

TOSHIBA

Leading Innovation >>>



MiNi-SMMS 

Air Conditioning for
Small and Medium-size



MiNi-SMMS 

The all-new MiNi-SMMS models
Line-up for 3HP to 12 HP
for small and mid-size installations





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MiNi-SMMS-e



What's MiNi-SMMS-e

The all-new MiNi-SMMS-e air conditioner lineup lets you cool or warm as many rooms with a single system. Outdoor units ranging 3 to 12HP, offer best class energy savings, installation flexibility and quiet operation, the MiNi-SMMS makes a perfect solution for small shops and office buildings.

Wide MiNi-SMMS-e unit line-up

Standard MiNi-SMMS-e outdoor unit line-up for your solution.



Model name (MCY-)	MHP0305HT	MHP0405HT	MHP0404HT(J)	MHP0504HT(J)	MHP0604HT(J)	MAP0604HT8 (ZG)	MAP0804HT8 (ZG)
Capacity	3HP	4HP	4HP	5HP	6HP	6HP	8HP
Power supply	1-phase 2 wires 50Hz 220 - 240V / 1-phase 2 wires 60Hz 220V		1-phase 2 wires 50Hz 220 - 240V / 1-phase 2 wires 60Hz 220V		3-phase 4 wires 50Hz 380 - 415V / 3-phase 4 wires 60Hz 380V		
Cooling	8.0	11.2	12.1	14.0	15.5	15.5	22.4
Heating	9.0	12.5	12.5	16.0	18.0	18.0	25.0

Long pipe MiNi-SMMS-e outdoor unit line-up for your solution.



Model name (MCY-)	MAP0401HT	MAP0501HT	MAP0601HT	MHP0404HS(J)	MHP0504HS(J)	MHP0604HS(J)	MHP0404HS8(J)	MHP0504HS8(J)	MHP0604HS8(J)	MHP1004HT8-1	MHP1204HT8-1
Capacity	4HP	5HP	6HP	4HP	5HP	6HP	4HP	5HP	6HP	10HP	12HP
Power supply	1-phase 2 wires 50Hz 220 - 240V / 1-phase 2 wires 60Hz 220V			1-phase 2 wires 50Hz 220 - 240V / 1-phase 2 wires 60Hz 220V			3-phase 4 wires 50Hz 380 - 415V / 3-phase 4 wires 60Hz 380V				
Cooling	12.1	14.0	15.5	12.1	14.0	15.5	12.1	14.0	15.5	28.0	33.5
Heating	12.5	16.0	18.0	12.5	16.0	18.0	12.5	16.0	18.0	31.5	37.5

Flexible installation design

MiNi-SMMS-e improve performance to achieve greater flexible installation design that defies their compact module size to deliver greater layout design.

Long pipe design



Wide indoor units line up

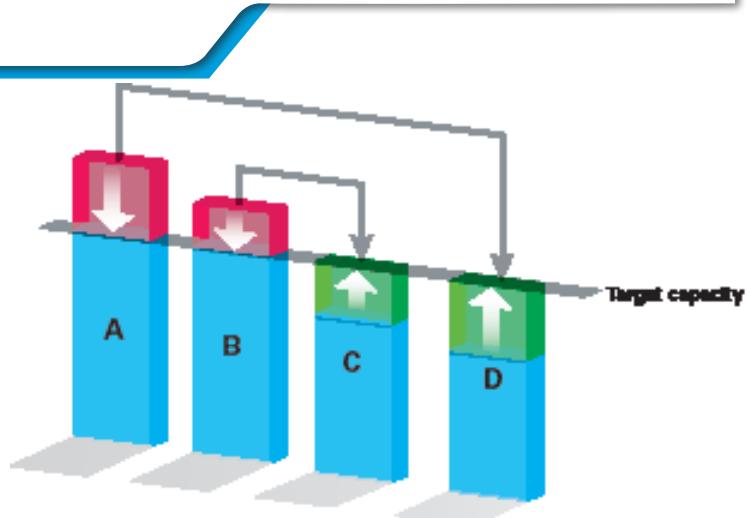
Wide indoor units line up increasing design flexibility and reducing costs to the building owner.



Energy savings

INTELLIGENT FLOW TECHNOLOGY

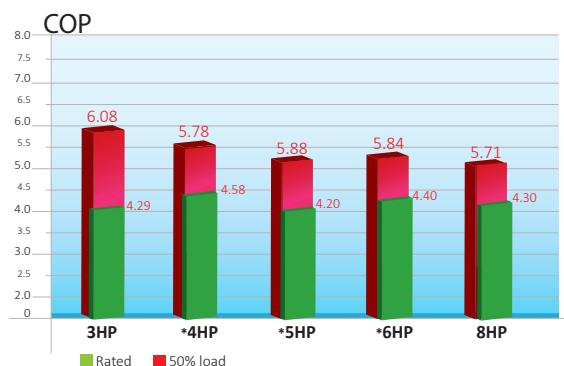
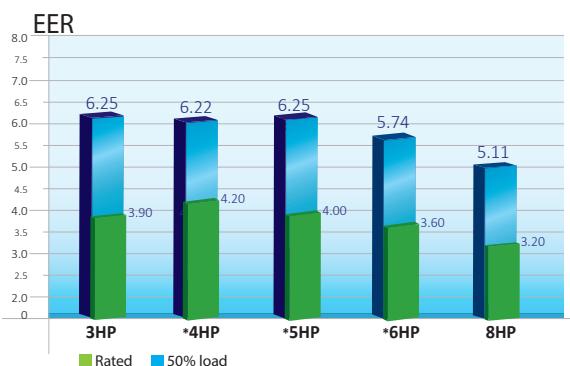
The unique IFT control continually adjusts the operation of both indoor and outdoor units, based on the feedback from multiple sensors. While the refrigerant flow to each indoor unit is precisely controlled by the outdoor unit, ensuring even capacity distribution throughout the system, the evaporative and condensing temperature is automatically adjusted to maintain optimum indoor room temperature, regardless of the unit's load or its physical distance from the outdoor unit.



Excess capacity in units A & B can be re-distributed to units C & D, ensuring perfect operation throughout the entire system. Toshiba "IFT" technology ensures that any surplus capacity can be re-distributed in order to achieve optimum performance and efficiency throughout the entire system.

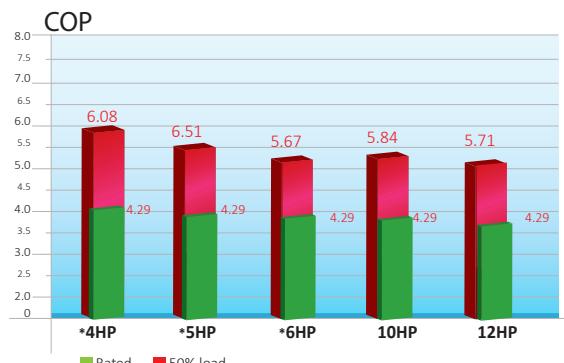
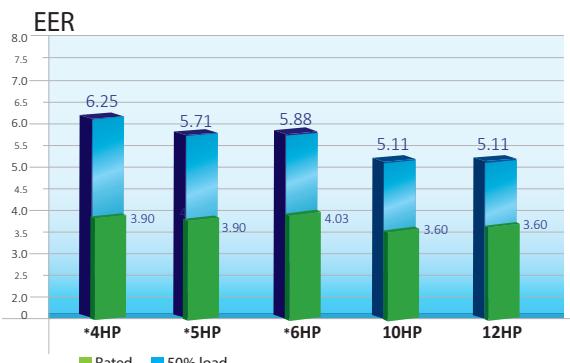
MiNi-SMMS-e maximum part load and full load efficiencies

Standard MiNi-SMMS-e



*Note : 4HP for MCY-MHP0404HS
5HP for MCY-MHP0504HS
6HP for MCY-MAP0604HT8(ZG)

Long pipe MiNi-SMMS-e



*Note : 4HP for MCY-MHP0404HS
5HP for MCY-MHP0504HS
6HP for MCY-MHP0604HS

MiNi-SMMS-e cutting-edge technologies

Toshiba's unique energy-efficient air conditioning innovations and technologies deliver high energy savings.

DC fan motor

Highly efficient DC motor

Sine wave drive

Heat exchanger

High-efficiency R410A heat-transfer tube



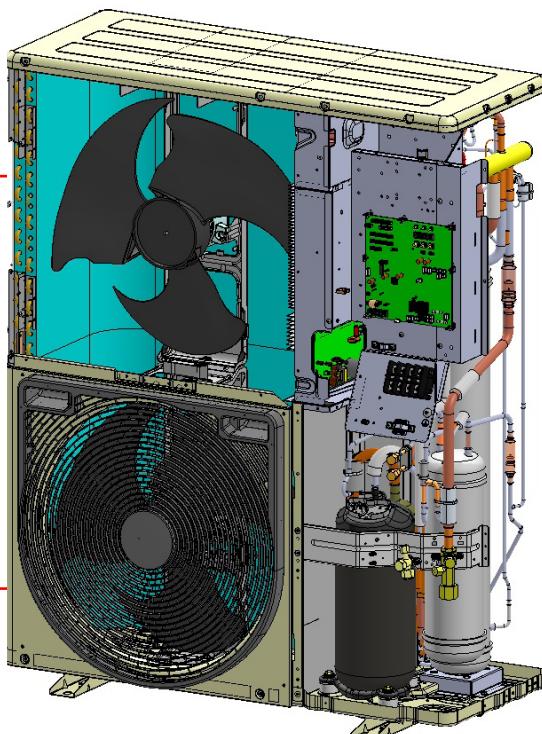
Configuration of the finned heat-transfer tube

Large-Diameter Propeller Fan

High-pressure

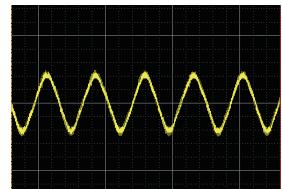


The bat wing fan realizes low sound level.



Vector-controlled inverter

The inverter boosts efficiency by controlling R410A and a twin-rotary DC compressor.



Smooth sine curve realizes higher efficiency and less noise.



Efficient circuit built-in; new PIM

Vector IPDU control changes the motor current wave to a smooth sine pattern so that noise emitted from the drive units is greatly reduced.

Twin-rotary DC compressor

Increased, wide range efficiency is realized.

