	ø 22.2			ø 22.2			ø 22.2		
Sound pressure level	(dB(A))	66.0			66.0			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 Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

Outdoor unit specifications

High efficiency model (Single unit/Combination)

Equivalent HP		14HP		16HP		18HP	
Model name	50Hz (MMY-)	MAP14A7T8P		AP1627T8P		AP1827T8P	
Outdoor unit type		Inverter					
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model	50Hz (MMY-)	MAP14A7T8P		MAP0807T8P		MAP1007T8P	
Cooling (*) Capacity	(kW)	40.0		44.8		50.4	
External dimensions (Height / Width / Depth)	(mm)	1,800 / 1,210 / 780		1,800 / 990 / 780		1,800 / 990 / 780	
Total weight	(kg)	281		200		200	
Compressor	Motor output (kW)	4.6 x 2		4.0 x 1		5.8 x 1	
Fan unit	Motor output (kW)	1.0		1.0		1.0	
	Air volume (m ³ /h)	12,200		9,700		9,700	
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 15.9	
Sound pressure level	(dB(A))	60		58.0		59.5	

Outdoor unit specifications

High efficiency model (Combination)

Equivalent HP		26HP		28HP		30HP	
Model name	50Hz (MMY-)	AP2627T8P		AP2827T8P		AP3027T8P	
Outdoor unit type		Inverter					
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model	50Hz (MMY-)	MAP14A7T8P		MAP1207T8P		MAP14A7T8P	
Cooling (*) Capacity	(kW)	73.5		80.0		84.0	
External dimensions (Height / Width / Depth)	(mm)	1,800 / 1,210 / 780		1,800 / 990 / 780		1,800 / 1,210 / 780	
Total weight	(kg)	281		200		200	
Compressor	Motor output (kW)	4.6 x 2		7.1 x 1		4.6 x 2	
Fan unit	Motor output (kW)	1.0		1.0		1.0	
	Air volume (m ³ /h)	12,200		12,200		9,700	
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	
Sound pressure level	(dB(A))	63.0		63		62.0	

High efficiency model (Combination)

Equivalent HP		20HP		22HP		24HP	
Model name	50Hz (MMY-)	AP2027T8P		AP2227T8P		AP2427T8P	
Outdoor unit type		Inverter					
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model	50Hz (MMY-)	MAP1007T8P		MAP1207T8P		MAP0807T8P	
	60Hz (MMY-)	MAP1007T7P		MAP1207T7P		MAP0807T7P	
Cooling (*) Capacity	(kW)	56.0		61.5		67.2	
External dimensions (Height / Width / Depth)	(mm)	1,800 / 990 / 780		1,800 / 990 / 780		1,800 / 990 / 780	
Total weight	(kg)	200		200		200	
Compressor	Motor output (kW)	5.8 x 1		7.1 x 1		4.0 x 1	
Fan unit	Motor output (kW)	1.0		1.0		1.0	
	Air volume (m ³ /h)	9,700		12,200		9,700	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 28.6		ø 28.6		ø 34.9
	Liquid side (mm)	ø 15.9		ø 19.1		ø 19.1	
Sound pressure level	(dB(A))	60.0		62.0		60.0	

High efficiency model (Combination)

Equivalent HP		32HP		34HP		36HP	
Model name	50Hz (MMY-)	AP3227T8P		AP3427T8P		AP3627T8P	
Outdoor unit type		Inverter					
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)					
Outdoor unit model	50Hz (MMY-)	MAP1207T8P		MAP1007T8P		MAP1207T8P	
Cooling (*) Capacity	(kW)	89.5		95.0		100.5	
External dimensions (Height / Width / Depth)	(mm)	1,800 / 990 / 780		1,800 / 990 / 780		1,800 / 990 / 780	
Total weight	(kg)	200		200		200	
Compressor	Motor output (kW)	7.1 x 1		5.8 x 1		5.8 x 1	
Fan unit	Motor output (kW)	1.0		1.0		1.0	
	Air volume (m ³ /h)	12,200		9,700		12,200	
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	
Sound pressure level	(dB(A))	63.0		64.0		65.0	

*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

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

Outdoor unit specifications

High efficiency model (Combination)

Equivalent HP		Technical specifications										
50Hz (MMY-)		38HP			40HP			42HP				
Model name	50Hz (MMY-)	AP3827T8P			AP4027T8P			AP4217T8P				
Outdoor unit type		Inverter										
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)										
Outdoor unit model	50Hz (MMY-)	MAP14A7T8P	MAP1207T8P	MAP1207T8P	MAP14A7T8P	MAP14A7T8P	MAP1207T8P	MAP14A7T8P	MAP14A7T8P	MAP14A7T8P	MAP14A7T8P	
Cooling (**)	Capacity (kW)	107.0			113.5			120.0				
External dimensions (Height / Width / Depth)	(mm)	1,800/1,210/780	1,800/990/780	1,800/990/780	1,800/1,210/780	1,800/1,210/780	1,800/990/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	
Total weight	(kg)	281	200	200	281	281	200	281	281	281	281	
Compressor	Motor output (kW)	4.6 x 2	7.1 x 1	7.1 x 1	4.6 x 2	4.6 x 2	7.1 x 2	4.6 x 2	4.6 x 2	4.6 x 2	4.6 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	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	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				
Sound pressure level	(dB(A))	65.0			65.0			65.0				

Outdoor unit specifications

High efficiency model (Combination)

Equivalent HP		Technical specifications										
50Hz (MMY-)		50HP			52HP			54HP				
Model name	50Hz (MMY-)	AP5027T8P			AP5227T8P			AP5427T8P				
Outdoor unit type		Inverter										
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)										
Outdoor unit model	50Hz (MMY-)	MAP1807T8P	MAP1607T8P	MAP1607T8P	MAP1807T8P	MAP1807T8P	MAP1607T8P	MAP1807T8P	MAP1807T8P	MAP1807T8P	MAP1807T8P	
Cooling (**)	Capacity (kW)	140.4			145.8			151.2				
External dimensions (Height / Width / Depth)	(mm)	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	
Total weight	(kg)	281	281	281	281	281	281	281	281	281	281	
Compressor	Motor output (kW)	6.6 x 2	5.5 x 2	5.5 x 2	6.6 x 2	6.6 x 2	5.5 x 2	6.6 x 2	6.6 x 2	6.6 x 2	6.6 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	1.0	
	Air volume (m ³ /h)	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	12,600	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3			ø 41.3			
	Liquid side (mm)	ø 22.2			ø 22.2			ø 22.2				
Sound pressure level	(dB(A))	66.0			66.0			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

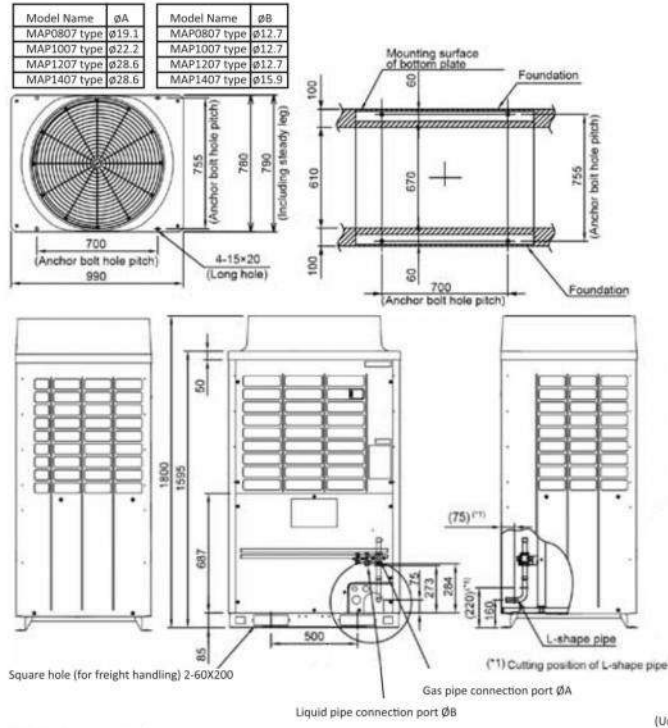
Based on equivalent piping length of 7.5 m and piping height difference of 0 m.

High efficiency model (Combination)

Equivalent HP		Technical specifications										
50Hz (MMY-)		44HP			46HP			48HP				
Model name	50Hz (MMY-)	AP4427T8P			AP4627T8P			AP4827T8P				
Outdoor unit type		Inverter										
Power supply (*)		3phase 4wires 50Hz 400V (380-415V)										
Outdoor unit model	50Hz (MMY-)	MAP1807T8P	MAP14A7T8P	MAP14A7T8P	MAP1807T8P	MAP14A7T8P	MAP14A7T8P	MAP1607T8P	MAP1607T8P	MAP1607T8P	MAP1607T8P	
Cooling (**)	Capacity (kW)	125.0			130.4			135.0				
External dimensions (Height / Width / Depth)	(mm)	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	1,800/1,210/780	
Total weight	(kg)	281	281	281	281	281	281	281	281	281	281	
Compressor	Motor output (kW)	5.5 x 2	4.6 x 2	4.6 x 2	6.6 x 2	4.6 x 2	4.6 x 2	5.5 x 2	5.5 x 2	5.5 x 2	5.5 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	1.0	
	Air volume (m ³ /h)	12,600	12,200	12,200	12,600	12,200	12,200	12,600	12,600	12,600	12,600	
Refrigerant piping	Main pipe diameter	Gas side (mm)	ø 41.3			ø 41.3			ø 41.3			
	Liquid side (mm)	ø 22.2			ø 22.2			ø 22.2				
Sound pressure level	(dB(A))	65.5			65.5			66.0				

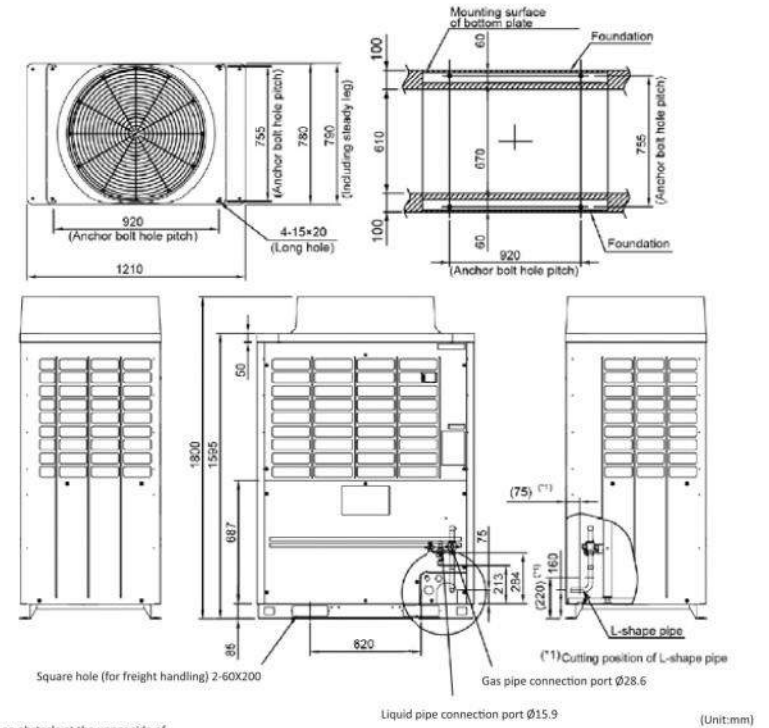
Outdoor units external drawings

Model : MMY-MAP0807T8P
 MMY-MAP1007T8P
 MMY-MAP1207T8P
 MMY-MAP1407T8P



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

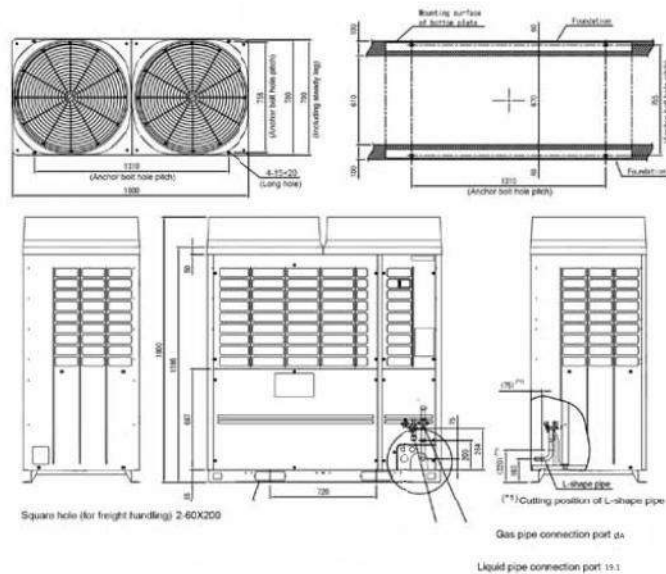
Model : MMY-MAP14A7T8P
 MMY-MAP1607T8P
 MMY-MAP1807T8P
 MMY-MAP2007T8P



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

Model : MMY-MAP2207T8P
MMY-MAP2407T8P

Model Name	OA
MMY-MAP2207T8P	B38.6
MMY-MAP2407T8P	B34.9



- (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 heavy protection model is the same as that of standard model.

(Unit:mm)



Indoor units for SMMS - 7



Cooling capacity (HP equivalent)	4-way air discharge cassette type#	Compact 4-way cassette	2-way air discharge cassette type#	1-way air discharge cassette type#	Concealed duct type#
007 type 2.2 kW (0.8HP)		MMU-AP0074MH1-E	MMU-AP0072WH1	MMU-AP0074YH1-E	MMD-AP0076BHP1-E
009 type 2.8 kW (1HP)	MMU-AP0094HP1-E	MMU-AP0094MH1-E	MMU-AP0092WH1	MMU-AP0094YH1-E	MMD-AP0096BHP1-E
012 type 3.6 kW (1.25HP)	MMU-AP0124HP1-E	MMU-AP0124MH1-E	MMU-AP0122WH1	MMU-AP0124YH1-E	MMD-AP0126BHP1-E
015 type 4.5 kW (1.7HP)	MMU-AP0154HP1-E	MMU-AP0154MH1-E	MMU-AP0152WH1	MMU-AP0154YH1-E	MMD-AP0156BHP1-E
018 type 5.6 kW (2HP)	MMU-AP0184HP1-E	MMU-AP0184MH1-E	MMU-AP0182WH1	MMU-AP0184SH1-E	MMD-AP0186BHP1-E
024 type 7.1 kW (2.5HP)	MMU-AP0244HP1-E		MMU-AP0242WH1	MMU-AP0244SH1-E	MMD-AP0246BHP1-E
027 type 8.0 kW (3HP)	MMU-AP0274HP1-E		MMU-AP0272WH1		MMD-AP0276BHP1-E
030 type 9.0 kW (3.2HP)	MMU-AP0304HP1-E		MMU-AP0302WH1		MMD-AP0306BHP1-E
036 type 11.2 kW (4HP)	MMU-AP0364HP1-E		MMU-AP0362WH1		MMD-AP0366BHP1-E
048 type 14.0 kW (5HP)	MMU-AP0484HP1-E		MMU-AP0482WH1		MMD-AP0486BHP1-E
056 type 16.0kW (6HP)	MMU-AP0564HP1-E		MMU-AP0562WH1		MMD-AP0566BHP1-E
072 type 22.4kW (8HP)					
096 type 28.0kW (10HP)					



Cooling capacity (HP equivalent)	Concealed duct high static pressure type*	Slim duct type	Ceiling type	High wall type 6 series
007 type 2.2 kW (0.8HP)		MMD-AP0074SPH1-E		MMK-AP0076HP1-IN
009 type 2.8 kW (1HP)		MMD-AP0094SPH1-E		MMK-AP0096HP1-IN
012 type 3.6 kW (1.25HP)		MMD-AP0124SPH1-E		MMK-AP0126HP1-IN
015 type 4.5 kW (1.7HP)		MMD-AP0154SPH1-E	MMC-AP0157HP1-E	MMK-AP0156HP1-IN
018 type 5.6 kW (2HP)	MMD-AP0186HP1-E	MMD-AP0184SPH1-E	MMC-AP0187HP1-E	MMK-AP0186HP1-IN
024 type 7.1 kW (2.5HP)	MMD-AP0246HP1-E	MMD-AP0244SPH1-E	MMC-AP0247HP1-E	MMK-AP0246HP1-IN
027 type 8.0 kW (3HP)	MMD-AP0276HP1-E	MMD-AP0274SPH1-E	MMC-AP0277HP1-E	
030 type 9.0 kW (3.2HP)				
036 type 11.2 kW (4HP)	MMD-AP0366HP1-E		MMC-AP0367HP1-E	
048 type 14.0 kW (5HP)	MMD-AP0486HP1-E		MMC-AP0487HP1-E	
056 type 16.0kW (6HP)	MMD-AP0566HP1-E		MMC-AP0567HP1-E	
072 type 22.4kW (8HP)	MMD-AP0726HP-E			
096 type 28.0 kW (10HP)	MMD-AP0966HP-E			

Drain pump in-built
* Drain pump in-built upto 6HP



Cooling capacity (HP equivalent)	Console	Floor standing cabinet type	Floor standing concealed type	Floor standing type	Floor standing duct type	Floor standing direct type
007 type 2.2 kW (0.8HP)	MML-AP0074NH1-E	MML-AP0074H1-E	MML-AP0074BH1-E			
009 type 2.8 kW (1HP)	MML-AP0094NH1-E	MML-AP0094H1-E	MML-AP0094BH1-E			
012 type 3.6 kW (1.25HP)	MML-AP0124NH1-E	MML-AP0124H1-E	MML-AP0124BH1-E			
015 type 4.5 kW (1.7HP)	MML-AP0154NH1-E	MML-AP0154H1-E	MML-AP0154BH1-E	MMF-AP0156H1-E		
018 type 5.6 kW (2HP)	MML-AP0184NH1-E	MML-AP0184H1-E	MML-AP0184BH1-E	MMF-AP0186H1-E		
024 type 7.1 kW (2.5HP)		MML-AP0244H1-E	MML-AP0244BH1-E	MMF-AP0246H1-E		
027 type 8.0 kW (3HP)				MMF-AP0276H1-E		
030 type 9.0 kW (3.2HP)						
036 type 11.2 kW (4HP)				MMF-AP0366H1-E		
048 type 14.0 kW (5HP)				MMF-AP0486H1-E		
056 type 16.0 kW (6HP)				MMF-AP0566H1-E		
072 type 22.4 kW (8HP)					MMF-AP0724DH-V	MMF-AP0724H-VA
096 type 28.0 kW (10HP)					MMF-AP0964DH-V	MMF-AP0964H-VA
144 type 45.0 kW (16HP)					MMF-AP1444DH-V	MMF-AP1444H-VA
192 type 56.0 kW (20HP)					MMF-AP1924DH-V	MMF-AP1924H-VA



Cooling capacity (HP equivalent)	Air-to-air heat exchanger with DX-coil type	Fresh air intake Indoor unit type	Air volume	Air-to-air heat exchanger*
007 type 2.2 kW (0.8HP)			150 m ³ /h	VN-M150HE
009 type 2.8 kW (1HP)	MMD-VN502HEXE		250 m ³ /h	VN-M250HE
012 type 3.6 kW (1.25HP)			300 m ³ /h	VN-M350HE
015 type 4.5 kW (1.7HP)	MMD-VN800HEXE		500 m ³ /h	VN-M500HE
018 type 5.6 kW (2HP)			650 m ³ /h	VN-M650HE
024 type 7.1 kW (2.5HP)	MMD-VN1002HEXE/2		800 m ³ /h	VN-M800HE
027 type 8.0 kW (3HP)			1000 m ³ /h	VN-M1000HE
030 type 9.0 kW (3.2HP)			1500 m ³ /h	VN-M1500HE
036 type 11.2 kW (4HP)			2000 m ³ /h	VN-M2000HE
048 type 14.0 kW (5HP)		MMD-AP0481HFE		
056 type 16.0kW (6HP)				
072 type 22.4kW (8HP)		MMD-AP0721HFE		
096 type 28.0 kW (10HP)		MMD-AP0961HFE		

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



4-way Air Discharge Cassette Type
MMU-AP*4HP1-E**

Individual louver control

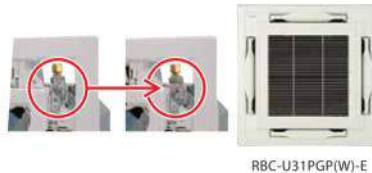
The angles of each of the four louver can be set individually
=> Enables airflow to be adapted to user preferences.



Note: RBC-AMT32E, RBC-AMS41E only

Easy installation

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



RBC-U31PG(W)-E

Technical specifications

Model name	MMU-AP0094HP1-E	AP0124HP1-E	AP0154HP1-E	AP0184HP1-E	AP0244HP1-E	AP0274HP1-E	AP0304HP1-E	AP0364HP1-E	AP0484HP1-E	AP0564HP1-E	
Cooling/Heating capacity*1	(kW) 2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0	
Electrical characteristics	Power requirements: 1-phase 50Hz 230V (220~240V) / (Separate power supply for indoor units required.)										
Appearance (Ceiling panel)	Model: RBC-U31PG(W)-E										
External dimensions: Main unit (Ceiling panel)*	Height	(cm)	25.6 (3)*						31.9 (3)*		
		(m)	0.26 (0.03)*						0.32 (0.03)*		
	Width	(cm)	84 (95)*						84 (95)*		
		(m)	0.84 (0.95)*						0.84 (0.95)*		
Depth	(cm)	84 (95)*						84 (95)*			
	(m)	0.84 (0.95)*						0.84 (0.95)*			
Total weight: Main unit (Ceiling panel)*	(kg)	18 (4)*			20 (4)*			25 (4)*			
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	470/430/400	546/488/465	618/541/471	758/541/471	777/654/500	1159/841/629	1253/841/665	1253/894/724	
		m ³ /s	0.22/0.20/0.19	0.26/0.23/0.22	0.29/0.26/0.22	0.36/0.26/0.22	0.37/0.30/0.24	0.55/0.40/0.30	0.59/0.40/0.31	0.59/0.42/0.34	
Connecting pipe	Gas side	(cm)	ø 0.95		ø 1.27		ø 1.59				
	Liquid side	(cm)	ø 0.64						ø 0.95		
Drain port (nominal dia.)		(cm)	2.5 (Polyvinyl chloride tube)								
		(cm)	2.5 (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 levels 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 3: 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

***1: AP0364 to AP0564**

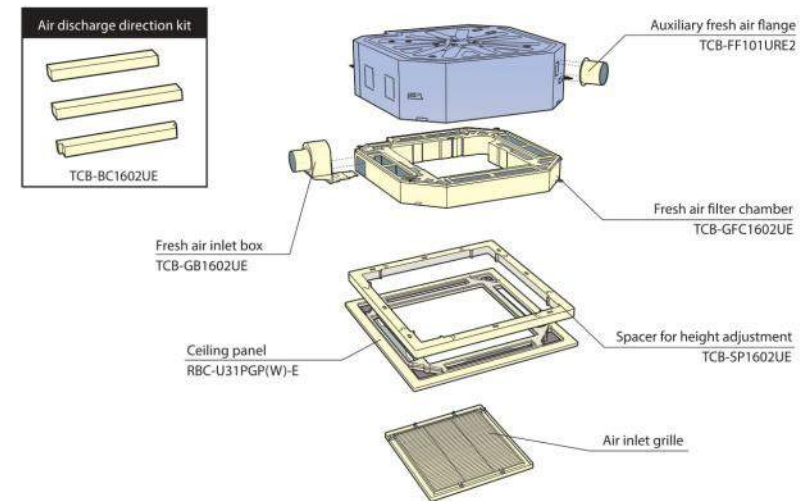
Drain standing-up size

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

Space required for installation and servicing

(Unit: mm)

Options





Compact 4-way Cassette Type
MMU-AP*4MH1-E**

Perfect for grid system ceiling

Designed for simple & easy installation and maintenance

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.

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.



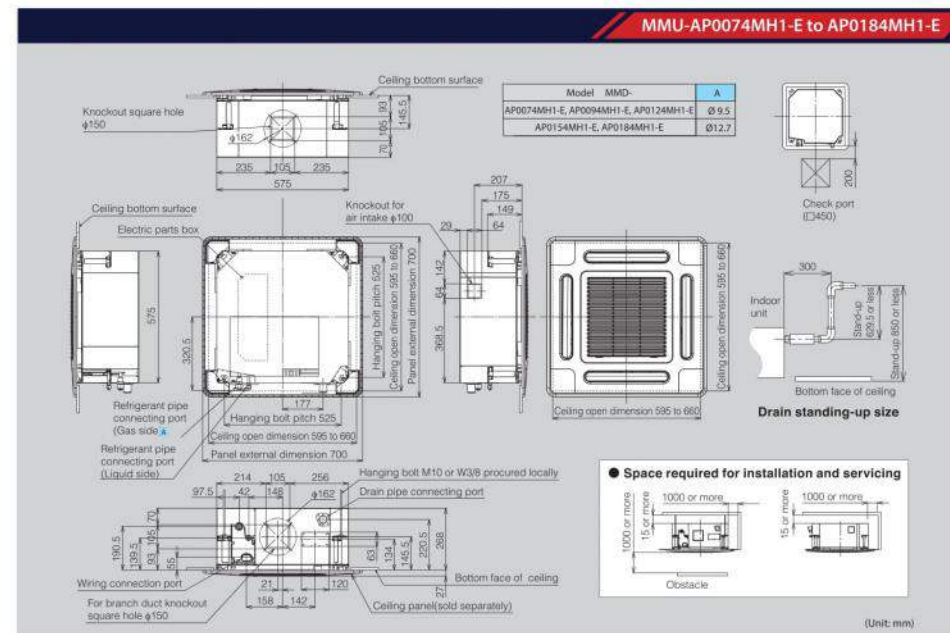
RBC-UM11PG(W/E)



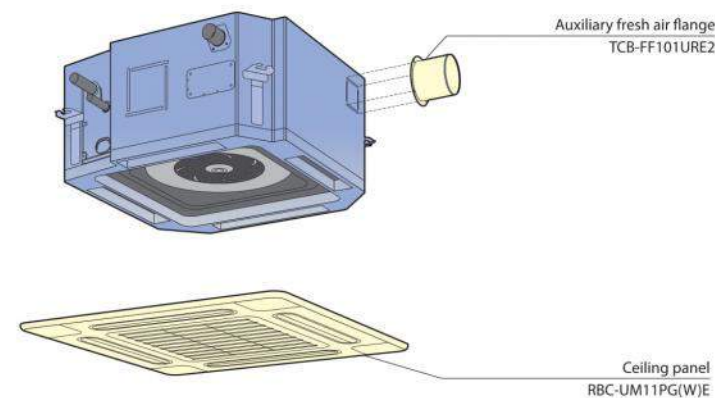
Drain-checking hole Maximum height

Technical specifications							
Model name		MMU-	AP0074MH1-E	AP0094MH1-E	AP0124MH1-E	AP0154MH1-E	AP0184MH1-E
Cooling/Heating capacity*		(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) (Separate power supply for indoor units required.)				
Appearance (Ceiling panel)		Model	RBC-UM11PG(W)-E				
External dimensions: Main unit (Ceiling panel)*	Height	(cm)	26.8(2.7)*				
		(m)	0.27(0.03)*				
	Width	(cm)	57.5(7.0)*				
		(m)	0.58(0.7)*				
Depth	(cm)	57.5(7.0)*					
	(m)	0.58(0.7)*					
Total weight: Main unit (Ceiling panel)*		(kg)	17 (3)*				
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	325/272/222	335/275/222	349/296/236	388/325/275	448/378/307
		m ³ /s	0.15/0.13/0.11	0.16/0.13/0.11	0.16/0.14/0.11	0.18/0.15/0.13	0.21/0.18/0.14
		Motor output	60				
Connecting pipe	Gas side	(cm)	ø 0.95		ø 1.27		
	Liquid side	(cm)	ø 0.64				
	Drain port (nominal dia)	(cm)	2.5 (Polyvinyl chloride tube)				
Sound pressure level** (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 levels 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 3: Rated conditions: Cooling: Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB



Options





2-way Air Discharge Cassette Type

MMU-AP***2WH1

Slim and compact unit

Unified with the width of ceiling panel to 680mm.