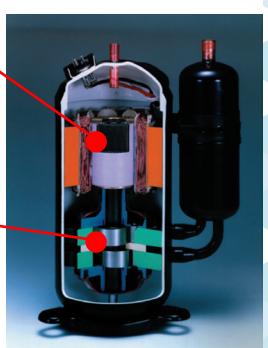


DC driven motor with rare-earth magnet

- Compact
- Higher efficiency
- Higher power motor torque

Precise manufacturing technology in the compression parts

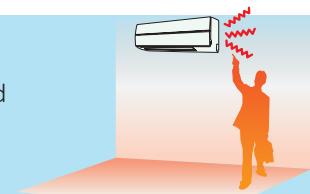
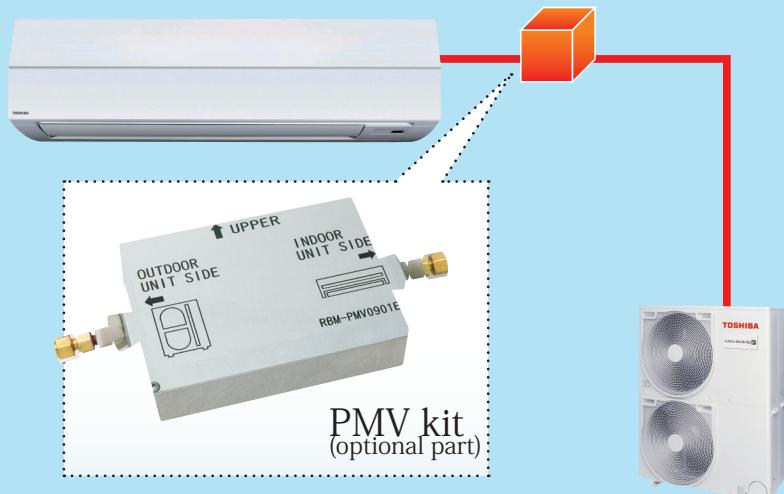
- Higher efficiency (in wide range)
- Higher reliability



QUIET OPERATION

PMV kit for quieter operation

An optional PMV kit allows quieter placement by efficiently reducing the sound made by the refrigerant in the piping.



Night operation (sound reduction) control

The unit also comes with a night-time low-noise mode, which reduces operating noise at the programmed activation time. (Timer or switch to be locally obtained.)



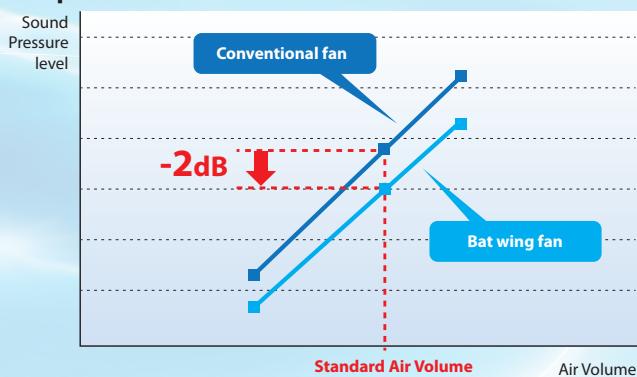
Model name	Operation control	Normal	Night
		Cooling	Heating
MCY-MHP0404HS	4HP	49dB(A)	46dB(A)
		50dB(A)	48dB(A)
MCY-MHP0504HS	5HP	50dB(A)	46dB(A)
		52dB(A)	48dB(A)
MCY-MHP0604HS	6HP	51dB(A)	47dB(A)
		53dB(A)	49dB(A)

The optional PC board: TCB-PCMO4E can be mounted in outdoor unit for sound reduction during night time.

New propeller fan

Fan blade design plays a significant part reducing noise and vibration. Anti-eddy projections and reverse-arc shaped wings reduce air resistance resulting in low operating noise of the outdoor unit.

1-phase outdoor unit



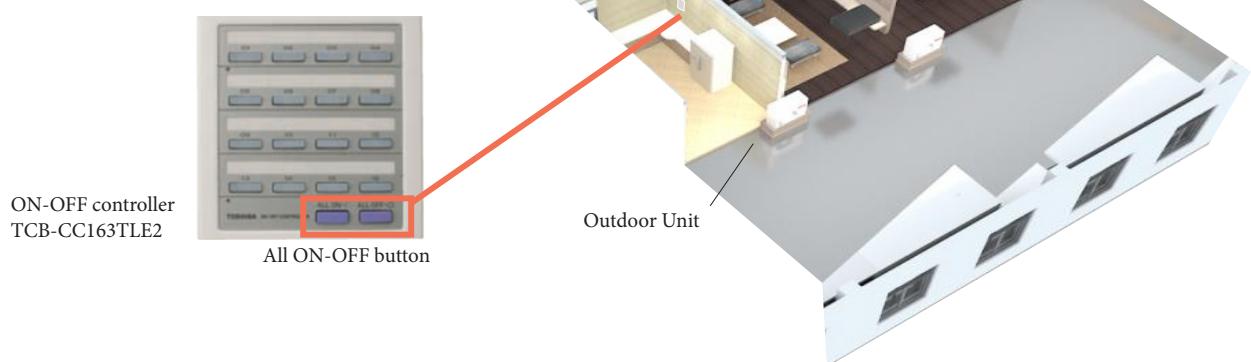
- ① **Anti-eddy projections**
Minimizes the generation of large eddies.
- ② **Reverse-arc-shaped wing**
Reduces rear turbulence due to less pressure loss.

Comfort and wide application control

A single outdoor unit is powerful enough to accommodate up to 12* independently controlled interior units, delivering ideal quiet comfort to every room.

*3-phase 12HP outdoor unit

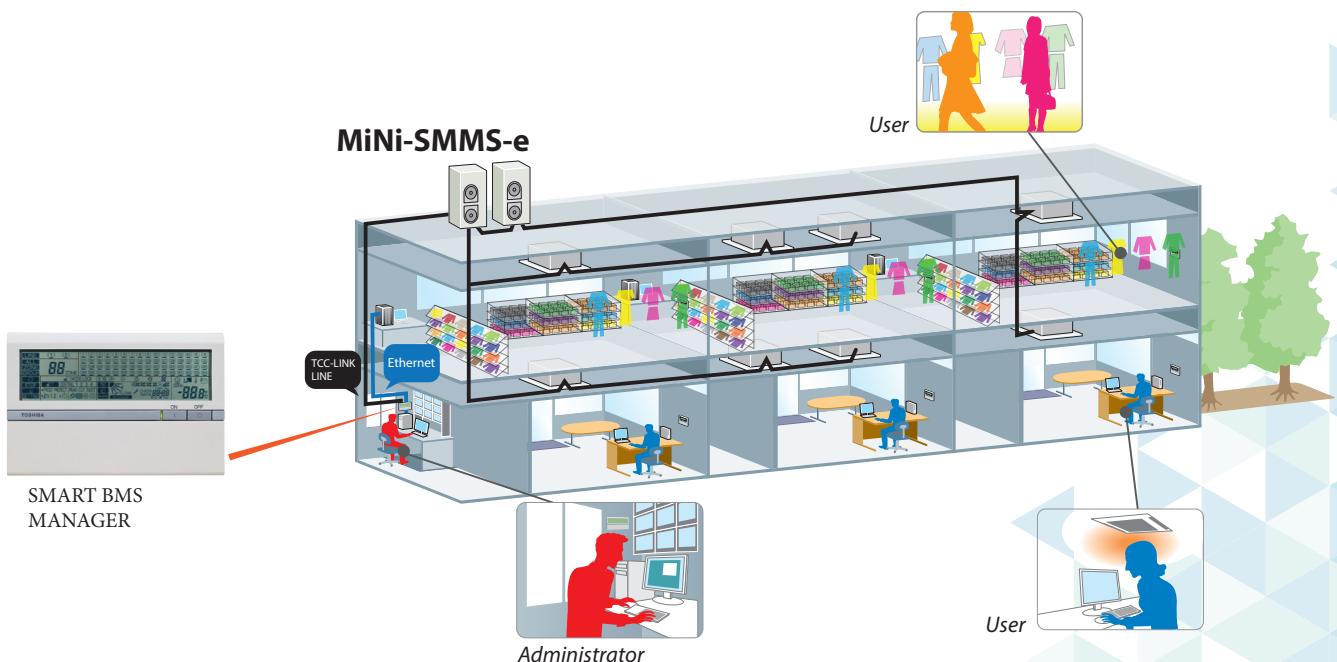
The ON-OFF controller makes it easy to manage all indoor units from a single location.



Smart BMS Manager for remote management

By connecting a PC to the system via Ethernet, temperatures and operation in each room can be remotely monitored and controlled.

Furthermore, daily, weekly, and monthly schedules can be set for automated operation.



USER FRIENDLY

MiNi-SMMS-e is suitable for balconies

The outdoor unit is compact and expels exhaust air to the side, so it can be installed even in limited spaces as shown.



Greater with space saving design

The space-saving and cost-saving installation solution, MiNi-SMMS now reduced the foot print.



MiNi-SMMS
8HP

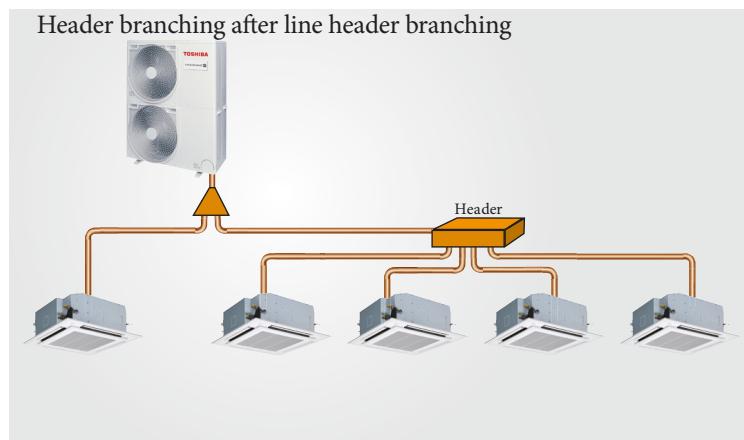
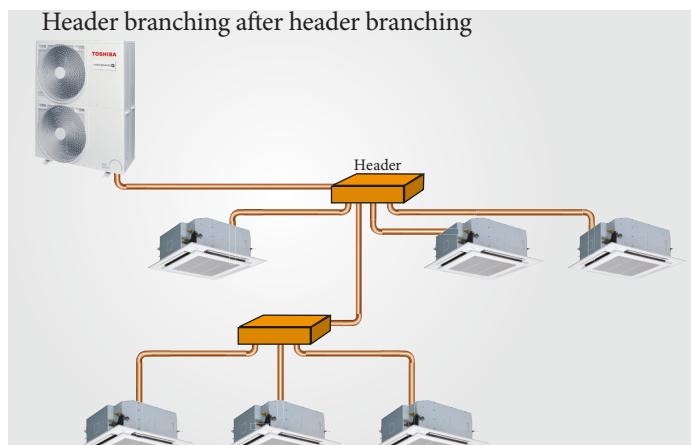


SMMS-e
8HP

FLEXIBLE DESIGN AND EASY INSTALLATION

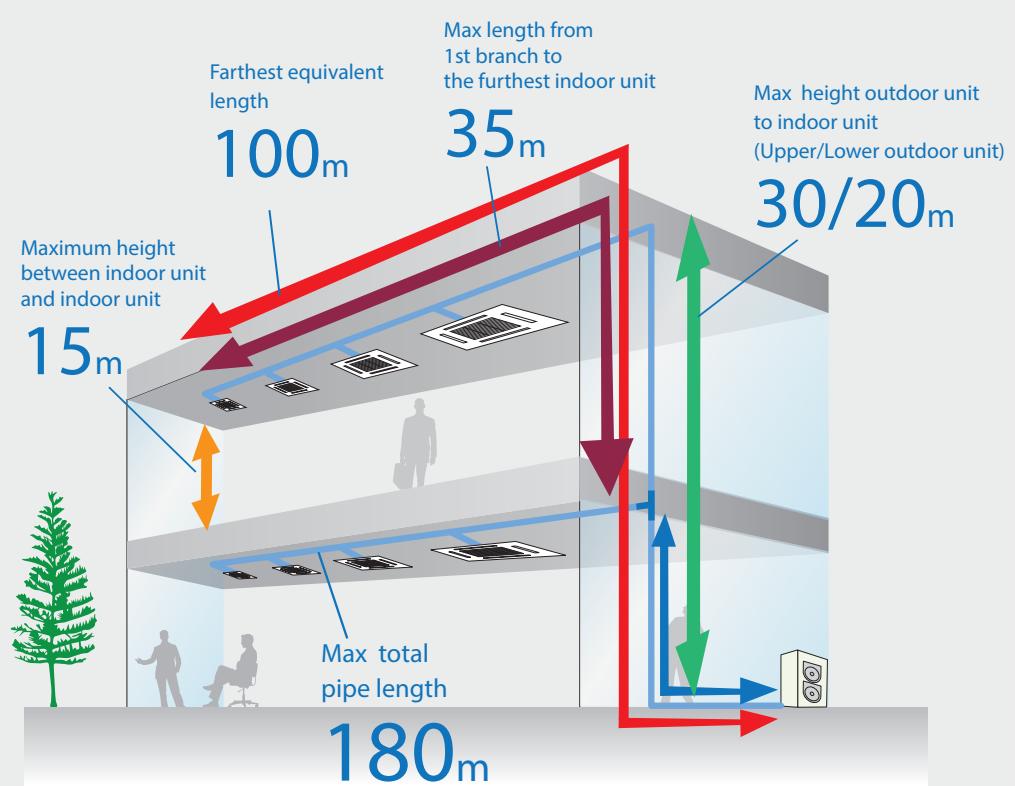
Shortest route design by free branching

Combination of line and header branching is highly flexible, allowing the shortest route possible thereby saving on installation time and costs. Header branching after header branching is only available with Toshiba systems.

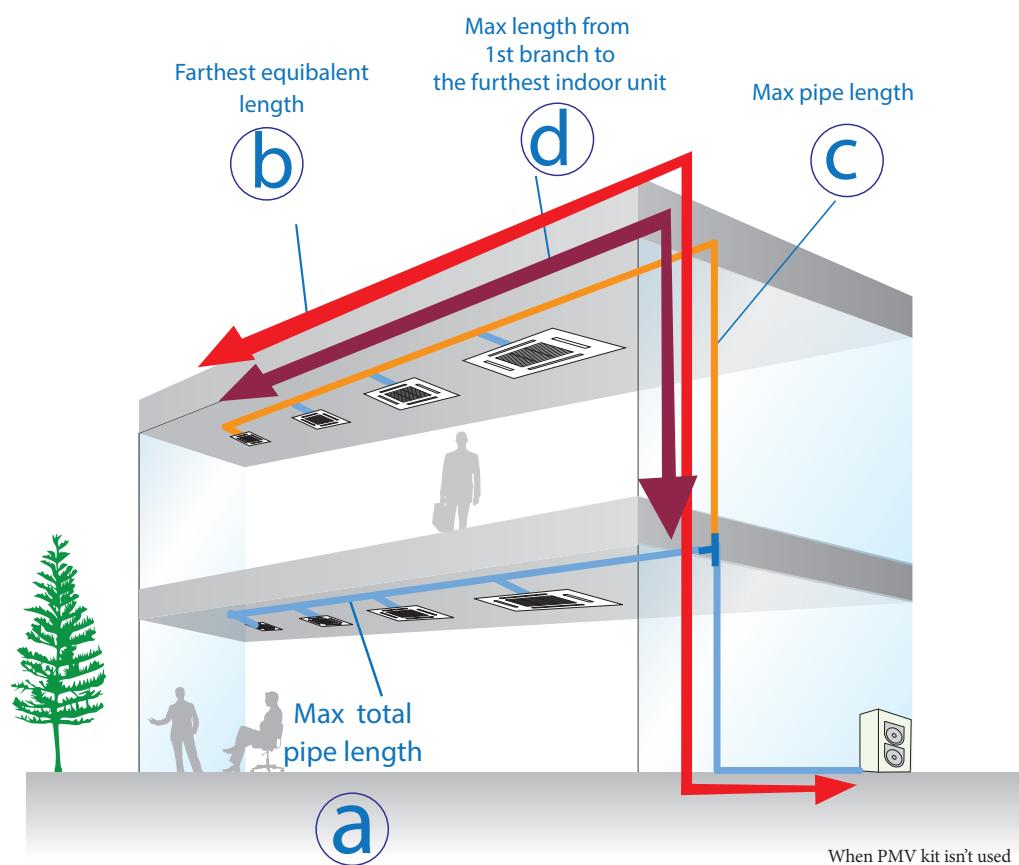


Maximum piping length

MiNi-SMMS-e's enhanced piping capabilities result in more benefits for the system design, installation flexibility, as well as the less installation cost.



*MCY-MHP0404HS, MCY-MHP0504HS, MCY-MHP0604HS



Standard MiNi-SMMS-e outdoor unit line-up for your solution.

Model name (MCY-)	MHP0305HT	MHP0405HT	MHP0404HT(J)	MHP0504HT(J)	MHP0604HT(J)	MAP0604HT8 (ZG)	MAP0804HT8 (ZG)
Max total pipe length	a	90		90		100	
Farthest equivalent length	b	50		60		60	
Max main pipe length	c	20		30		30	
Max length from 1st branch to the furthest indoor unit	d	20		20		20	
Max height outdoor unit to indoor unit	Upper outdoor unit	15		15		15	
	Lower outdoor unit	15		15		15	
Maximum height between indoor unit and indoor unit		10		10		10	

Long pipe MiNi-SMMS-e outdoor unit line-up for your solution.

Model name (MCY-)	MAP0401HT	MAP0501HT	MAP0601HT	MHP0404HS(J)	MHP0504HS(J)	MHP0604HS(J)	MHP0404HS8(J)	MHP0504HS8(J)	MHP0604HS8(J)	MHP1004HT8-1	MHP1204HT8-1
Max total pipe length	a	180		180		180		180		180	
Farthest equivalent length	b	125		125		125		125		120	
Max main pipe length	c	65		65		65		65		65	
Max length from 1st branch to the furthest indoor unit	d	35		35		35		35		35	
Max height outdoor unit to indoor unit	Upper outdoor unit	30		30		30		30		15	
	Lower outdoor unit	20		20		20		20		15	
Maximum height between indoor unit and indoor unit		15		15		15		15		10	



Outdoor unit combinations

Standard model

Model name (MCY-)	MHP0305HT	MHP0405HT	MHP0404HT(J)	MHP0504HT(J)	MHP0604HT(J)	MAP0604HT8	MAP0804HT8
kW	8.0	11.2	12.1	14.0	15.5	15.5	22.4
Class HP	3	4	4	5	6	6	8
Diversity	80-135%	80-135%	80-130%	80-130%	80-130%	80-130%	80-130%
Maximum number of connectable indoor units	5	5	6	6	6	8	8

Long pipe model

Model name (MCY-)	MAP0401HT	MAP0501HT	MAP0601HT	MHP0404HS(J)	MHP0504HS(J)	MHP0604HS(J)	MHP0404HS8(J)	MHP0504HS8(J)	MHP0604HS8(J)	MHP1004HT8-1	MHP1204HT8-1
kW	12.1	14.0	15.5	12.1	14.0	15.5	12.1	14.0	15.5	28.0	33.5
Class HP	4	5	6	4	5	6	4	5	6	10	12
Diversity	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%	80-130%
Maximum number of connectable indoor units	6	8	9	6	8	9	6	8	9	12	12

Outdoor unit specifications

Equivalent HP		3HP	4HP	
Model name	50Hz / 60Hz	(MCY-)	MHP0305HT MHP0405HT	
Outdoor unit type	Inverter unit			
Power supply	1-phase 2 wires 50Hz 220 – 240V / 1-phase 2 wires 60Hz 220V			
Cooling *1	Power consumption	(kW)	2.05	
	EER (Energy Efficiency Ratio)		3.90	
Heating *1	Power consumption	(kW)	2.10	
	COP (Coefficient of Performance)		4.29	
External dimensions (Height / Width / Depth)		(mm)	900/990/390	
Total weight		(kg)	80	
Compressor	Motor output	(kW)	2.72	
Fan unit	Motor output	(kW)	100	
	Air volume	(m³/h)	3,680	
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	15.9	
		Liquid side (OD) (mm)	9.5	
Max. no. of connected indoor units			5	
Sound pressure level (Cooling/Heating) *3		(dB(A))	53/54	
			54/55	

specifications

Equivalent HP		4HP	5HP	6HP	
Model name	50Hz	(MCY-)	MAP0401HT	MAP0501HT	
	60Hz	(MCY-)	MAP0401HT2D	MAP0501HT2D	
Outdoor unit type		Inverter unit			
Power supply		1-phase 2 wires 50Hz 220 – 240V / 1-phase 2 wires 60Hz 220V			
Cooling *1	Power consumption	(kW)	2.82	3.47	
	EER (Energy Efficiency Ratio)		4.29	4.03	
Heating *1	Power consumption	(kW)	2.71	4.00	
	COP (Coefficient of Performance)		4.61	4.00	
External dimensions (Height / Width / Depth)		(mm)	1,340/900/320		
Total weight		(kg)	117		
Compressor	Motor output	(kW)	2.3	3.1	
Fan unit	Motor output	(kW)	0.063+0.063		
	Air volume	(m³/h)	5,820	6,120	
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	15.9		
		Liquid side (OD) (mm)	9.5		
Max. no. of connected indoor units			6	8	
Sound pressure level (Cooling/Heating) *3		(dB(A))	49/50	50/52	
				51/53	