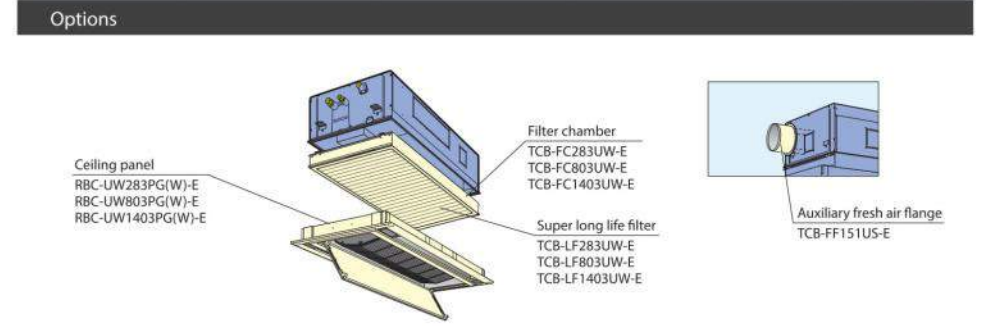
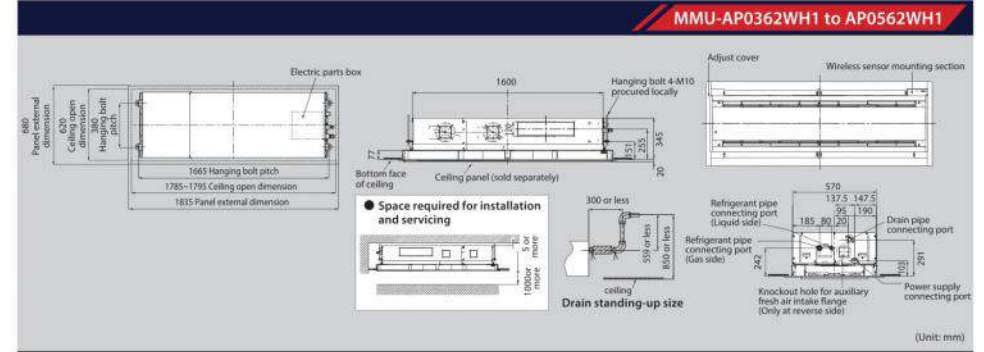
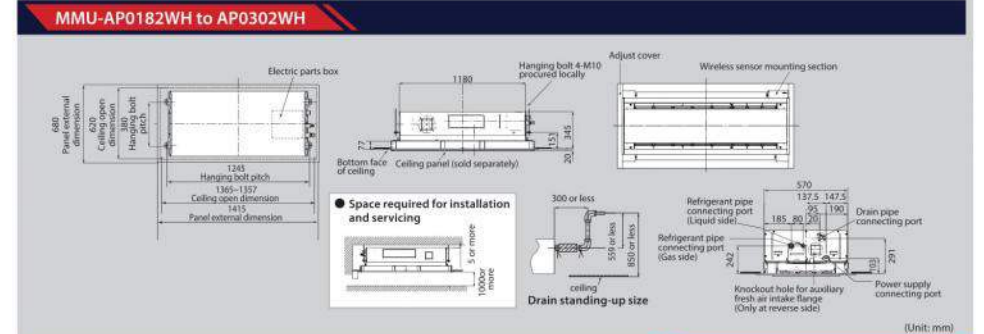
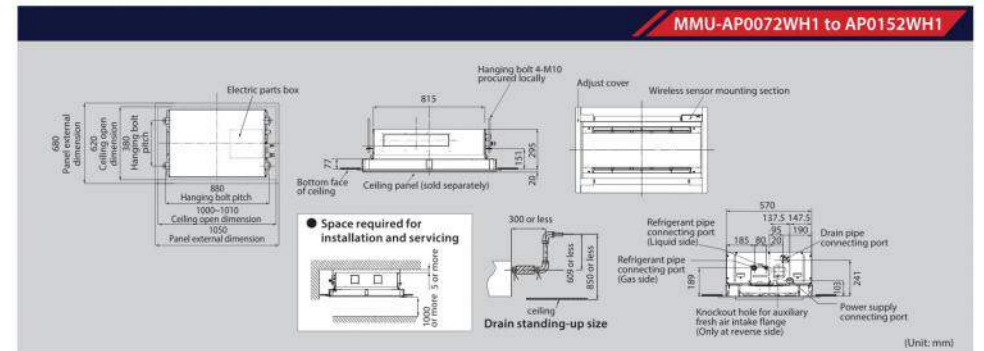
Condensate drain pump included.

Available for ceilings up to 3.8m in height. (in case of 0.8HP to 3.2HP)

Easy installation and fine adjustment using the "Adjust-Cover" function.

Technical specifications																		
Model name		MMU-	AP0072WH1	AP0092WH1	AP0122WH1	AP0152WH1	AP0182WH1	AP0242WH1	AP0272WH1	AP0302WH1	AP0362WH1	AP0482WH1	AP0562WH1					
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0					
Electrical characteristics		Power requirements	1-phase 50Hz 230V (220~240V) (Separate power supply for indoor units required.)															
Appearance (Ceiling panel)		Model	RBC-UW283PG(W)-E			RBC-UW803PG(W)-E			RBC-UW1403(W)PG-E									
External dimensions:	Height	(cm)	29.5 (2)			34.5 (2)												
		(m)	0.3 (0.02)			0.35 (0.02)												
	Width	(cm)	81.5 (1.05)			118 (1.41.5)			160 (1.83.5)									
		(m)	0.82 (1.05)			1.18 (1.42)			1.6 (1.84)									
Main unit (Ceiling panel)*	Depth	(cm)	57 (68)			57 (68)												
		(m)	0.57 (0.68)			0.57 (0.68)												
Total weight: Main unit (Ceiling panel)*		(kg)	19 (10)			26 (14)			36 (14)									
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	328/293/265		353/314/265		529/441/363		617/494/434		741/529/459		1033/843/696		1059/872/723		1200/928/776	
		(m ³ /s)	0.15/0.14/0.13		0.17/0.15/0.13		0.25/0.21/0.17		0.29/0.23/0.20		0.35/0.25/0.22		0.48/0.40/0.33		0.50/0.41/0.34		0.57/0.15/0.37	
	Motor output	(W)	20		30		40		50		70							
Connecting pipe	Gas side	(cm)	ø 0.95			ø 1.27			ø 1.59									
		(cm)	ø 0.64			ø 0.95												
	Liquid side	(cm)	ø 0.64			ø 0.95												
	Drain port (nominal dia.)	(cm)	2.5 (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 levels 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 3: 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





1-way Air Discharge Cassette Type

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

The perfect choice for hotels and reception areas

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

Silent sound design ensures the quiet required for the office.

Preparations/connection possible with a circle duct flange.

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

Able to blow air straight out.

Condensate drain pump included.

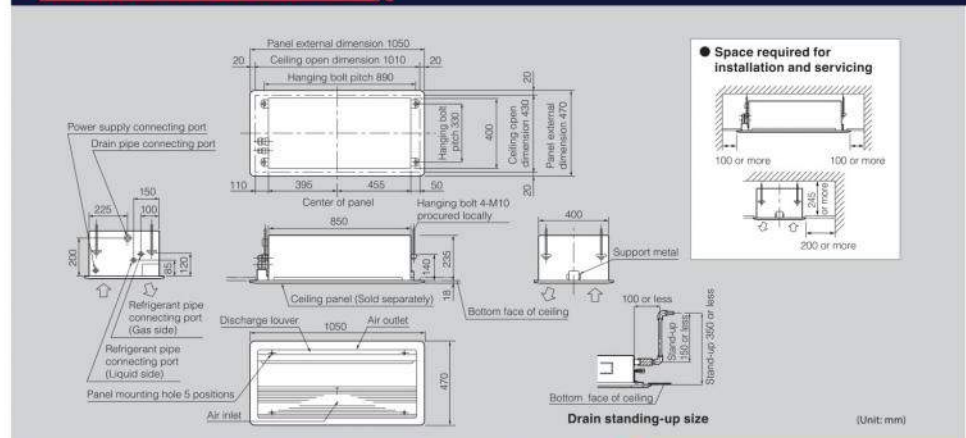
Long-life filters fitted as standard.

Technical specifications

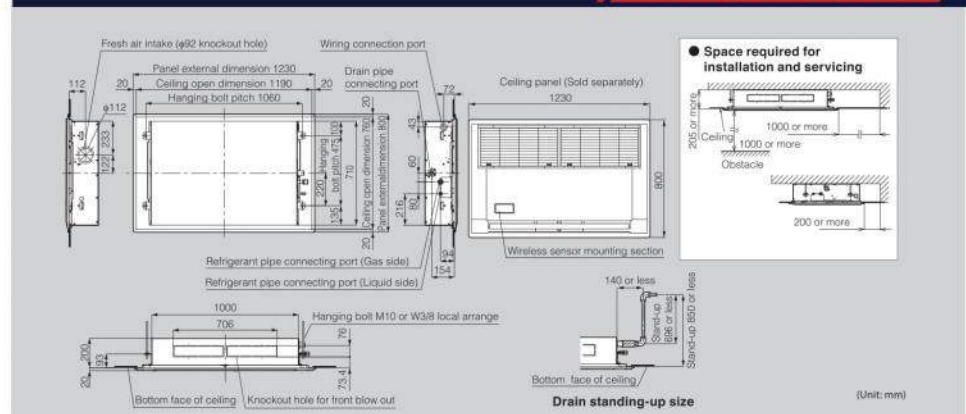
Model name	MMU-AP0074YH1-E	AP0094YH1-E	AP0124YH1-E	AP0154YH1-E	AP0184SH1-E	AP0244SH1-E
Cooling/Heating capacity*	(kW) 2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	1-phase 50Hz 230V (220-240V) / (Separate power supply for indoor units required.)					
Appearance (Ceiling panel)	Model	RBC-UY136PG		RBC-US21PGE		
External dimensions: Main unit (Ceiling panel)*	Height	(cm)	23.5(1.8)*	20(2)*		
		(m)	0.24(0.018)*	0.2(0.02)*		
	Width	(cm)	85 (105)	100 (123)		
		(m)	0.85(1.05)	1.0(1.23)		
Depth	(cm)	40(47)*	71(80)*			
	(m)	0.4(0.47)*	0.71(0.80)*			
Total weight: Main unit (Ceiling panel)*		(kg)	22 (3.5)*	21 (5.5)*		22 (5.5)*
Fan unit	Standard air flow (High/Mid/Low)	(CFM) m ³ /s	318/282/247	441/406/371	459/423/388	671/565/476
	Motor output	(W)	22	30		
	Gas side	(cm)	ø 0.95	ø 1.27		ø 1.59
Connecting pipe	Liquid side	(cm)	ø 0.64			ø 9.5
	Drain port (nominal dia.)	(cm)	2.5 (Polyvinyl chloride tube)			
Sound pressure level* (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 levels 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 3: Rated conditions. Cooling: Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB. Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB.

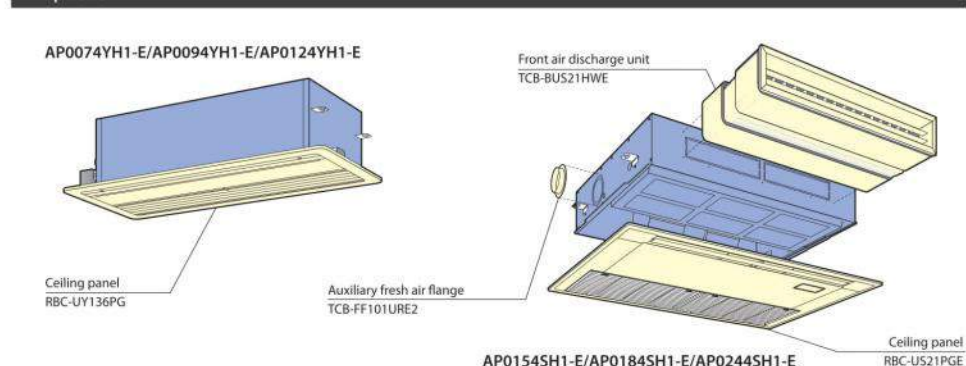
MMU-AP0074YH1-E to AP0124YH1-E

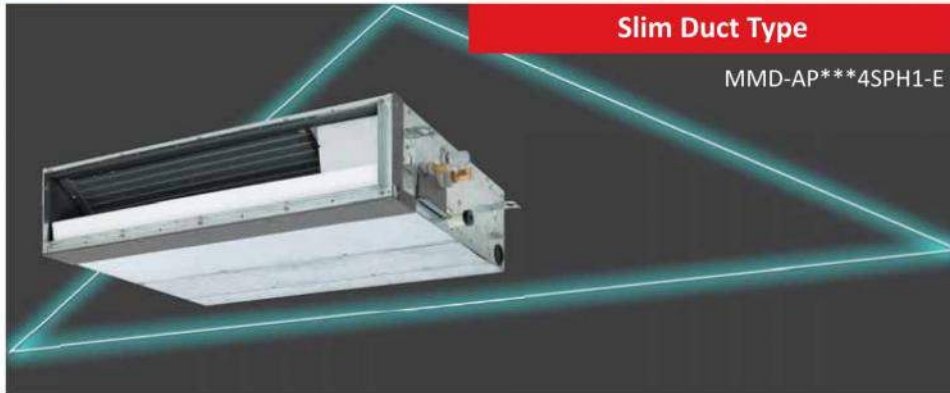


MMU-AP0154SH1-E to AP0244SH1-E



Options





Slim Duct Type

MMD-AP***4SPH1-E

Functional design

Only 210 mm in height for greater application flexibility.

4-step static pressure setup.

Concealed installation within a ceiling void.

Auxiliary fresh air intake available.

Slim & quiet

Perfect comfort throughout the room.

Can be used with any style of air diffuser.

Quiet, powerful operation.

Technical specifications

Model name		MMD-AP0074SPH1-E	AP0094SPH1-E	AP0124SPH1-E	AP0154SPH1-E	AP0184SPH1-E	AP0244SPH1-E	AP0274SPH1-E
Cooling/Heating capacity*1		(kW) 2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0
Electrical characteristics	Power supply	1-phase 50Hz 230V (220-240V) / (Separate power supply for indoor units required.)						
	Height	(cm)	21					
		(m)	0.21					
	Width	(cm)	84.5				114	
		(m)	0.85				1.14	
Depth	(cm)	64.5			65			
	(m)	0.65			0.65			
Total weight	(kg)	22		23		29		
Fan unit	Standard air flow (High/Mid/Low)	(CFM) 318/276/235	353/306/265	405/353/308	459/400/341	635/588/529		
		m ³ /s 0.15/0.13/0.11	0.17/0.14/0.13	0.19/0.17/0.15	0.22/0.19/0.16	0.30/0.28/0.25		
	Motor output	(W)	60				20	
Connecting pipe	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)	
	Gas side	(cm)	ø 0.95		ø 1.27		ø 1.59	
	Liquid side	(cm)	ø 0.64				ø 0.95	
	Drain port (nominal dia.)	(cm)	2.5 (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.