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

*2 When PMV kit is used

*3 Sound pressure levels measured in an anechoic chamber

Light Anti-Corrosion protection model : MCY-MAP****HTZ, MCY-MAP****HT2DZ
Heavy Anti-Corrosion protection model : MCY-MAP****HTZG, MCY-MAP****HT2DZG

specifications

Equivalent HP				6HP	8HP		
Model name	50Hz		(MCY-)	MAP0604HT8(ZG)	MAP0804HT8(ZG)		
	60Hz		(MCY-)	MAP0604HT7(ZG)	MAP0804HT7(ZG)		
Outdoor unit type					Inverter unit		
Power supply					3-phase 4 wires 50Hz 380 – 415V / 3-phase 4 wires 60Hz 380V		
Cooling *1	Power consumption (kW)			4.31	7.00		
	EER (Energy Efficiency Ratio)			3.60	3.20		
Heating *1	Power consumption (kW)			4.09	5.82		
	COP (Coefficient of Performance)			4.40	4.30		
External dimensions (Height / Width / Depth) (mm)			1,540/ 900 / 320				
Total weight (kg)			123				
Compressor	Motor output (kW)		3.75	3.75			
Fan unit	Motor output (kW)			100+100			
	Air volume (m³/h)			7,860	7,860		
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	19.1	22.2			
		Liquid side (OD) (mm)	9.5				
Max. no. of connected indoor units			8	8			
Sound pressure level (Cooling/Heating) *3 (dB(A))			58/58	58/58			

specifications

Equivalent HP				10HP	12HP		
Model name	50Hz		(MCY-)	MHP1004HT8-1	MHP1204HT8-1		
	60Hz		(MCY-)	MHP1004HT7	MHP1204HT7		
Outdoor unit type					Inverter unit		
Power supply					3-phase 4 wires 50Hz 380 – 415V / 3-phase 4 wires 60Hz 380V		
Cooling *1	Power consumption (kW)			9.34	11.98		
	EER (Energy Efficiency Ratio)			3.00	2.80		
Heating *1	Power consumption (kW)			8.30	10.43		
	COP (Coefficient of Performance)			3.80	3.60		
External dimensions (Height / Width / Depth) (mm)			1,825/ 990 / 390				
Total weight (kg)			162	164			
Compressor	Motor output (kW)		5.60	5.60			
Fan unit	Motor output (kW)			100+100+100			
	Air volume (m³/h)			11,100	12,000		
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	22.2	25.4			
		Liquid side (OD) (mm)	12.7				
Max. no. of connected indoor units			12	12			
Sound pressure level (Cooling/Heating) *3 (dB(A))			58/59	61/62			

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

*2 When PMV kit is used

*3 Sound pressure levels measured in an anechoic chamber

specifications

Equivalent HP		4HP	5HP	6HP
Model name	50Hz / 60Hz	(MCY-)	MHP0404HT(J)	MHP0504HT(J)
Outdoor unit type	Inverter unit			
Power supply	1-phase 2 wires 50Hz 220 – 240V / 1-phase 2 wires 60Hz 220V			
Cooling *1	Power consumption	(kW)	2.88	3.50
	EER (Energy Efficiency Ratio)		4.20	4.00
Heating *1	Power consumption	(kW)	2.73	3.81
	COP (Coefficient of Performance)		4.58	4.20
External dimensions (Height / Width / Depth)	(mm)	1,235/ 990 / 390		
Total weight	(kg)	115		
Compressor	Motor output	(kW)	3.75	3.75
Fan unit	Motor output	(kW)	100+100	
	Air volume	(m³/h)	6,030	6,210
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	15.9	
		Liquid side (OD) (mm)	9.5	
Max. no. of connected indoor units		6	6	6
Sound pressure level (Cooling/Heating) *3	(dB(A))	50/52	51/54	52/55

specifications

Equivalent HP		4HP	5HP	6HP
Model name	50Hz / 60Hz	(MCY-)	MHP0404HS(J)	MHP0504HS(J)
Outdoor unit type	Inverter unit			
Power supply	1-phase 2 wires 50Hz 220 – 240V / 1-phase 2 wires 60Hz 220V			
Cooling *1	Power consumption	(kW)	2.83	3.50
	EER (Energy Efficiency Ratio)		4.28	4.00
Heating *1	Power consumption	(kW)	2.59	3.75
	COP (Coefficient of Performance)		4.83	4.27
External dimensions (Height / Width / Depth)	(mm)	1,235/990/390		
Total weight	(kg)	127		
Compressor	Motor output	(kW)	3.75	3.75
Fan unit	Motor output	(kW)	100+100	
	Air volume	(m³/h)	5,660	5,820
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	15.9	
		Liquid side (OD) (mm)	9.5	
Max. no. of connected indoor units		6	8	9
Sound pressure level (Cooling/Heating) *3	(dB(A))	49/52	50/53	51/54

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

*2 When PMV kit is used

*3 Sound pressure levels measured in an anechoic chamber

specifications

Equivalent HP			4HP	5HP	6HP
Model name	50Hz / 60Hz	(MCY-)	MHP0404HS8(J)	MHP0504HS8(J)	MHP0604HS8(J)
Outdoor unit type				Inverter unit	
Power supply				3-phase 4 wires 50Hz 380 – 415V / 3-phase 4 wires 60Hz 380V	
Cooling ^{*1}	Power consumption	(kW)	2.82	3.47	4.25
	EER (Energy Efficiency Ratio)		4.29	4.03	3.65
Heating ^{*1}	Power consumption	(kW)	2.57	3.72	4.27
	COP (Coefficient of Performance)		4.86	4.30	4.22
External dimensions (Height / Width / Depth)	(mm)		1,235/990/390		
Total weight	(kg)		124		
Compressor	Motor output	(kW)	3.75	3.75	3.75
Fan unit	Motor output	(kW)	100+100		
	Air volume	(m ³ /h)	5,660	5,820	6,050
Refrigerant piping Specifications	Connecting port dia.	Gas side (OD) (mm)	15.9		
		Liquid side (OD) (mm)	9.5		
Max. no. of connected indoor units			6	8	9
Sound pressure level (Cooling/Heating) ^{*3}	(dB(A))		49/52	50/53	51/54

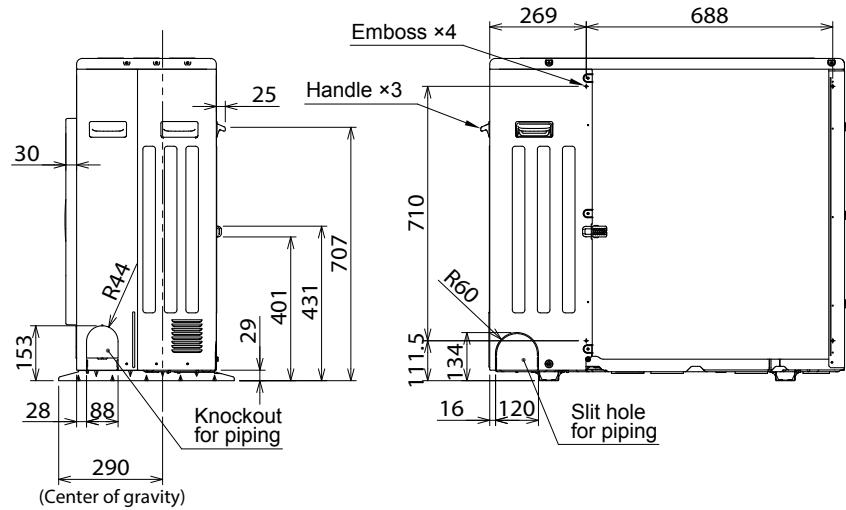
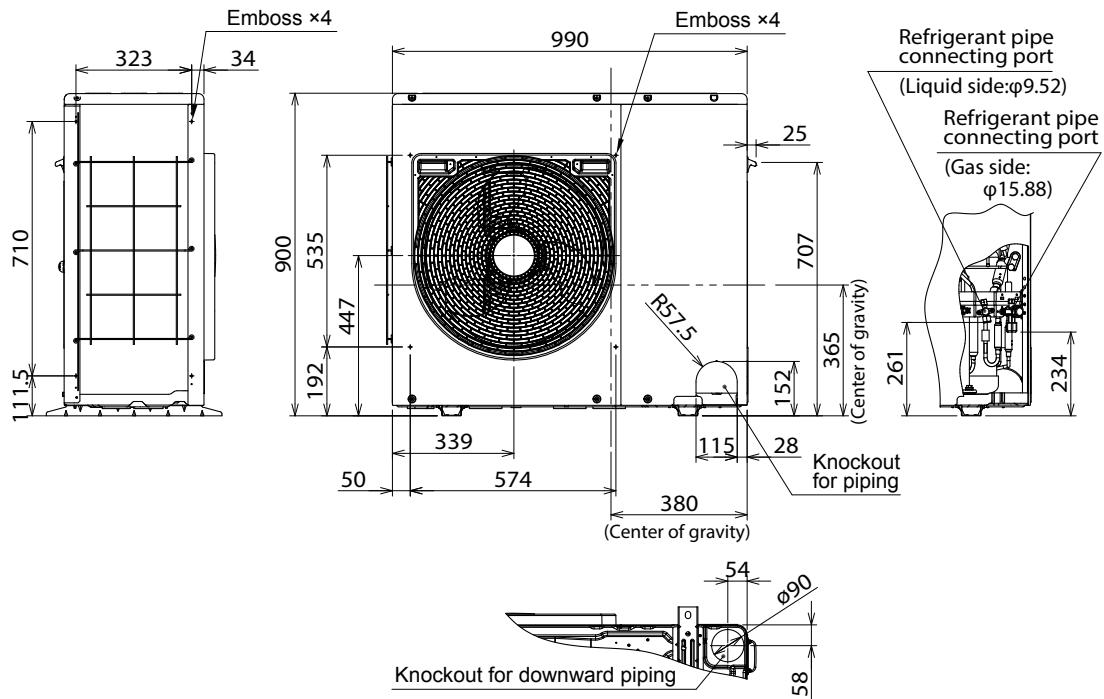
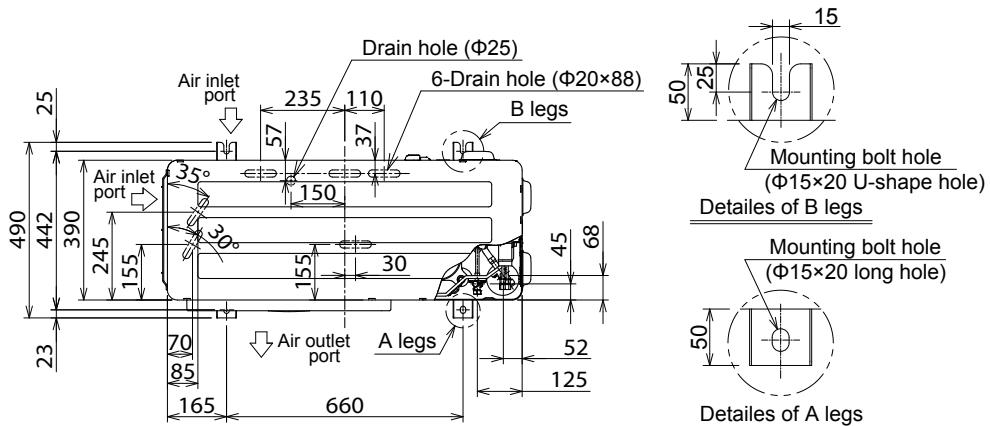
*1 Rated conditions Cooling : Indoor air temperature 27°C DB / 19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB / 6°C WB

*2 When PMV kit is used

*3 Sound pressure levels measured in an anechoic chamber

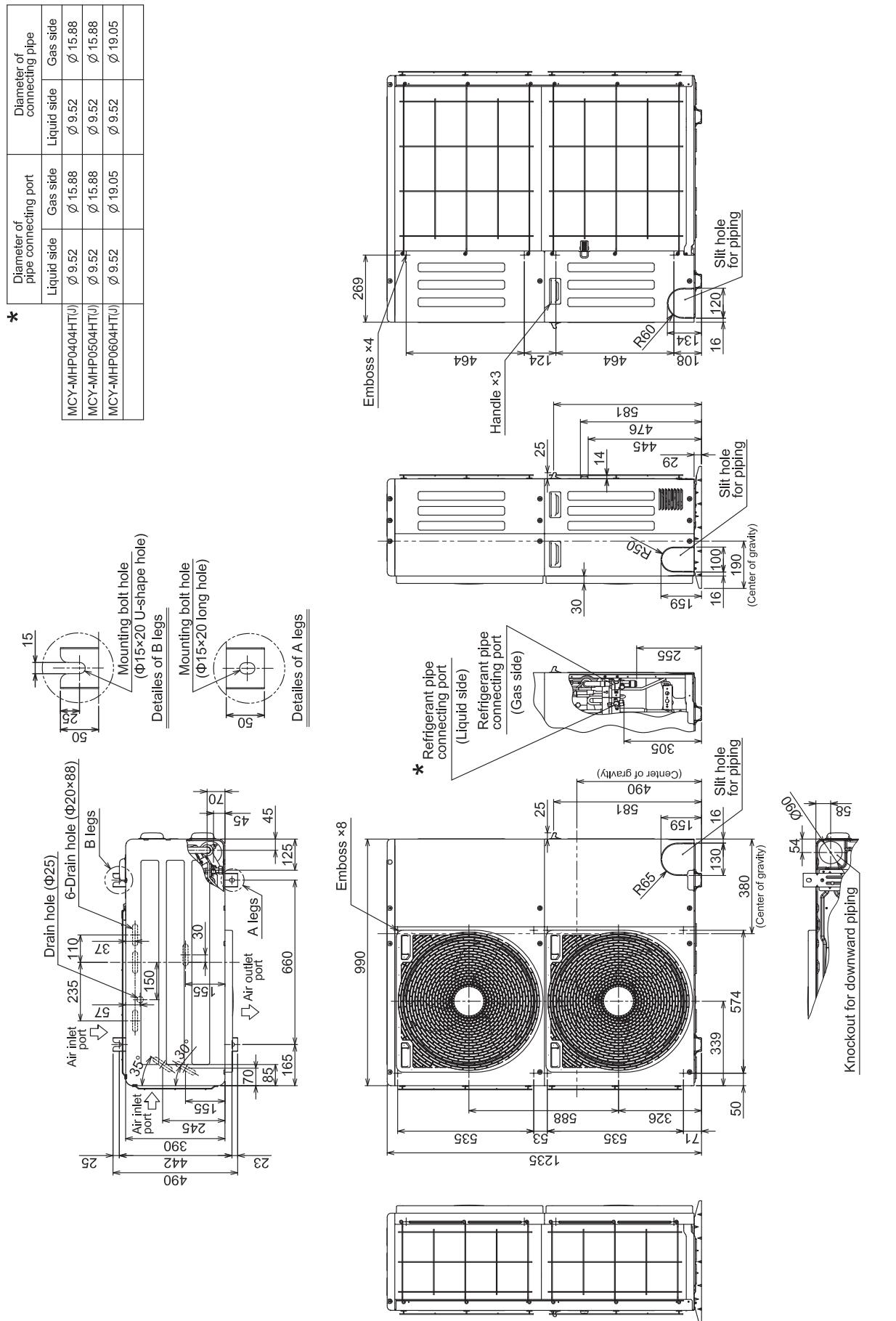
Heavy Anti-Corrosion protection model : MCY-MHP***HS8(J)

MCY-MHP0305HT, MCY-MHP0405HT

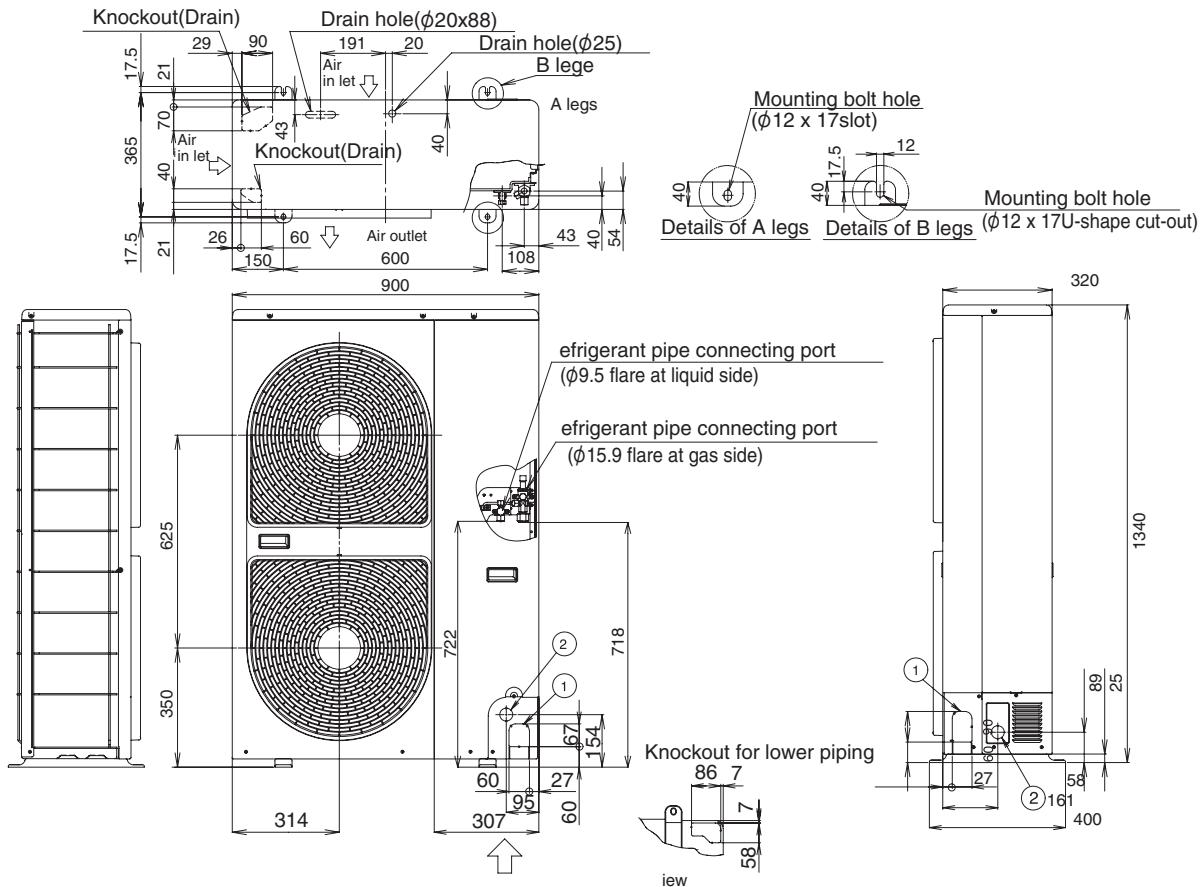


units : mm

MCY-MHP0404HT(J), MCY-MHP0504HT(J), MCY-MHP0604HT(J)



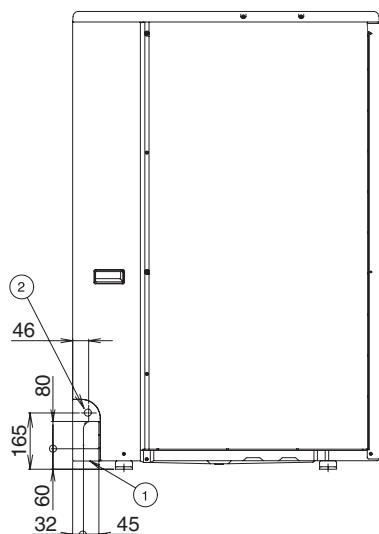
MCY-MAP0401HT, MCY-MAP0501HT, MCY-MAP0601HT



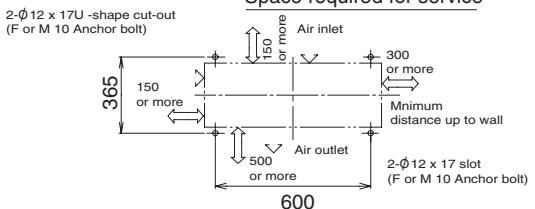
Diameter of refrigerant pipe

	Name	Notes
①	Control wiring and piping hole	—
②	Power suppl wiring hole	Knockout hole $\phi 38$

Model name	Gas side	Liquid side
MCY-MAP0401HT*	Ø15.9 (Flare)	Ø9.5 (Flare)
MCY-MAP0501HT*	Ø15.9 (Flare)	Ø9.5 (Flare)
MCY-MAP0601HT*	Ø19.1 Bla ing connection with attached joint socket	Ø9.5 (Flare)