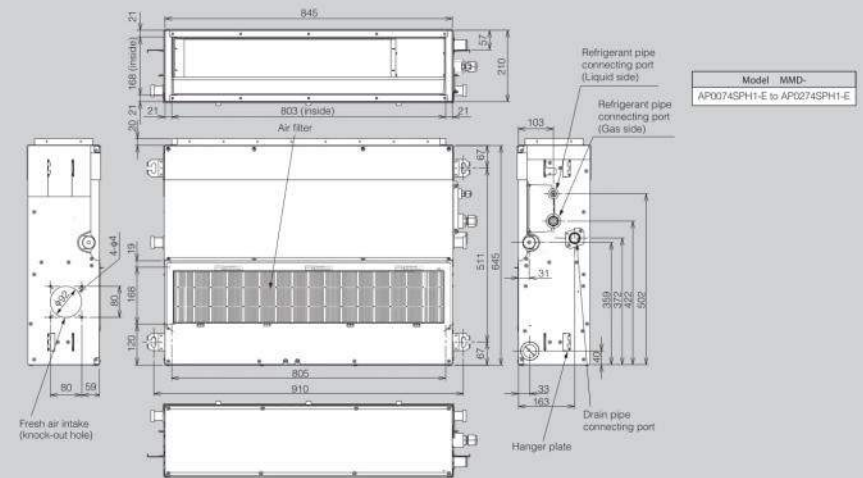
Note 2 : The sound levels are measured in an anechoic chamber in accordance with JIS B 8616.

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

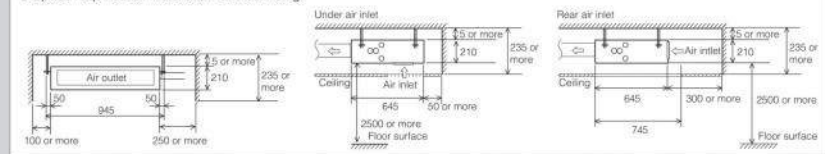
Note 3 : Rated conditions: Cooling: Indoor air temperature 28°C DB/19°C WB, Outdoor air temperature 35°C DB

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

MMD-AP0074SPH1-E to AP0274SPH1-E



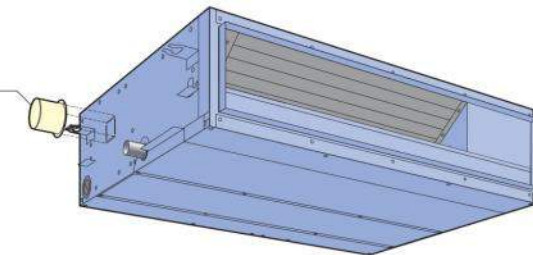
Space required for installation and servicing



(Unit: mm)

Options

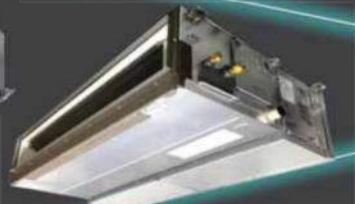
Auxiliary fresh air flange
TCB-FF101URE2



Concealed Duct High Static Pressure Type



MMD-AP***6HP-E



MMD-AP***6HP1-E

Design flexibility

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

Can be equipped with the following options:

- High-efficiency filter (65, 90)
- Drain pump kit

Construction characteristics

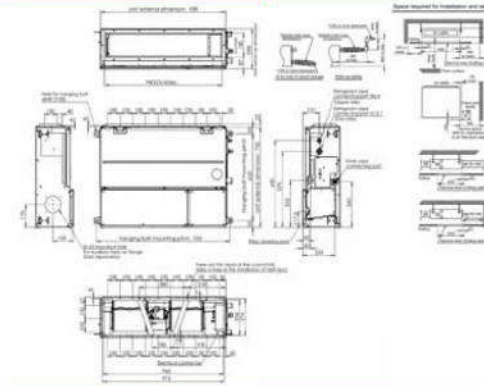
Three-stage-switchable static pressure.
The flexible duct is accessible.
Easy service and installation.
Inspection hole enables easy access and maintenance.

Technical specifications

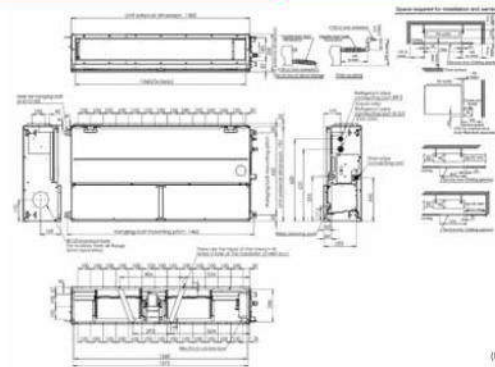
Model name		MMD-AP0186HP1-E	AP0246HP1-E	AP0276HP1-E	AP0366HP1-E	AP0486HP1-E	AP0566HP1-E	AP0726HP-E	AP0966HP-E
Cooling/Heating capacity*1		(kW) 5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0	22.4/25.0	28.0/31.5
Electrical characteristics		Power supply 1-phase 50Hz 230V (220~240V) / (Separate power supply for indoor units required.)							
External dimensions	Height	(cm)	29.8				44.8		
		(m)	0.3				0.45		
	Width	(cm)	100		140			140	
		(m)	1.0		1.4			1.40	
Depth	(cm)	75				90			
	(m)	0.75				0.90			
Total weight		(kg)	34		43			97	
Fan unit	Standard air flow (High/Mid/Low)	(CFM) 470/388/323	706/571/471	1130/918/789	1236/1024/836	1413/1200/977	2236/1883/1471	2825/2472/2060	
		(m ³ /s) 0.22/0.18/0.15	0.33/0.27/0.22	0.53/0.43/0.37	0.53/0.48/0.39	0.67/0.57/0.46	1.06/0.89/0.69	1.33/1.17/0.97	
	Motor output	(W)	250		350			250	
	External static pressure (factory setting)	(Pa)	100				150		
External static pressure		(Pa)	50-75-125-150-175-200 (7steps)				(50-83-117-150-183-217-250)7 steps		
Connecting pipe	Gas side	(cm)	ø 1.27		ø 1.59			ø 2.22	
	Liquid side	(cm)	ø 0.64		ø 0.95			ø 1.27	
	Drain port (nominal dia.)	(cm)	2.5 (Polyvinyl chloride tube)				2.5		
Sound pressure level*2 (High/Mid/Low)		(dB(A))	37 (32/30)	38 (34/31)	41 (37/34)	42 (40/35)	45 (42/37)	44 / 40 / 36	46 / 42 / 38

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 levels are measured in an anechoic chamber in accordance with JIS S 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.
Note 3: Rated conditions: Cooling: indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating: indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMD-AP0186HP1-E to AP0276HP1-E

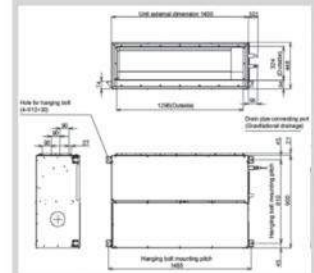


MMD-AP0366HP1-E to AP0566HP1-E

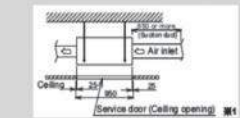
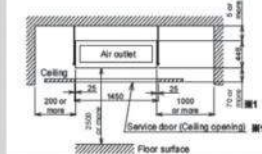


(Unit: mm)

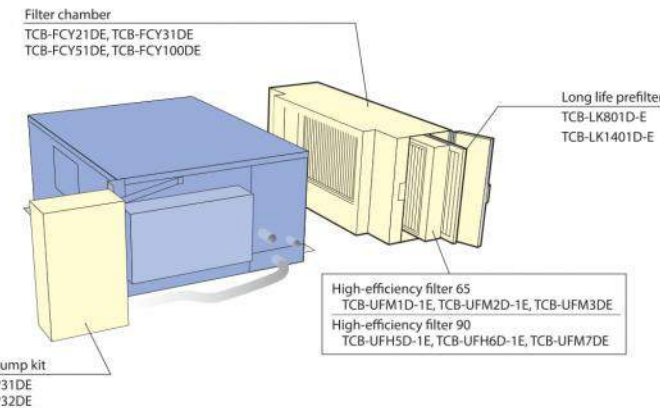
MMD-AP0726HP-E, AP0966HP-E

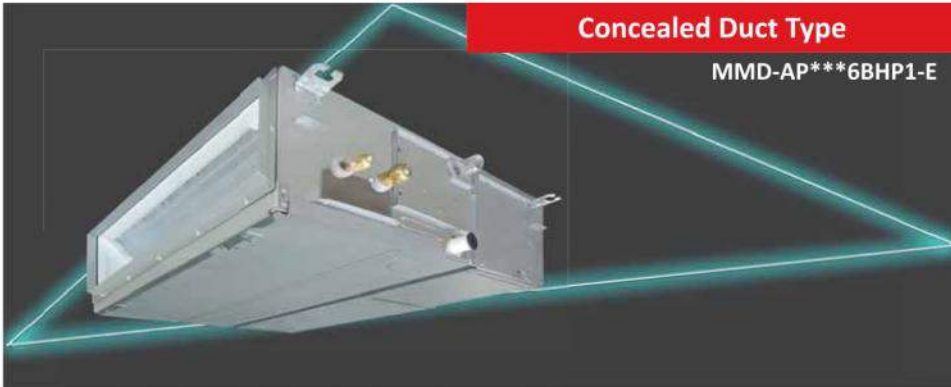


Space required for installation and servicing



Options





Concealed Duct Type

MMD-AP***6BHP1-E

High static pressure

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

High-lift drain pump

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

Technical specifications

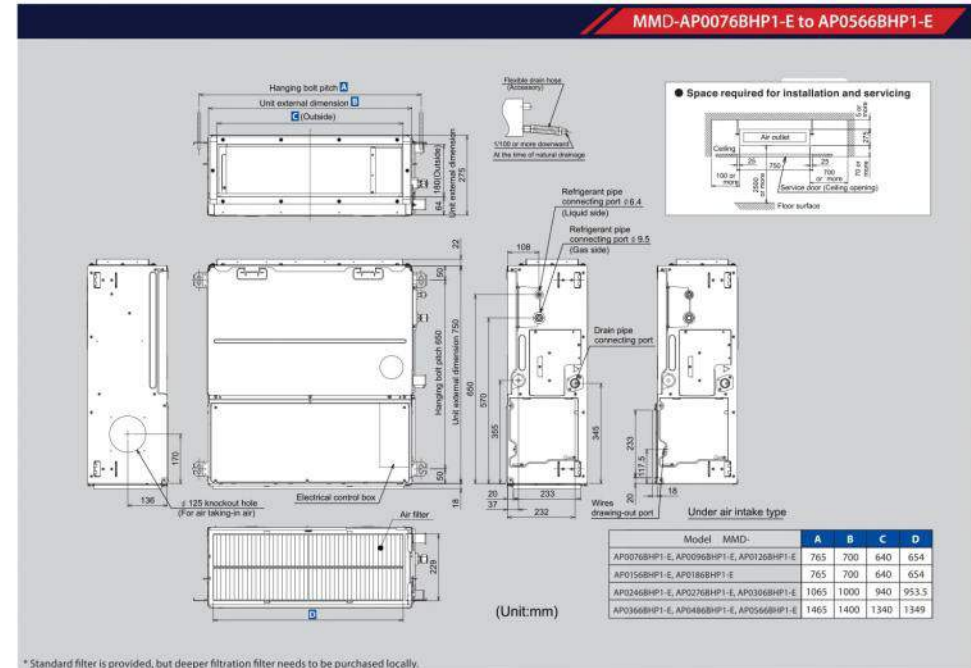
Model name	MMD-	AP0076BHP1-E	AP0096BHP1-E	AP0126BHP1-E	AP0156BHP1-E	AP0186BHP1-E	AP0246BHP1-E	AP0276BHP1-E	AP0306BHP1-E	AP0366BHP1-E	AP0486BHP1-E	AP0566BHP1-E	
Cooling/Heating capacity*1	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0	
Electrical characteristics	Power supply	1-phase 50Hz 230V (220-240V) / (Separate power supply for indoor units required.)											
	Height	(cm)	27.5										
		(m)	0.28										
	Width	(cm)	70	70	100	140							
(m)		0.7	0.7	1.0	1.4								
Depth	(cm)	75											
	(m)	0.75											
Total weight	(kg)	23			30			40					
	Standard air flow (High/Mid/Low)	(CFM) m ³ /s	318/265/211 0.15/0.13/0.10	335/282/229 0.16/0.13/0.11	470/388/318 0.22/0.18/0.15	706/582/512 0.33/0.27/0.24	742/653/547 0.35/0.31/0.26	1130/953/812 0.53/0.45/0.38	1236/1024/862 0.58/0.48/0.42				
Fan unit	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 (cm)	ø 0.95		ø 1.27		ø 1.59							
	Liquid side (cm)	ø 0.64										ø 0.95	
	Drain port (nominal dia.) (cm)	2.5 (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 levels 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.

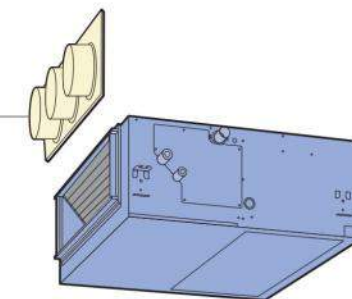
Note 3: Rated conditions: Cooling: Indoor air temperature 29°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

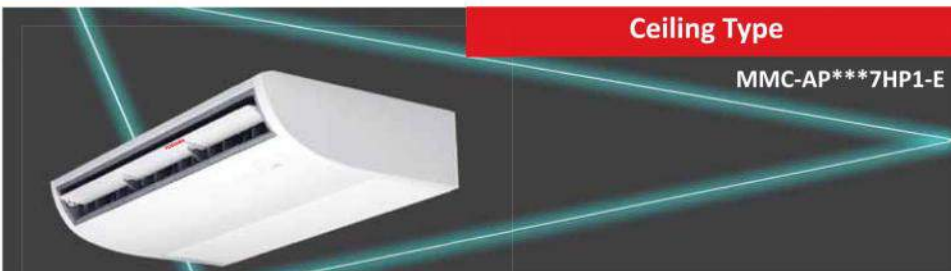


Options

Spigot shaped flange

- TCB-SF56C6BPE
- TCB-SF80C6BPE
- TCB-SF160C6BPE





Ceiling Type

MMC-AP***7HP1-E

Smooth Curve For Pliant Shape

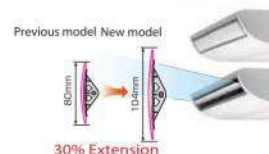
All-new chassis and new rounded design. These new models have been developed in response to customers' needs for ceiling units that better match their room interiors.

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 reach up to 4.3 metre.

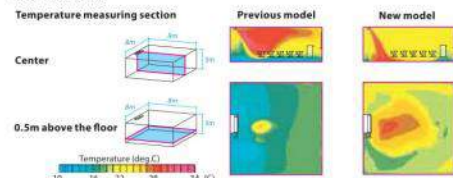
New Designed Wide Flap

The new air outlet 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-	AP0157HP1-E	AP0187HP1-E	AP0247HP1-E	AP0277HP1-E	AP0367HP1-E	AP0487HP1-E	AP0567HP1-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 supply	1-phase 50Hz 230V (220~240V) / (Separate power supply for indoor units required.)						
External dimensions	Height	(cm)	23.5					
		(m)	0.235					
	Width	(cm)	95	127			159	
		(m)	0.95	1.27			1.59	
Depth	(cm)	69						
	(m)	0.69						
Total weight	(kg)	24		30			37	
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	494/406/318	565/424/318	848/600/441	1095/795/600	1095/900/706	1200/971/742
		(m ³ /s)	0.58/0.48/0.42	0.16/0.13/0.11	0.22/0.18/0.15	0.33/0.27/0.24	0.35/0.31/0.26	0.53/0.45/0.38
Connecting pipe	Motor	(W)	94					
	Gas side	(cm)	ø 1.27		ø 1.59			
	Liquid side	(cm)	ø 0.64					
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
		Drain port (nominal dia.)	2.0 (Polyvinyl chloride tube)					

Note 1: The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 3m of main piping and 2.5 m of branch piping connected with 0 m height.

Note 2: The sound levels 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 3: 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.

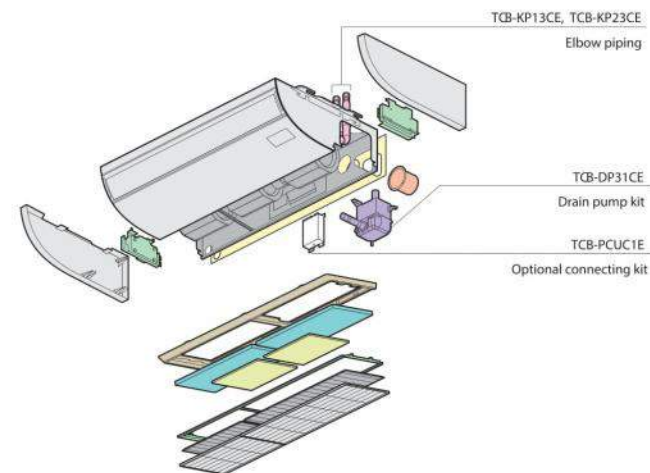
MMC-AP0157HP1-E to AP0567HP1-E

Model	MMC-	A	B
AP0157HP1-E, AP0187HP1-E		906	950
AP0247HP1-E, AP0277HP1-E		1223	1269
AP0367HP1-E, AP0487HP1-E, AP0567HP1-E		1540	1586

● Space required for installation and servicing

Unit: 250 or more (Front side to be positioned) horizontally

Options



High-wall Type

MMK-AP***6HP1-IN



Elegant and Slim

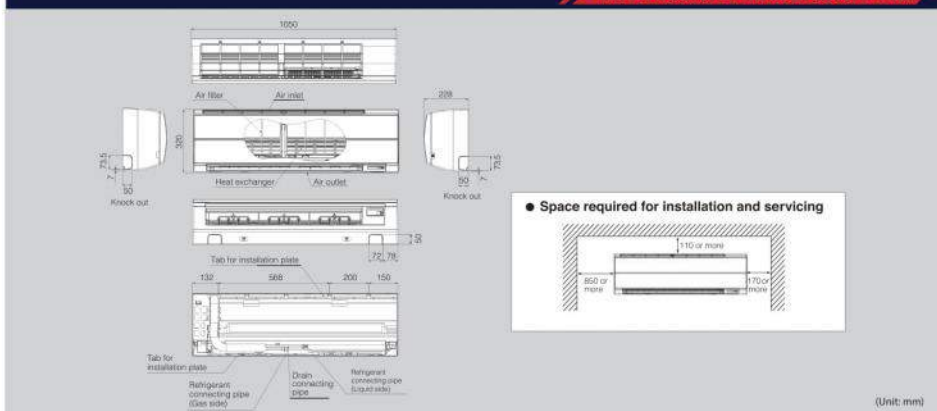
This classic high-wall is elegant and slim; it can easily blend in with any room interior.

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



Remote controller

MMK-AP0076HP1-IN to AP0246HP1-IN



Technical specifications

Model name	MMK-	AP0076HP1-IN	AP0096HP1-IN	AP0126HP1-IN	AP0156HP1-IN	AP0186HP1-IN	AP0246HP1-IN
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.)					
External dimensions	Height	(cm)	32				
		(m)	0.32				
	Width	(cm)	105				
		(m)	1.05				
Depth	(cm)	22.9					
	(m)	0.23					
Total weight	(kg)	15					
Fan unit	Standard air flow (High/Mid/Low)	CFM	335/265/229	353/282/229	494/388/318	600/441/335	
		m ³ /s	0.16/0.13/0.11	0.17/0.13/0.11	0.23/0.18/0.15	0.28/0.21/0.16	
Connecting pipe	Motor output	(W)	30				
	Gas side	(cm)	ø 0.95		ø 1.27		ø 1.59
	Liquid side	(cm)	ø 0.64				
Sound pressure level*2	(H/M/L)	(dB(A))	35/31/28	37/32/28	41/36/33	46/39/34	
			1.6 (polyvinyl chloride tube)				

* Figures in parentheses are for ceiling panels.

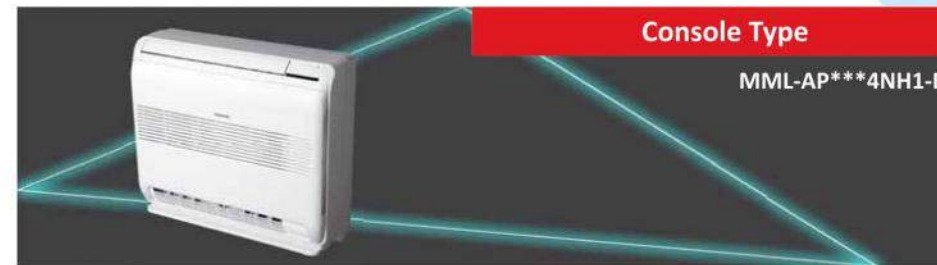
*1: The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height. Rated conditions Cooling: indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

Heating: indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

*2: The sound levels 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.

Console Type

MML-AP***4NH1-E



Features

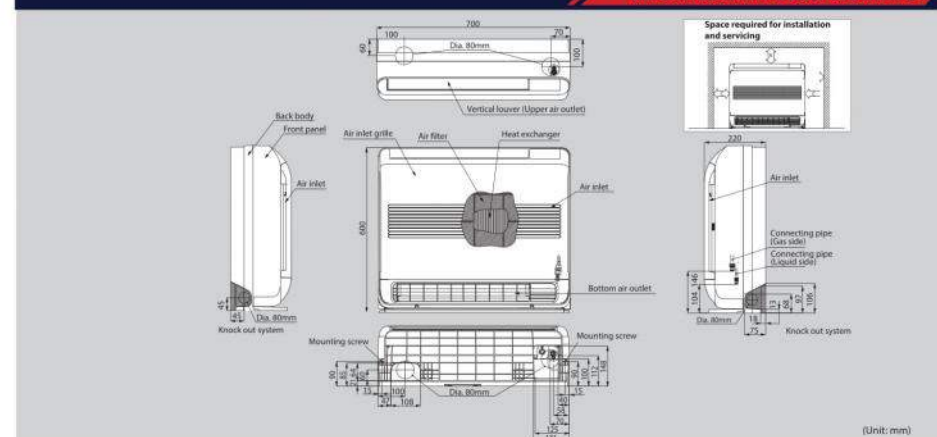
Elegant & simple design makes this unit a perfect fit for shops, office buildings, and luxury apartments. Bottom flow functionality ensures comfortable air bi-flow for an advantage in heating and floor warming.

Multi-function operation is convenient, making adjustments by the user possible, using the wireless remote controller.



Remote controller

MML-AP0074NH1-E to AP0184NH1-E



Technical specifications

Model name	MML-	AP0074NH1-E	AP0094NH1-E	AP0124NH1-E	AP0154NH1-E	AP0184NH1-E
Cooling/Heating capacity*1	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)				
External dimensions	Height	(cm)	60			
		(m)	0.6			
	Width	(cm)	70			
		(m)	0.7			
Depth	(cm)	22				
	(m)	0.22				
Total weight	(kg)	17				
Fan unit	Standard air flow (High/Mid/Low)	CFM	300/215/166	325/240/191	367/275/226	427/310/250
		m ³ /s	0.14/0.10/0.08	0.15/0.11/0.09	0.17/0.13/0.11	0.20/0.15/0.12
	Motor output	(W)	41			
Connecting pipe	Gas side	(cm)	ø 0.95			ø 1.27
	Liquid side	(cm)	ø 0.64			
	Drain port (nominal dia.)	(cm)	1.6 (Polyvinyl chloride tube)			
Sound pressure level*2	(H/M/L)	(dB(A))	38/32/26	40/34/29	43/37/31	47/40/34
			1.6 (Polyvinyl chloride tube)			

* Figures in parentheses are for ceiling panels.

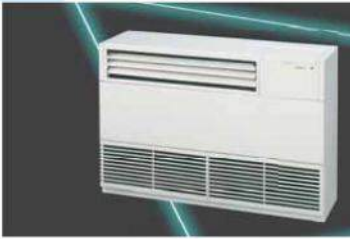
*1: The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height. Rated conditions Cooling: indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

Heating: indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

*2: The sound levels 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.

Floor Standing Cabinet Type

MML-AP***4H1-E



Slim and Compact Design

Under-window mounting does not block lighting.

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

Slim and Compact Design

Distribution can be reversed to suit occupant preference.

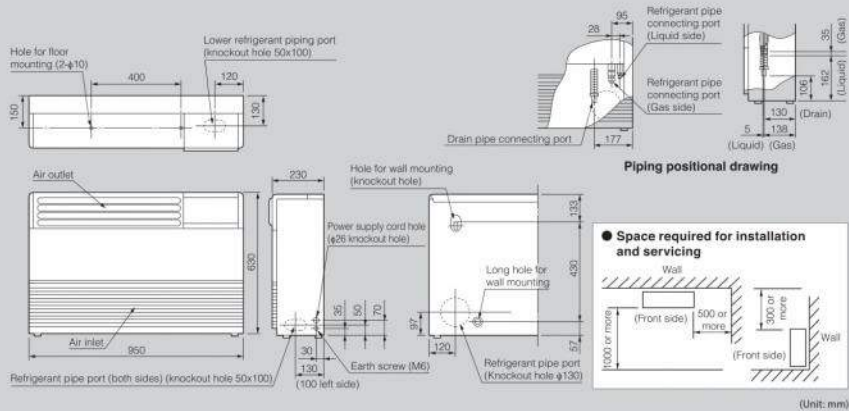
Air blown from front panel (factory default)



Air blown from top



MML-AP0074H1-E to AP0244H1-E



Technical specifications

Model name	MML-	AP0074H1-E	AP0094H1-E	AP0124H1-E	AP0154H1-E	AP0184H1-E	AP0244H1-E	
Cooling/Heating capacity*	(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	phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)						
External dimensions	Height	(cm)	63					
		(m)	0.63					
	Width	(cm)	95					
		(m)	0.95					
Depth	(cm)	23						
	(m)	0.23						
Total weight	(kg)	37					40	
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	282/247/212		529/459/382		635/547/450	
		m ³ /s	0.13/0.12/0.10		0.25/0.22/0.18		0.30/0.26/0.21	
	Motor output	(W)	45					70
Connecting pipe	Gas side	(cm)	ø 0.95		ø 1.27		ø 1.59	
	Liquid side	(cm)	ø 0.64				ø 0.59	
	Drain port (nominal dia.)	(cm)	2.0 (Polyvinyl chloride tube)					
Sound pressure level** (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.

Note 2: The sound levels 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 3: Rated conditions Cooling: Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Floor Standing Concealed Type

MML-AP***4BH1-E

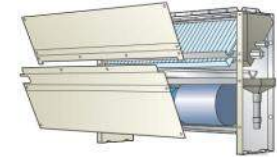


Cool air makes for a pleasant indoor environment

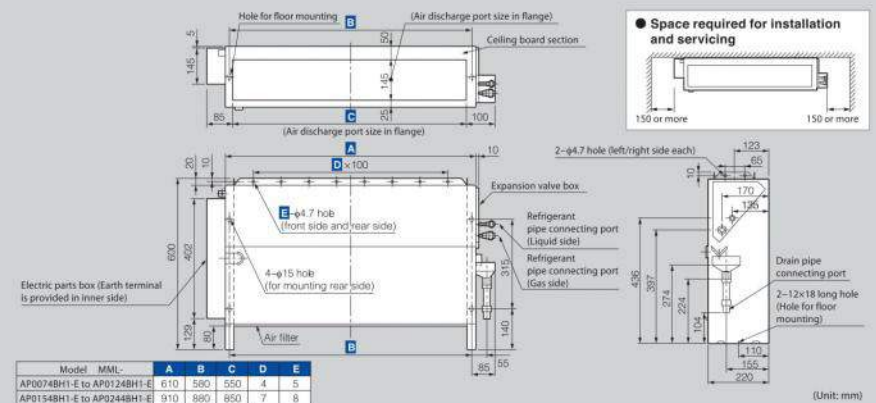
Install it under a window and air-condition any room effectively.

Easy maintenance

Simplified design of fan and drainage pipe eases maintenance.