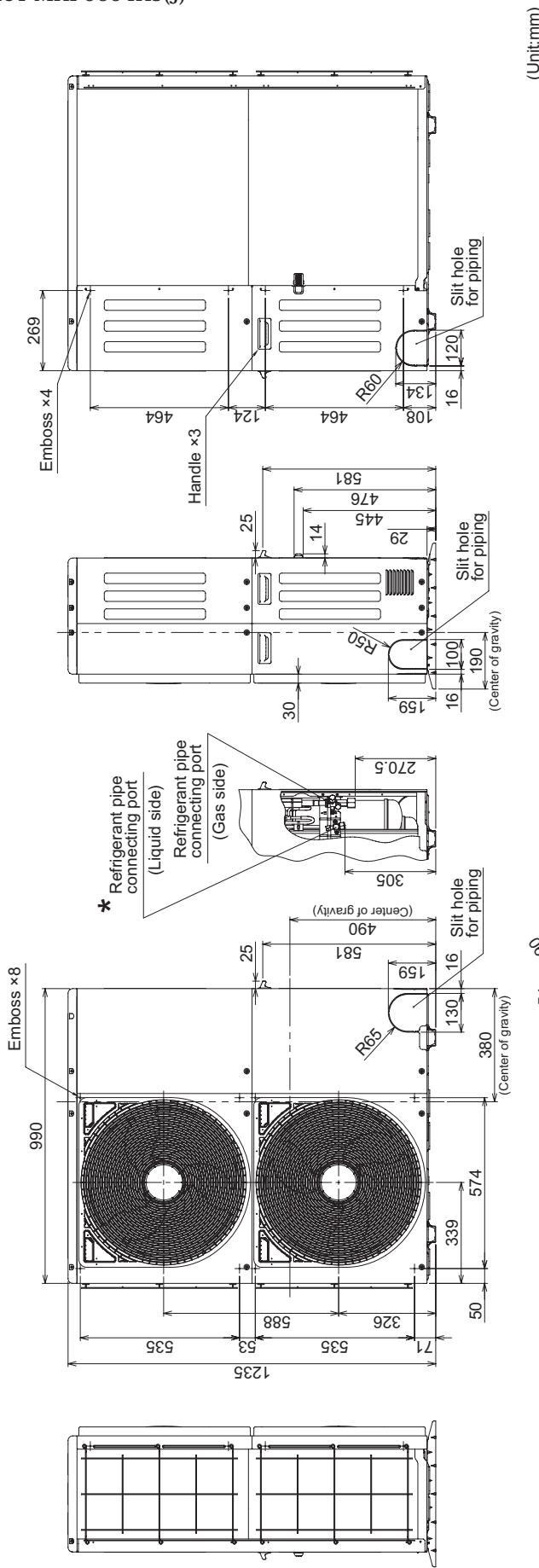
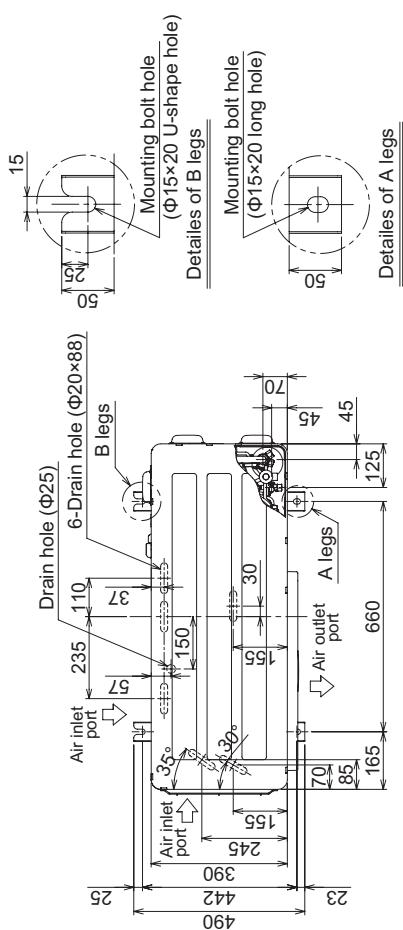


Space required for service



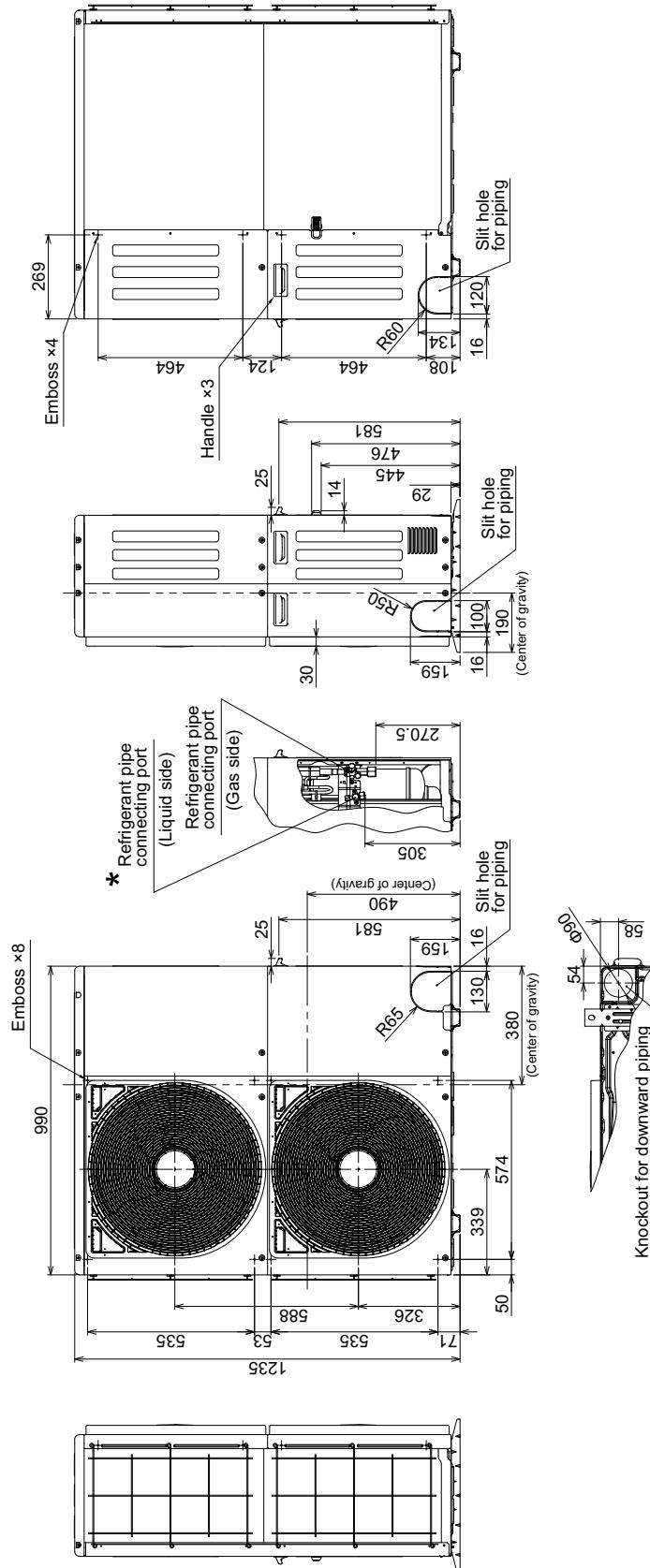
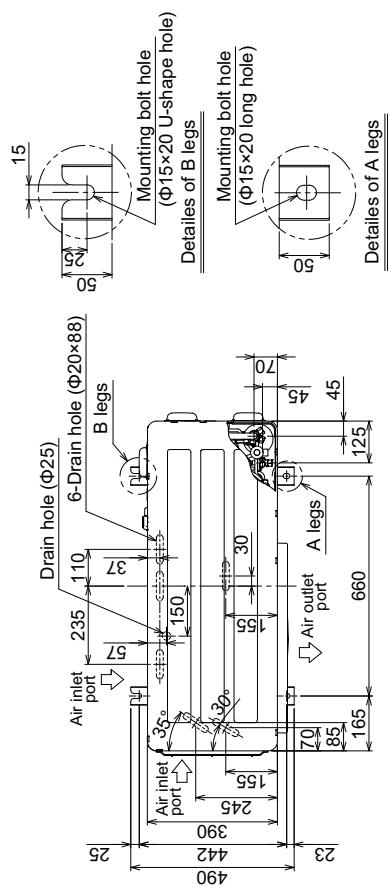
MCY-MHP0404HS(J), MCY-MHP0504HS(J), MCY-MHP0604HS(J)

*	Diameter of pipe connecting port		Diameter of connecting pipe	
	Liquid side	Gas side	Liquid side	Gas side
MCY-MHP0404HS MCY-MHP0404HSJ	Ø 9.52	Ø 15.88	Ø 9.52	Ø 15.88
MCY-MHP0504HS MCY-MHP0504HSJ	Ø 9.52	Ø 15.88	Ø 9.52	Ø 15.88
MCY-MHP0604HS MCY-MHP0604HSJ	Ø 9.52	Ø 19.05	Ø 9.52	Ø 19.05



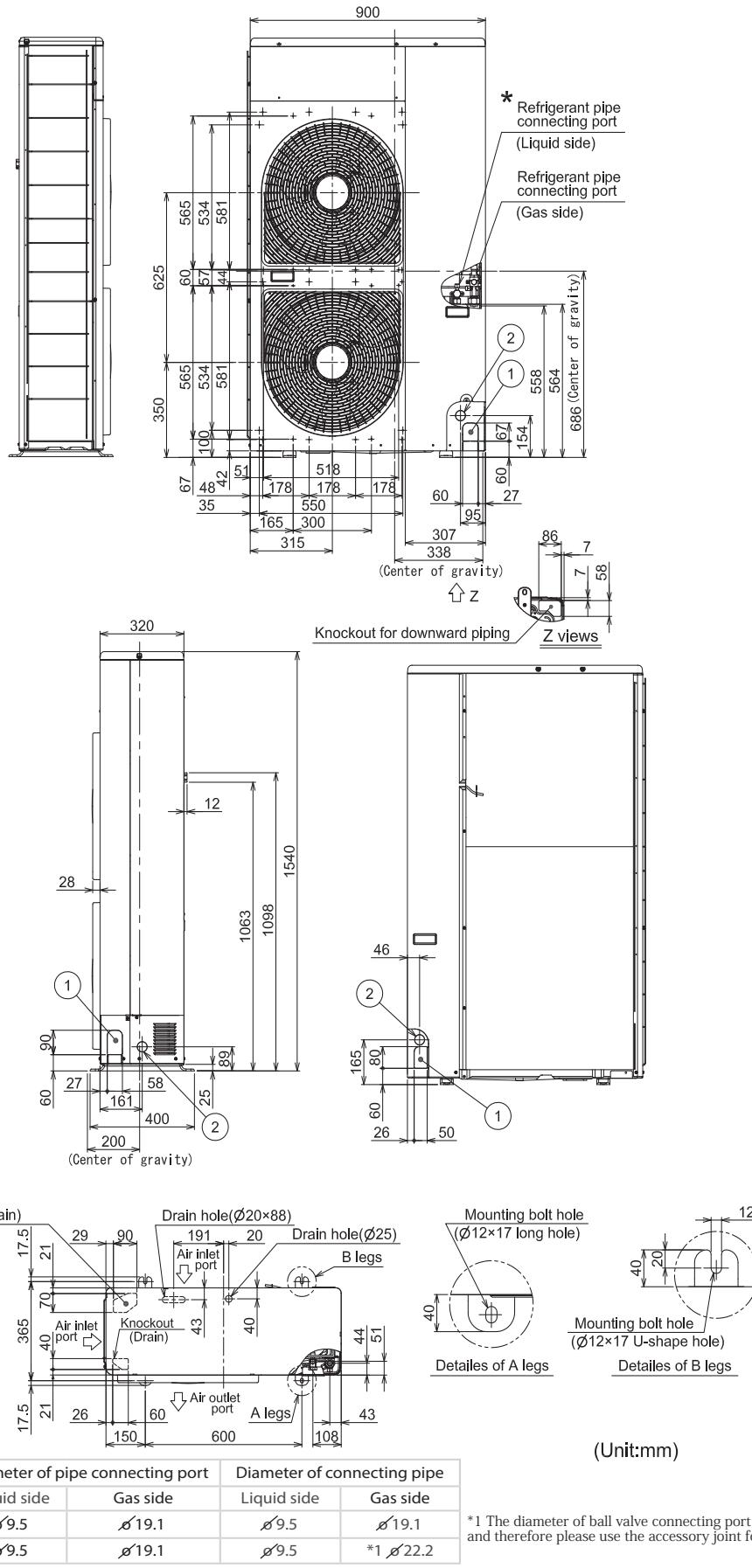
MCY-MHP0404HS8(J), MCY-MHP0504HS8(J), MCY-MHP0604HS8(J)