MML-AP0074BH1-E to AP0244BH1-E



Technical specifications

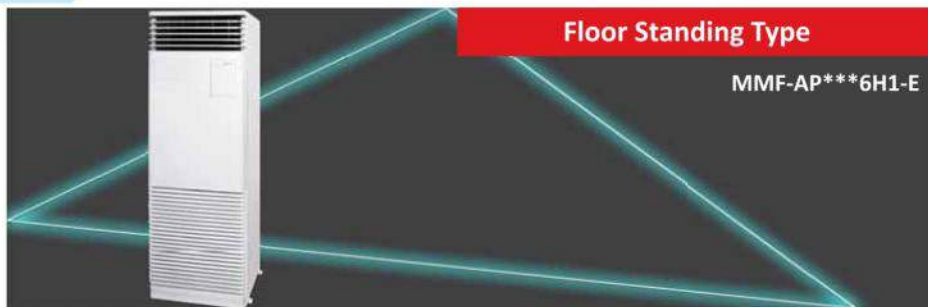
Model name	MML-	AP0074BH1-E	AP0094BH1-E	AP0124BH1-E	AP0154BH1-E	AP0184BH1-E	AP0244BH1-E	
Cooling/Heating capacity*	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	
Electrical characteristics	Power requirements	phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)						
External dimensions	Height	(cm)	60					
		(m)	0.6					
	Width	(cm)	74.5		104.5			
		(m)	0.75		1.05			
Depth	(cm)	22						
	(m)	0.22						
Total weight	(kg)	21		29				
Fan unit	Standard air flow (High/Mid/Low)	(CFM)	270/235/176		435/353/288		559/465/376	
		m ³ /s	0.13/0.11/0.08		0.21/0.17/0.14		0.26/0.22/0.18	
	Motor output	(W)	19					70
Connecting pipe	Gas side	(cm)	ø 0.95		ø 1.27		ø 1.59	
	Liquid side	(cm)	ø 0.64					
	Drain port (nominal dia.)	(cm)	2.0 (Polyvinyl chloride tube)					
Sound pressure level** (High/Mid/Low)	(dB(A))	36/34/3						2/37/33

Note 1: The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.

Note 2: The sound levels 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 3: Rated conditions Cooling: Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB



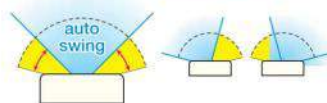
Floor Standing Type

MMF-AP***6H1-E

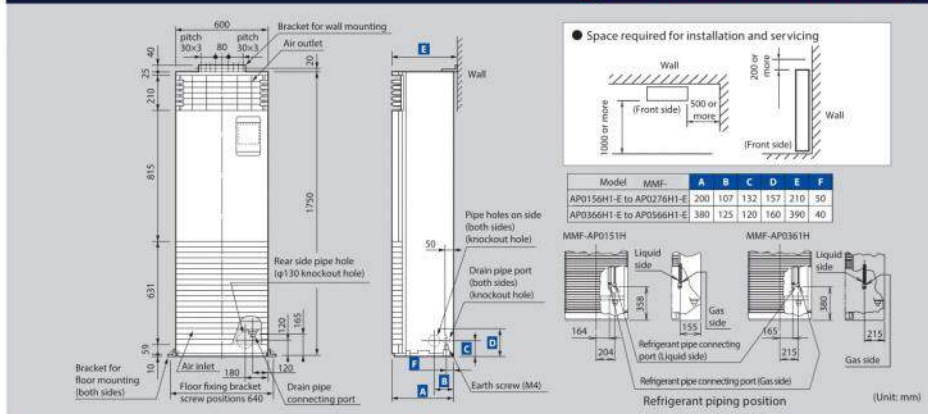
Thin profile suits interior design
Slender, space-saving type (1.7–6.0HP)

Wide outlet

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



MMF-AP0156H1-E to AP0566H1-E



Technical specifications

Model name	MMF-	AP0156H1-E	AP0186H1-E	AP0246H1-E	AP0276H1-E	AP0366H1-E	AP0486H1-E	AP0566H1-E
Cooling/Heating capacity*1	(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power requirements	phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)						
External dimensions	Height	(cm)	175					
		(m)	1.75					
	Width	(cm)	60				39	
(m)		0.6				0.39		
Depth	(cm)	21		39				
	(m)	0.21		0.39				
Total weight	(kg)	46		47		62		
Fan unit	Standard air flow	(CFM)	529/459/388		706/582/494		1130/953/812	
	(High/Mid/Low)	m ³ /s	0.25/0.22/0.18		0.33/0.27/0.23		0.53/0.45/0.38	
	Motor output	(W)	62		62		109	
Connecting pipe	Gas side	(cm)	ø 1.27		ø 1.27			
	Liquid side	(cm)	ø 0.64		ø 0.95			
Sound pressure level*2	(High/Mid/Low)	(dB(A))	46/42/37		49/45/39		51/46/41	
	(High/Mid/Low)	(dB(A))	46/42/37		49/45/39		51/46/41	

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 levels 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 3: 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 Duct Type

MMF-AP***DH-V



Higher static pressure

Available in a capacity range of

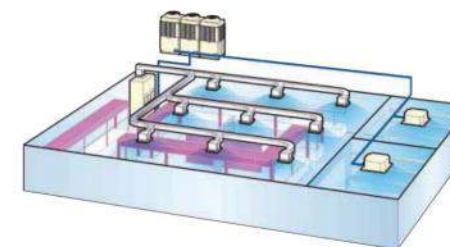
8 - 20 HP

Standard filter in-built

Even Air-Conditioning of large spaces using duct

A maximum external static pressure of about 650Pa* can be provided. Superior air flow distribution is realized by optimum arrangement of air outlet when the ducts are installed.

*When 16HP is modified (optional order) to change the fan rotation speed and increase the fan motor power.



Wired remote controller
(Option)
RBC-AMT32E

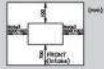
Technical specifications

Model name	MMF-	AP0724DH-V	AP0964DH-V	AP1444DH-V	AP1924DH-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 50Hz 400V					
External dimensions	Height	(cm)	182		187		
		(m)	1.82		1.87		
	Width	(cm)	89		130		
(m)		0.89		1.30			
Depth	(cm)	54		76			
	(m)	0.54		0.76			
Total weight	(kg)	170		280	290		
Fan unit	Air flow	(High/Mid/Low)	CFM	2543/2119/1695	2966/2472/1978	5085/4238/3390	5933/4944/3955
			m ³ /s	1.2 / 1.0 / 0.8	1.4 / 1.2 / 0.9	2.4 / 2.0 / 1.6	2.8 / 2.3 / 1.9
	Motor output	(W)	1500		2200	3700	
Connecting pipe	Gas side	(cm)	ø 2.22		ø 2.86		
	Liquid side	(cm)	ø 1.27		ø 1.59		
	Drain port (nominal dia.)	(cm)	2.5 (Both sides of male screw)				
Sound pressure level*2	(dB(A))	56/54	58/56	61/63	65/63		

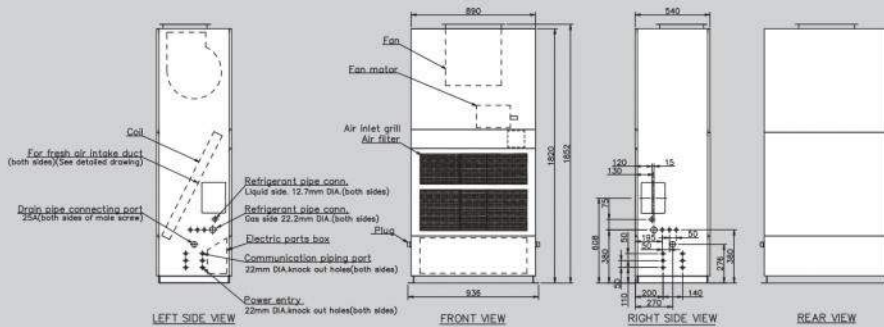
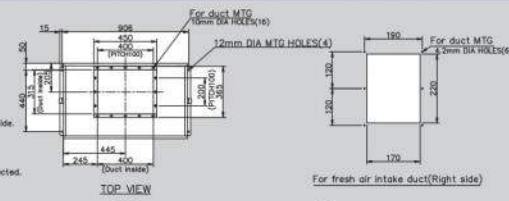
* Figures in parentheses are for ceiling panels.
*1: The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.
Rated conditions: Cooling: Indoor air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

Technical specifications

Note 1. Provide enough space for servicing around the unit as shown below.



- At the time of factory shipments, drain piping serves as right-hand side. If you want to change the drain pipe on the left side, please change to the opposite side of the plug of the site.
*PT25A socket is included in the unit.
- Please Allow clearance of 500mm on the side of the pipe connection. Please Allow clearance of 100mm on the side of the pipe is not connected.



Floor Standing Direct Type

MMF-AP ***3H-VA



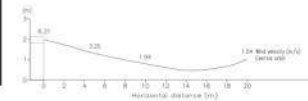
High static pressure

Available in a capacity range

of 8 - 20 HP.

Air flow distance up to about 30 m

The core air flow velocity of 0.3 m/s is up to 30 m from the unit. Air circulates far distances. Optimum for air conditioning large spaces.



Example: MMF-AP1923DH-V

Standard filter in-built

Can cover long horizontal distance for air throw.

Frame + panel unit structure

The frame-mounted panel structure allows easy removal of the panel.

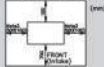
The fan section is extractable for easy maintenance of the fan unit area.



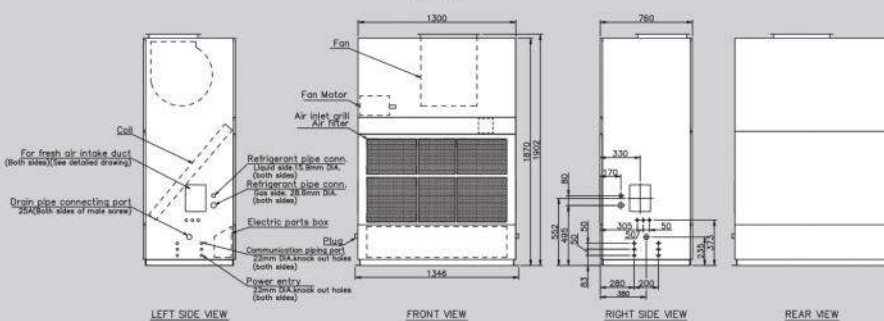
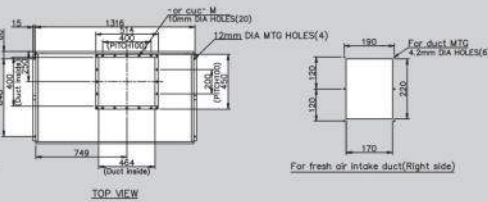
Wired remote controller (Option)
RBC-AMT32E

MMF-AP1443DH-V, MMF-AP1923DH-V

Note 1. Provide enough space for servicing around the unit as shown below.



- At the time of factory shipments, drain piping serves as right-hand side. If you want to change the drain pipe on the left side, please change to the opposite side of the plug of the site.
*PT25A socket is included in the unit.
- Please Allow clearance of 500mm on the side of the pipe connection. Please Allow clearance of 100mm on the side of the pipe is not connected.



Technical specifications

Model name	MMF-	AP0724H-VA	AP00964H-VA	AP1444H-VA	AP1924H-VA	
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 50Hz 400V				
External dimensions	Height	(cm)	213		228	
		(m)	2.13		2.28	
	Width	(cm)	89		130	
(m)		0.89		1.30		
Depth	(cm)	54		76		
	(m)	0.54		0.76		
Total weight	(kg)	180		320		
Fan unit	Air flow (High/Mid/Low)	CFM	2543/2119/1695	2966/2472/1978	5085/4238/3390	5933/4944/3955
		m ³ /s	1.2 / 1.0 / 0.8	1.4 / 1.2 / 0.9	2.4 / 2.0 / 1.6	2.8 / 2.3 / 1.9
	Motor output	(W)	750	1500		2200
Connecting pipe	Gas side	(cm)		ø 2.22		ø 2.86
	Liquid side	(cm)		ø 1.27		ø 1.59
	Drain port (nominal dia.)	(cm)	2.5 (Both sides of male screw)			
Sound pressure level*2 (H/L)	(dB(A))	62		64		66

* Figures in parentheses are for ceiling panels.

*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. 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.

*2: The sound levels 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.

Fresh Air Intake Indoor Unit Type

MMD-AP***HFE

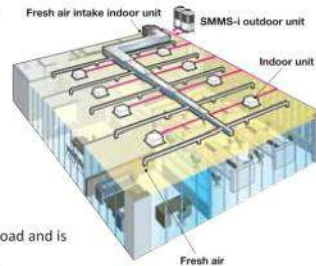


Air controller for fresh-air intake

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.

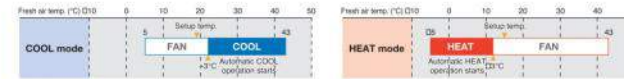
Fresh-air intake often influences the system, rendering normal control of the air conditioner difficult, or placing large loads on the system and its cooling performance.
Therefore it is frequently adopted to handle the fresh air to a certain condition before the fresh air will enter in the main air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

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.



Use Conditions

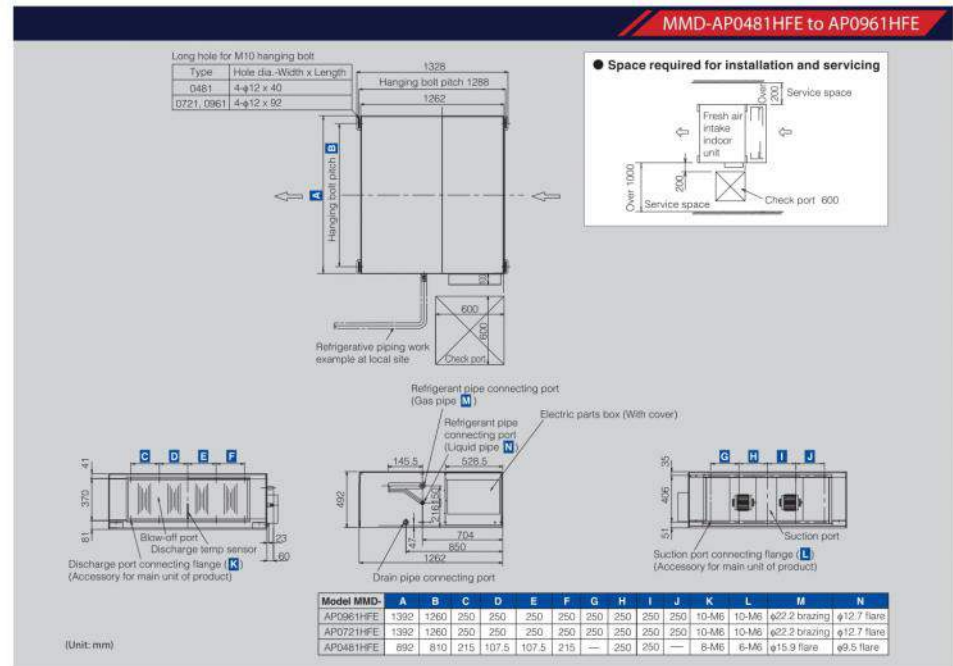
- In COOL mode, if temperature of the fresh air is below the setup temp. of +3°C, FAN status is automatically made. When temperature of the fresh air is below 19°C, FAN status is also made regardless of the setup temperature.
- In HEAT mode, if temperature of the fresh air is above the setup temp. -3°C,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



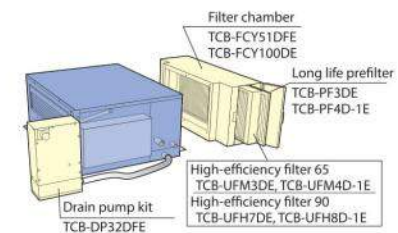
Operable mode and discharge temperature setup range

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



Options



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	1-phase 50 Hz 230 V (220-240 V)/60 Hz 220 V			
		Power consumption	(kW)	0.28/0.34	0.45/0.55	
External dimensions		Main unit	Height	(cm)	49.2	
				(m)	0.49	
			Width	(cm)	89.2	139.2
				(m)	0.89	1.39
Depth	(cm)		126.2			
	(m)		1.26			
Total weight		(kg)	93	120	120	
Fan unit		Standard air flow (High/Mid/Low)	(CFM)	635	988	
			m ³ /s	0.30	0.47	
		Motor output	(kW)	0.160	0.160x2	
Connecting pipe		External static pressure 50 Hz/60 Hz	(Pa)	170-210-230 / 115-215-260	140-165-180 / 150-210-235	
		Air flow limit Lower limit/Upper limit	(CFM)	445/699	692/1087	
Sound pressure level (Note 2) (High/Med./Low)		Gas side	(cm)	ø 1.59	ø 2.22	
		Liquid side	(cm)	ø 0.95	ø 1.27	
		Drain port	(cm)		2.5	
Operation range		Cooling (Note 3)	(°C)	5 - 43	46/45/44	
		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.



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 the 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.



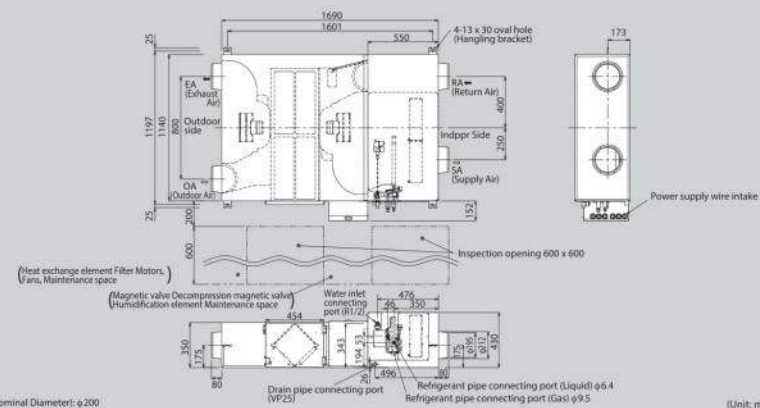
Remote controller NRC-Q1HE

Technical specifications

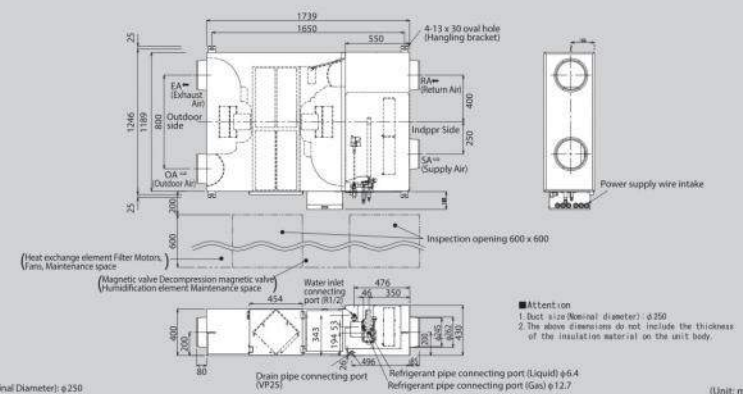
Model name		MMD-	VN502HEXE	VN802HEXE	VN1002HEXE	VN1002HEXE2		
Fresh air conditioning load	Cooling (*1)	(kW)	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)	8.25 (2.32)		
	Heating (*1)	(kW)	5.53 (2.33)	8.61 (3.61)	10.92(4.32)	10.92 (4.32)		
Power supply			1-phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)		1-phase 50Hz 230V (220V-240V) (Separate power supply for indoor units is required.)	(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	504/504	792/792		936	
			m ³ /s	0.14/0.14	0.22/0.22		0.26	
		Mid	m ³ /h	504/504	792/792		936	
			m ³ /s	0.14/0.14	0.22/0.22		0.26	
		Low	m ³ /h	432/396	648/612	828		792
			m ³ /s	0.12/0.11	0.18/0.17	0.23		0.22
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	(cm)					43	
		(m)					0.43	
	Width	(cm)	114			118.9		
		(m)	1.14			1.19		
	Depth	(cm)	169			173.9		
		(m)	1.69			1.74		
Total weight	(kg)	84	100	101		103		
Connecting piping	Gas side	(cm)	ø 0.95				ø 1.27	
	Liquid side	(cm)					ø 0.64	
Drain port (Nominal dia.)	(cm)					2.5(Polyvinyl chloride tube)		

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

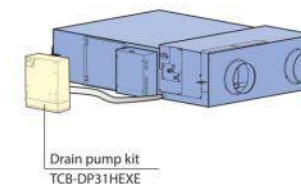
MMD-VN502HEXE



MMD-VN802HEXE to VN1002HEXE/2



Options



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.

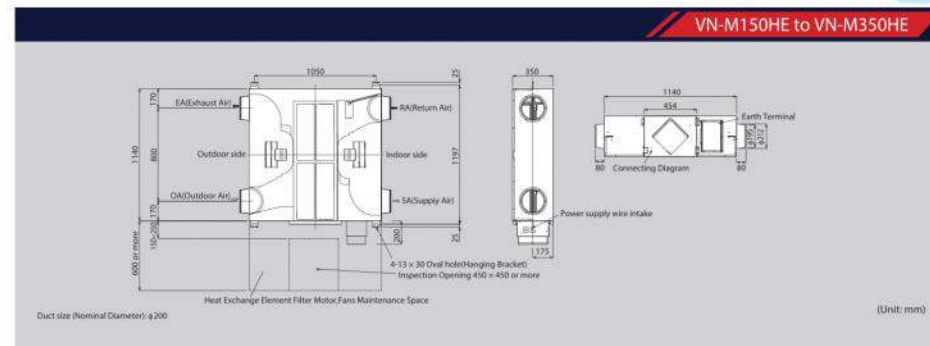


Remote controller NRC-01HE

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

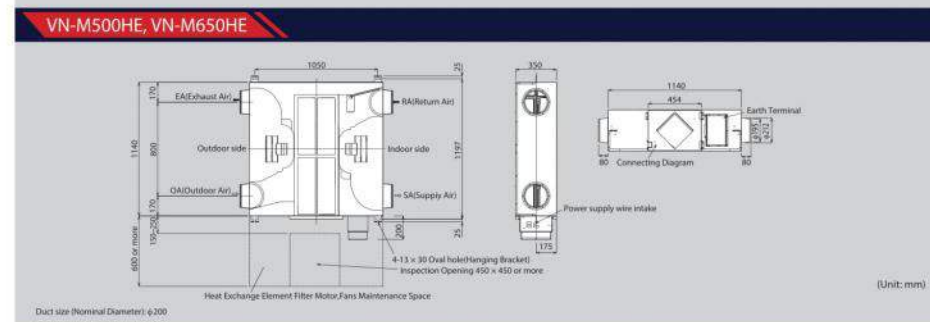
Technical specifications											
Model name	VN-	M150HE	M250HE	M350HE	M500HE	M650HE	M800HE	M1000HE	M1500HE	M2000HE	
Power supply (V)	Fan speed 1-phase 50Hz 230V (220-240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)										
Power consumption 50Hz/60Hz (W)	(Extra high)	68-78/76	123-138/131	165-182/209	214-238/260	262-290/307	360-383/446	532-569/622	751-786/928	1064-1154/1294	
	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	1032-1060/1220	
	Low	42-47/45	52-59/54	82-88/94	128-142/144	178-191/206	286-300/333	353-370/411	570-607/660	702-742/818	
Air volume (m ³ /s) / (m ³ /h)	(Extra high)	0.04/144	0.07/252	0.10/360	0.14/504	0.18/648	0.22/792	0.28/1008	0.42/1512	0.56/2016	
	High	0.04/144	0.07/252	0.10/360	0.14/504	0.18/648	0.22/792	0.28/1008	0.42/1512	0.56/2016	
	Low	0.03/108	0.04/144	0.06/216	0.11/396	0.14/504	0.19/664	0.21/756	0.33/1188	0.39/1404	
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
	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
Dimensions (Length x Width x Height) (m)	Around unit	0.9 x 0.9 x 0.29									
	Outdoor Air (OA)	1.14 x 1.14 x 0.35									
Dimensions (Length x Width x Height) (cm)	Around unit	900 x 900 x 290									
	Outdoor Air (OA)	1140 x 1140 x 350									
Weight (kg)		36	38	53	70	143					
Duct diameter (cm)		10	15	20	25	inside: 25, outside: 28.3 x 73					
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 above 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



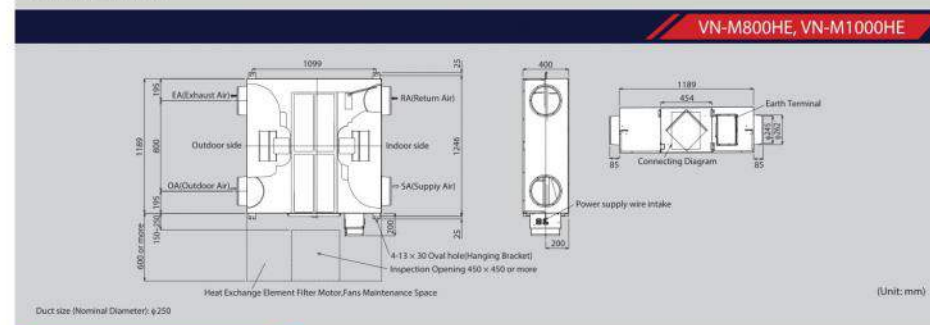
Duct size (Nominal Diameter): φ200

(Unit: mm)



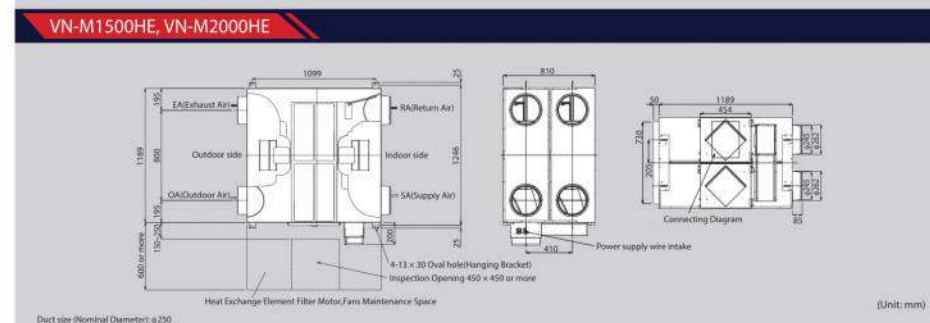
Duct size (Nominal Diameter): φ200

(Unit: mm)



Duct size (Nominal Diameter): φ250

(Unit: mm)



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-U31PGW-E	MMU-AP***4HP1-E	Required accessory	Use with TCB-GFC1602UE	
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)		
	Fresh air filter chamber	TCB-GFC1602UE		For fresh air inlet box		
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)		
	Spacer for height	TCB-SF1602UE		Height=50 mm		
Compact 4-way cassette type	Air discharge direction kit	TCB-BC1602UE	MMU-AP***4MH1-E	Air direction change by cutting off air discharge port (3 pcs.)		
	Ceiling panel	RBC-U31PGW-E		Required accessory		
2-way air discharge cassette type	Auxiliary fresh air flange	TCB-FF101URE2	MMU-AP0072 to 0152WH1	For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)		
	Ceiling panel	RBC-UW283PGW-E		Required accessory		
		RBC-UW803PGW-E		MMU-AP0182 to 0302WH1		
		RBC-UW1403PGW-E		MMU-AP0362/0482/0562WH1		
	Super long life filter	TCB-LF283UW-E		MMU-AP0072 to 0152WH1	Dust collecting effect: 50% (Weight method)	Use with TCB-FC283UW-E
		TCB-LF803UW-E		MMU-AP0182 to 0302WH1		Use with TCB-FC803UW-E
		TCB-LF1403UW-E		MMU-AP0362/0482/0562WH1		Use with TCB-FC1403UW-E
		TCB-LF283UW-E		MMU-AP0072 to 0152WH1		
	Filter chamber	TCB-FC803UW-E		MMU-AP0182 to 0302WH1	For super long life filter	
		TCB-FC1403UW-E		MMU-AP0362/0482/0562WH1		
1-way air discharge cassette type	Auxiliary fresh air flange	TCB-FF151US-E	MMU-AP***2WH1	For fresh air intake by using the knockout hole of indoor unit.		
	Ceiling panel	RBC-UV136PG	MMU-AP***4YH1-E	Required accessory		
	Front air discharge unit	RBC-US21PGE		Required accessory		
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SH1-E	For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)		
		TCB-FF101URE2		For fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)		
Concealed duct type	Spigot shaped flange	TCB-SF50C8BP-E	MMD-AP0076 to 0186BHP1-E			
		TCB-SF80C8BP-E	MMD-AP0246/0276/0306BHP1-E			
		TCB-SF160C8BP-E	MMD-AP0366/0486/0566BHP1-E			
Concealed duct high static pressure type	Long life filter kit	TCB-LK801D-E	MMD-AP0186/0246/0276HP1-E			
	Auxiliary fresh air flange	TCB-LK1401D-E	MMD-AP0366/0486/0566HP1-E			
	Long life filter kit	TCB-LK2801DP-E	MMD-AP***6HP1-E			
Ceiling type	Drain pump kit	TCB-DP40DPE	MMD-AP0726/0966HP-E	Flange shaped, Mount chassis directly, Upside down mountable		
		TCB-DP31CE	MMC-AP0158/0188HP-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP13CE	
	Elbow piping kit	TCB-KP13CE	MMC-AP0248 to 0568HP-E		Use with TCB-KP23CE	
Air to Air Heat Exchanger with DX-coil	Drain pump kit	TCB-KP23CE	MMC-AP0158/0188HP-E	Needed when drain pump kit is used		
	Drain pump kit	TCB-DP31HEXE	MMD-VN502 to 1002HEX1E	Stand-up 330 mm or less (from bottom face of ceiling)		
Fresh air intake indoor unit type	High-efficiency filter 65	TCB-UFM3DE	MMD-AP0721/0961HFE	Dust collecting effect: 65% (NBS Colorimetric 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 Colorimetric 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		
Drain pump kit	TCB-FCY100DE	MMD-AP0721/0961HFE	Stand-up 330 or less (from bottom face of ceiling)			