*	Diameter of pipe connecting port	Diameter of connecting pipe		
	Liquid side	Gas side	Liquid side	Gas side
MCY-MHP0404HS8 MCY-MHP0404HS8J	Ø 9.52	Ø 15.88	Ø 9.52	Ø 15.88
MCY-MHP0504HS8 MCY-MHP0504HS8J	Ø 9.52	Ø 15.88	Ø 9.52	Ø 15.88
MCY-MHP0604HS8 MCY-MHP0604HS8J	Ø 9.52	Ø 19.05	Ø 9.52	Ø 19.05

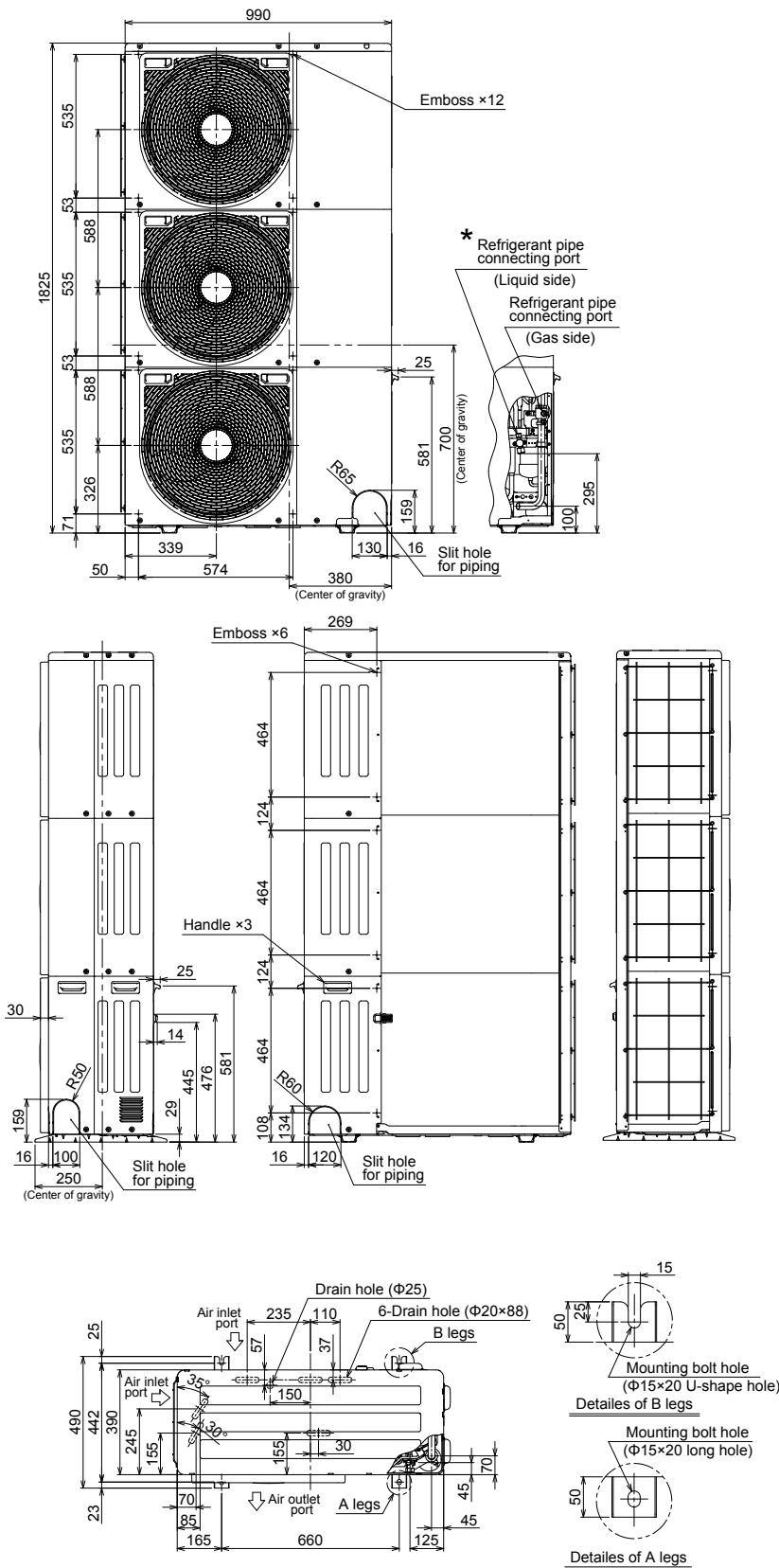




MCY-MAPO604HT8(ZG), MAP0804HT8(ZG)



MCY-MHP1004HT8-1, MHP1204HT8-1



	Diameter of pipe connecting port		Diameter of connecting pipe	
	Liquid side	Gas side	Liquid side	Gas side
MCY-MHP1004HT8-1	ø12.7	ø25.4	ø12.7	*1 ø22.2
MHP1204HT8-1	ø12.7	ø25.4	ø12.7	ø25.4

*1 The diameter of ball valve connecting port on the outdoor unit is 25.4, and therefore please use the accessory joint for installation.



Cooling capacity (HP equivalent)	4-way air discharge cassette type	Compact 4-way cassette (600×600) type	2-way air discharge cassette type	1-way air discharge cassette type	Slim duct type
007 type 2.2 kw (0.8HP)		MMU-AP0074MH1-E	MMU-AP0072WH1	MMU-AP0074YH1-E	MMD-AP0074SPH1-E
009 type 2.8 kw (1HP)	MMU-AP0094HP1-E	MMU-AP0094MH1-E	MMU-AP0092WH1	MMU-AP0094YH1-E	MMD-AP0094SPH1-E
012 type 3.6 kw (1.25HP)	MMU-AP0124HP1-E	MMU-AP0124MH1-E	MMU-AP0122WH1	MMU-AP0124YH1-E	MMD-AP0124SPH1-E
015 type 4.5 kw (1.7HP)	MMU-AP0154HP1-E	MMU-AP0154MH1-E	MMU-AP0152WH1	MMU-AP0154SH1-E	MMD-AP0154SPH1-E
018 type 5.6 kw (2HP)	MMU-AP0184HP1-E	MMU-AP0184MH1-E	MMU-AP0182WH1	MMU-AP0184SH1-E	MMD-AP0184SPH1-E
024 type 7.1 kw (2.5HP)	MMU-AP0244HP1-E		MMU-AP0242WH1	MMU-AP0244SH1-E	MMD-AP0244SPH1-E
027 type 8.0 kw (3HP)	MMU-AP0274HP1-E		MMU-AP0272WH1		MMD-AP0274SPH1-E
030 type 9.0 kw (3.2HP)	MMU-AP0304HP1-E		MMU-AP0302WH1		
036 type 11.2 kw (4HP)	MMU-AP0364HP1-E		MMU-AP0362WH1		
048 type 14.0 kw (5HP)	MMU-AP0484HP1-E		MMU-AP0482WH1		
056 type 16.0 kw (6HP)	MMU-AP0564HP1-E		MMU-AP0562WH1		



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

PMV kit required for quiet application



Cooling capacity (HP equivalent)	Floor standing type	High wall type 3 series	Ceiling type
007 type 2.2 kw (0.8HP)		MMK-AP0073H1	
009 type 2.8 kw (1HP)		MMK-AP0093H1	
012 type 3.6 kw (1.25HP)		MMK-AP0123H1	
015 type 4.5 kw (1.7HP)	MMF-AP0156H1-E	MMK-AP0153H1	MMC-AP0158HP1-E
018 type 5.6 kw (2HP)	MMF-AP0186H1-E	MMK-AP0183H1	MMC-AP0188HP1-E
024 type 7.1 kw (2.5HP)	MMF-AP0246H1-E	MMK-AP0243H1	MMC-AP0248HP1-E
027 type 8.0 kw (3HP)	MMF-AP0276H1-E		MMC-AP0278HP1-E
030 type 9.0 kw (3.2HP)			
036 type 11.2 kw (4HP)	MMF-AP0366H1-E		MMC-AP0368HP1-E
048 type 14.0 kw (5HP)	MMF-AP0486H1-E		MMC-AP0488HP1-E
056 type 16.0 kw (6HP)	MMF-AP0566H1-E		MMC-AP0568HP1-E



Cooling capacity (HP equivalent)	Air-to-air heat exchanger with DX-coil type	Air-to-air heat exchanger with DX coil and humid filter
007 type 2.2 kw (0.8HP)		
009 type 2.8 kw (1HP)		
012 type 3.6 kw (1.25HP)	MMD-VN502HEX1E**	MMD-VNK502HEX1E**
015 type 4.5 kw (1.7HP)		
018 type 5.6 kw (2HP)	MMD-VN802HEX1E**	MMD-VNK802HEX1E**
024 type 7.1 kw (2.5HP)	MMD-VN1002HEX1E**	MMD-VNK1002HEX1E**
027 type 8.0 kw (3HP)		
030 type 9.0 kw (3.2HP)		
036 type 11.2 kw (4HP)		
048 type 14.0 kw (5HP)		
056 type 16.0 kw (6HP)		

Air volume	Air-to-air heat exchanger*
150 m³/h	VN-M150HE
250 m³/h	VN-M250HE
350 m³/h	VN-M350HE
500 m³/h	VN-M500HE
650 m³/h	VN-M650HE
800 m³/h	VN-M800HE
1000 m³/h	VN-M1000HE
1500 m³/h	VN-M1500HE
2000 m³/h	VN-M2000HE

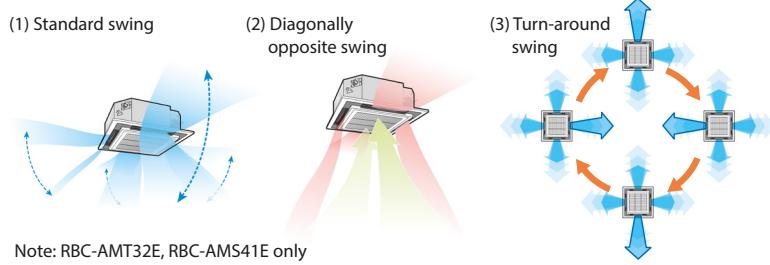
*: Does not connect to refrigerant piping from outdoor unit.
Control wires can be connected.