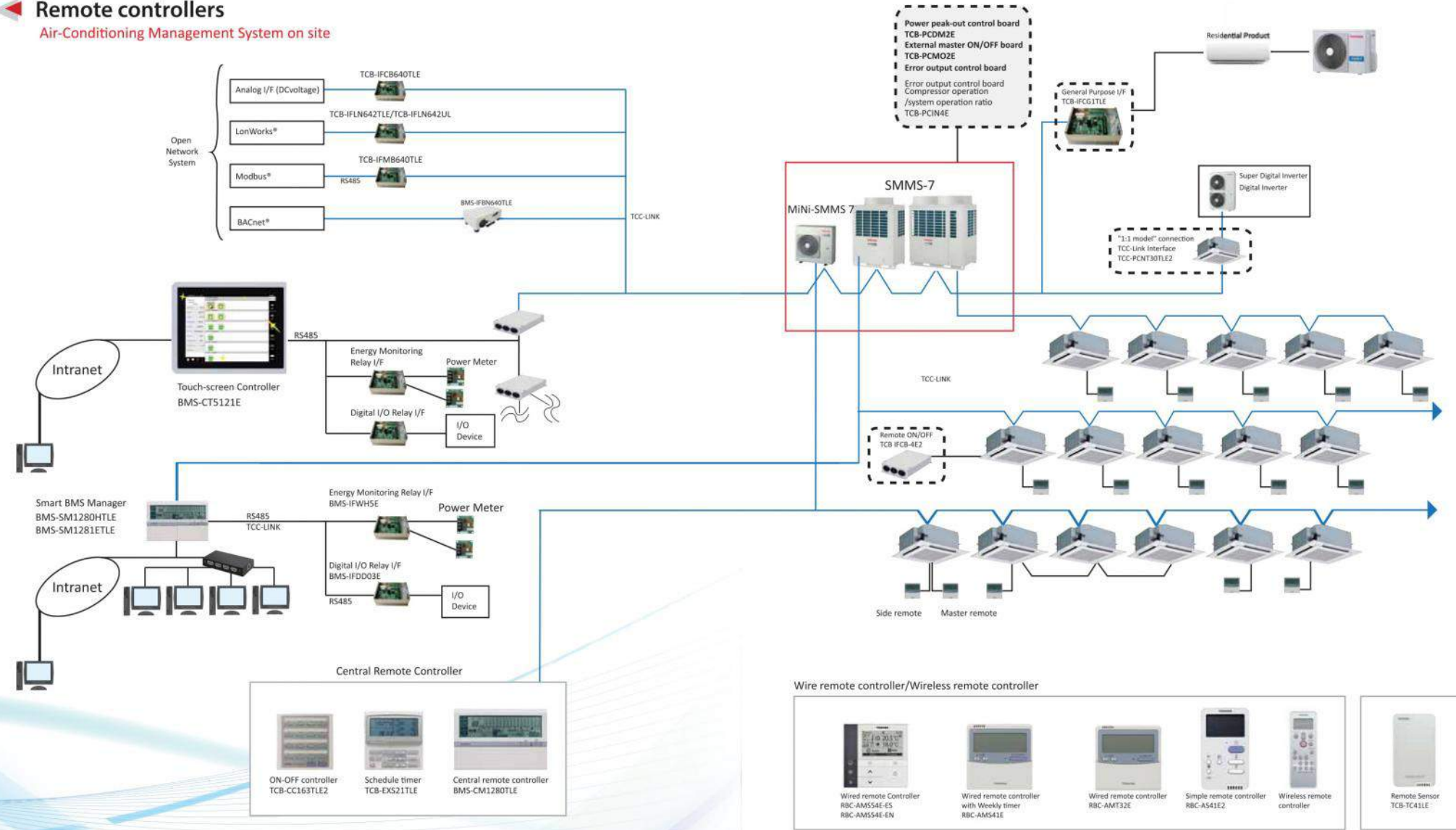
Combination Pattern

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



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



Wired remote controller



Wired remote controller
RBC-AM554E-EN
RBC-AM554E-ES

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 an 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) (MMU-AP**4HP-E) (MMU-AP**4SH1-E)



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



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



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

Central remote controller



Compliant Manager
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.

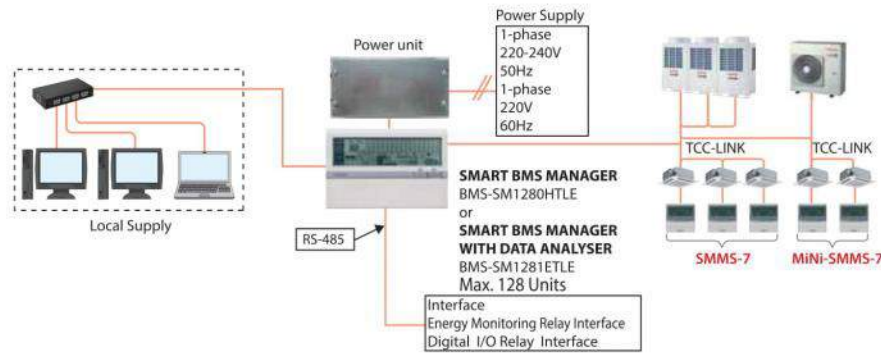


Wired remote controller for air to air heat exchanger
NRC-01HE

- 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 BMS MANAGER / SMART BMS MANAGER WITH DATA ANALYSER



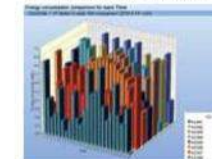
SMART BMS MANAGER
BMS-SM1280HTLE

SMART MANAGER WITH DATA ANALYSER
BMS-SM1281ETLE

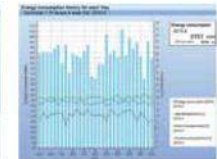
Web browser control software

- 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 are available. Power meter locally supplied energy.
- Additional digital I/O device is available
- Thin profile controller and separate power supply unit enables easy installation
- Maximum 128 FCU

Energy monitoring display



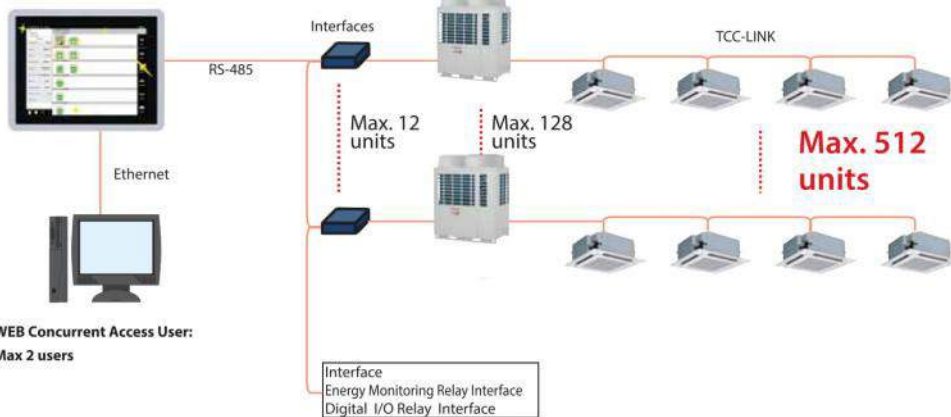
3D energy view



Daily energy view

Touch screen controller

TOUCH SCREEN CONTROLLER
BMS-CT5121E



TOUCH SCREEN CONTROLLER
BMS-CT5121E

• Touch screen controller

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

• Energy monitoring and billing application

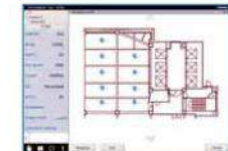
Power meter locally supplied Energy

• Web connection

• Layout diagram function (Option)



GRAPH FUNCTION



LAYOUT DIAGRAM FUNCTION
(OPTION)



Relay Interface BMS-IFWHSE
For energy monitoring to connect power meter

Relay Interface BMS-IFDD03E
to connect external digital input/output



Relay Interface BMS-IFLSV4E
For TCS-NET (Max. 64 FCU/Unit)

FEATURES

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

◀ Open network systems

BACnet® system



BN Interface
BMS-IFBN640TLE

• **BACnet®**

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

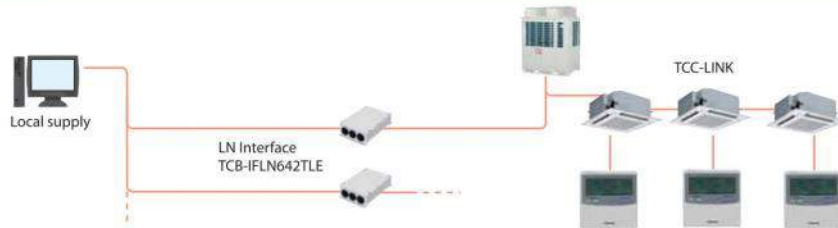
• **Control**

- ON/OFF
- Temperature setting
- Fan speed
- Max 64 units

• **Monitoring**

- ON/OFF
- Operation mode
- Temperature setting
- Room temperature
- Local remote controller : permit / prohibit

LonWorks®



LN Interface
TCB-IFLN642TLE

• **LonWorks® LN Interface**

The LonWorks® interface manages the SMMS-7 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:

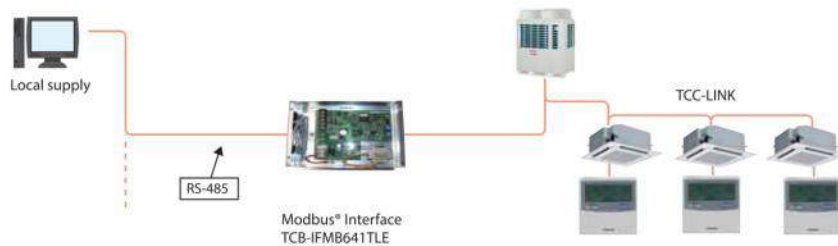
• **Control**

- ON/OFF
- Temperature setting
- Fan speed
- Max 64 FCU

• **Monitoring**

- ON/OFF
- Operation mode
- Temperature setting
- Room temperature
- Local remote controller : permit / prohibit

Modbus®



Modbus® Interface
TCB-IFMB641TLE

• **Modbus®**

The Modbus® interface manages the SMMS-7 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
- Max 64 FCU

• **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 x 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 x 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 x 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

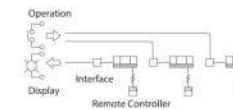


Size: 200 x 170 x 66 (mm)

Remote location ON/OFF control box

• Feature

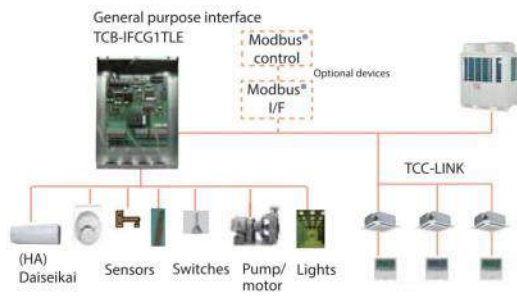
Start and stop of the air conditioner is possible by an external signal and indication of operation/ alarm externally.



Monitoring

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

General Purpose Interface



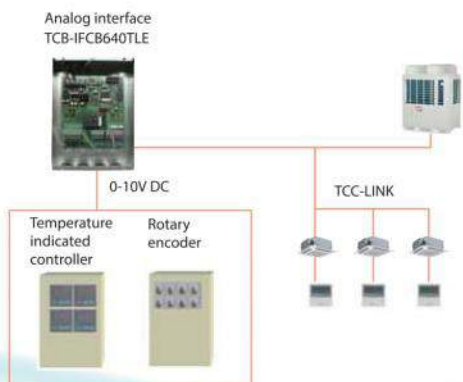
Concept

- Controls the operation status of each indoor unit.
- ON/OFF control of peripheral equipment via the relay point of Toshiba's BMS. (1pt only)

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

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

Analog Interface



Concept

- Provides access to 64 indoor units.
- Does not require special network knowledge.
- Can control each indoor unit on TCC-LINK, (on/off, temperature setting, airflow volume, louver position), and monitor status based on 0-10V DC voltage input.
- Enables relay control and status monitoring of general-purpose I/F TCB-IFCG1TLE.

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

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

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

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

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

SAFETY PRECAUTIONS

For operation:

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

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

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

Precautions for using air conditioners

Concerning the automatic defrosting unit

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

Concerning the air conditioner's operating conditions and their selection

- (1) Avoid using the air conditioner in the following locations.
 - Locations with acidic or alkaline atmospheres (locations at which highly acidic or alkaline air is directly drawn in, such as in hot springs areas from which sulfur gases are given off, or where chemicals, vinegar, exhaust air from burners, etc., are given off) The heat exchangers and other parts may become corroded.
 - Locations with atmospheres filled with coolant or other machine oil or steam exhaust (such as at food preparation factories or machine plants). The heat exchangers may corrode; frost may form as a result of heat exchanger malfunction; air conditioner operating performance may be compromised or condensation may form as a result of clogged filters; plastic parts may incur damage; heat-insulation materials may become separated, etc.
- (2) Before using an air conditioner in any of the following locations, consult with your dealer or a qualified contractor.
 - Locations where vapors from edible oils are given off (such as in bakeries or kitchens and restaurants that use edible oils) ...The air conditioner's operating performance may be compromised or condensation may form as a result of clogged filters, and the plastic parts may incur damage. In line with the prevailing conditions, take counter measures 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.
- (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.