** Note: Only available for MCY-MHP0404, 0504, 0604HS(8)



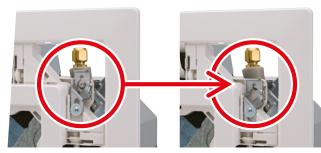
Individual louver control

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



Easy installation

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



RBC-U31PGP(W)-E

Model name		MMU-	AP0094HP1-E	AP0124HP1-E	AP0154HP1-E	AP0184HP1-E	AP0244HP1-E	AP0274HP1-E	AP0304HP1-E	AP0364HP1-E	AP0484HP1-E	AP0564HP1-E	
Cooling/Heating capacity*1		(kW)	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0	
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220~240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)										
	Power consumption 50 Hz/60 Hz	(kW)	0.021/0.021	0.023/0.023	0.026/0.026	0.036/0.036	0.043/0.043	0.088/0.088	0.112/0.112	0.112/0.112	0.112/0.112	0.112/0.112	
Appearance (Ceiling panel)		Model	RBC-U31PGP(W)-E										
External dimensions: Main unit (Ceiling panel)*	Height	(mm)	256 (30)*						319 (30)*				
	Width	(mm)	840 (950)*										
	Depth	(mm)	840 (950)*										
Total weight: Main unit (Ceiling panel)*		(kg)	18 (4)*	20 (4)*				25 (4)*					
Fan unit	Standard air flow (High/Mid/Low)	(m³/h)	800/730/680	930/830/790	1050/920/800	1290/920/800	1320/1110/850	1970/1430/1070	2130/1430/1130	2130/1520/1230			
	Motor output	(W)	14			20			68	72			
Connecting pipe	Gas side	(mm)	ø9.5	ø12.7			ø15.9						
	Liquid side	(mm)	ø6.4			ø9.5							
	Drain port (nominal dia.)	(mm)	25 (Polyvinyl chloride tube)										
Sound pressure level*2 (High/Mid/Low) (dB(A))			30/29/27	31/29/27	32/29/27	35/31/28	38/33/30	43/38/32	46/38/33	46/40/33			
Sound power level (High/Mid/Low) (dB(A))			45/44/42	46/44/42	47/44/42	50/46/43	53/48/45	58/53/47	61/53/48	61/55/48			

* Figures in parentheses are for ceiling panels.

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

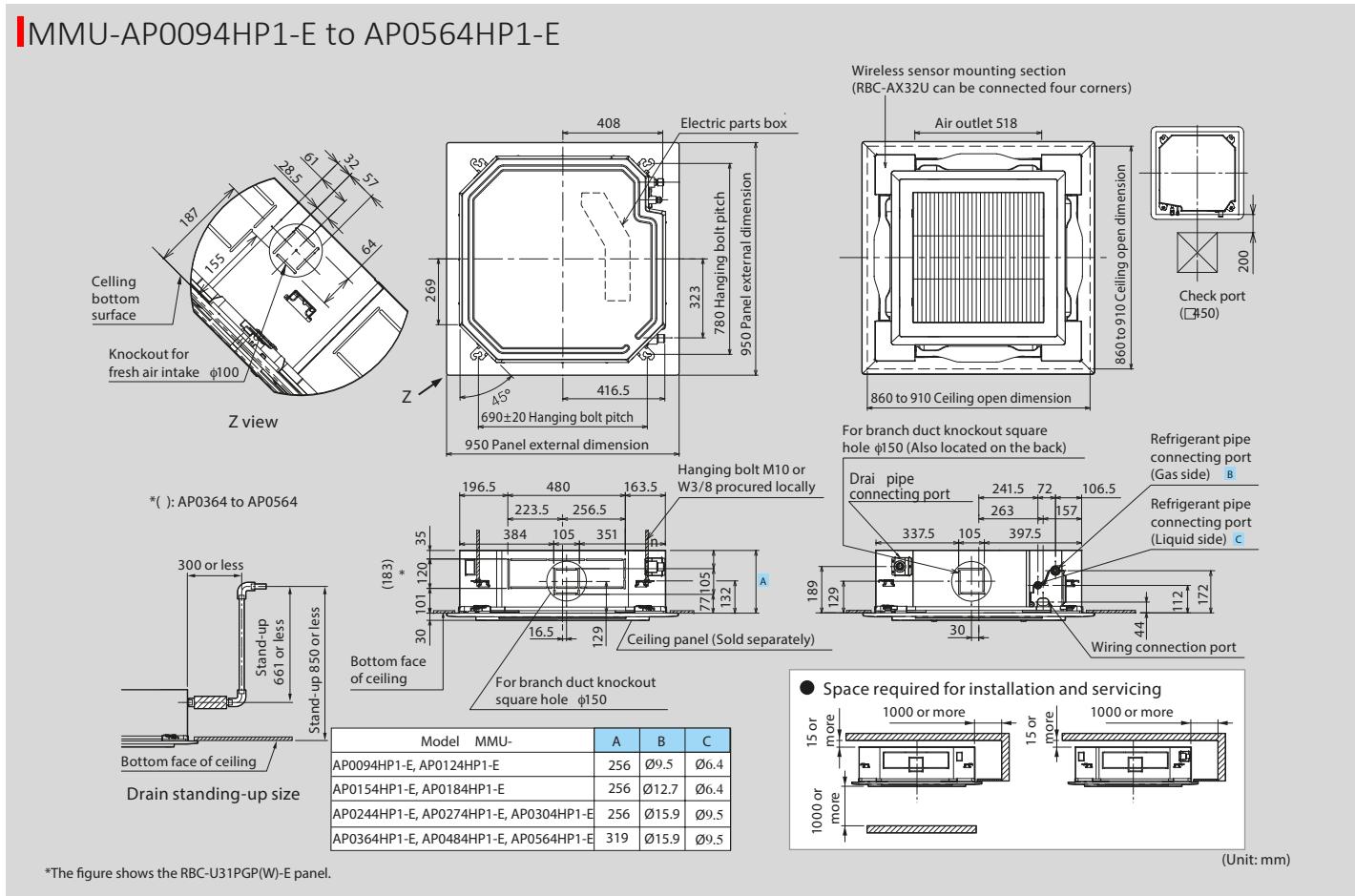
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

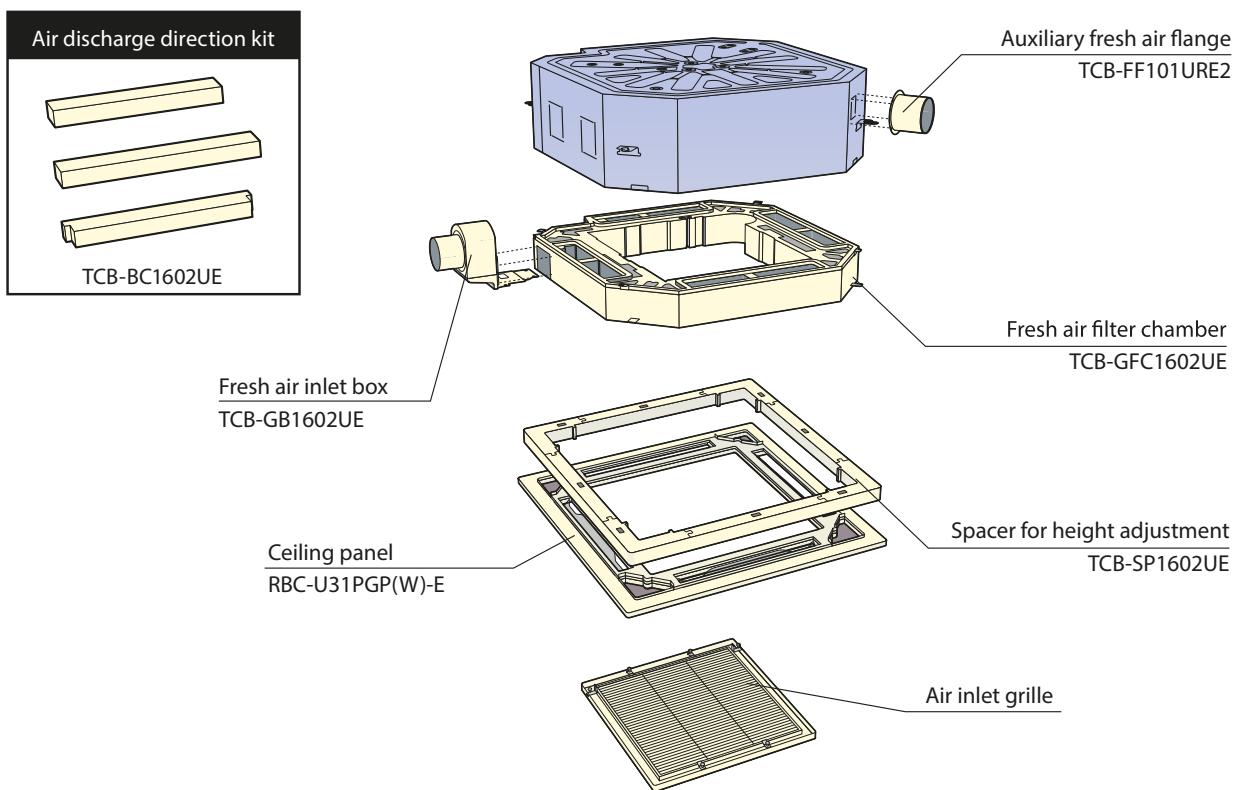
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

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

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



Options





Perfect for grid system ceiling

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



RBC-UM11PG(W)-E



Compact 4-way Cassette (600x600) Type

MMU-AP***4MH1-E

Designed for simple & easy installation and maintenance

The slim design is only 268 mm in height even when an electrical box is located inside the unit.

Easy installation is also possible using the panel adjust pocket. Use the "adjust pocket" function for fine adjustments after installation.

Available for ceilings up to 3.5 m in height.

The drain-checking hole makes it possible to check the drain pan through the side case.



Drain-checking hole

Model name	MMU-	AP0074MH1-E	AP0094MH1-E	AP0124MH1-E	AP0154MH1-E	AP0184MH1-E		
Cooling/Heating capacity* ¹	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3		
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)						
	Power consumption 50 Hz/60 Hz (kW)	0.034/0.034	0.036/0.036	0.038/0.038	0.041/0.041	0.052/0.052		
Appearance (Ceiling panel)	Model	RBC-UM11PG(W)-E						
External dimensions: Main unit (Ceiling panel)*	Height (mm)	268 (27)*						
	Width (mm)	575 (700)*						
	Depth (mm)	575(700)*						
Total weight: Main unit (Ceiling panel)*	(kg)	17 (3)*						
Fan unit	Standard air flow (High/Mid/Low) (m ³ /h)	552/462/378	570/468/378	590/504/402	660/552/468	762/642/522		
	Motor output (W)	60						
Connecting pipe	Gas side (mm)	ø9.5			ø12.7			
	Liquid side (mm)	ø6.4						
	Drain port (nominal dia.)	25 (Polyvinyl chloride tube)						
Sound pressure level* ²	(High/Mid/Low) (dB(A))	36/32/28	37/33/28	37/33/29	40/35/30	44/39/34		
Sound power level	(High/Mid/Low) (dB(A))	51/47/43	52/48/43	52/48/44	55/50/45	59/54/49		

* Figures in parentheses are for ceiling panels.

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

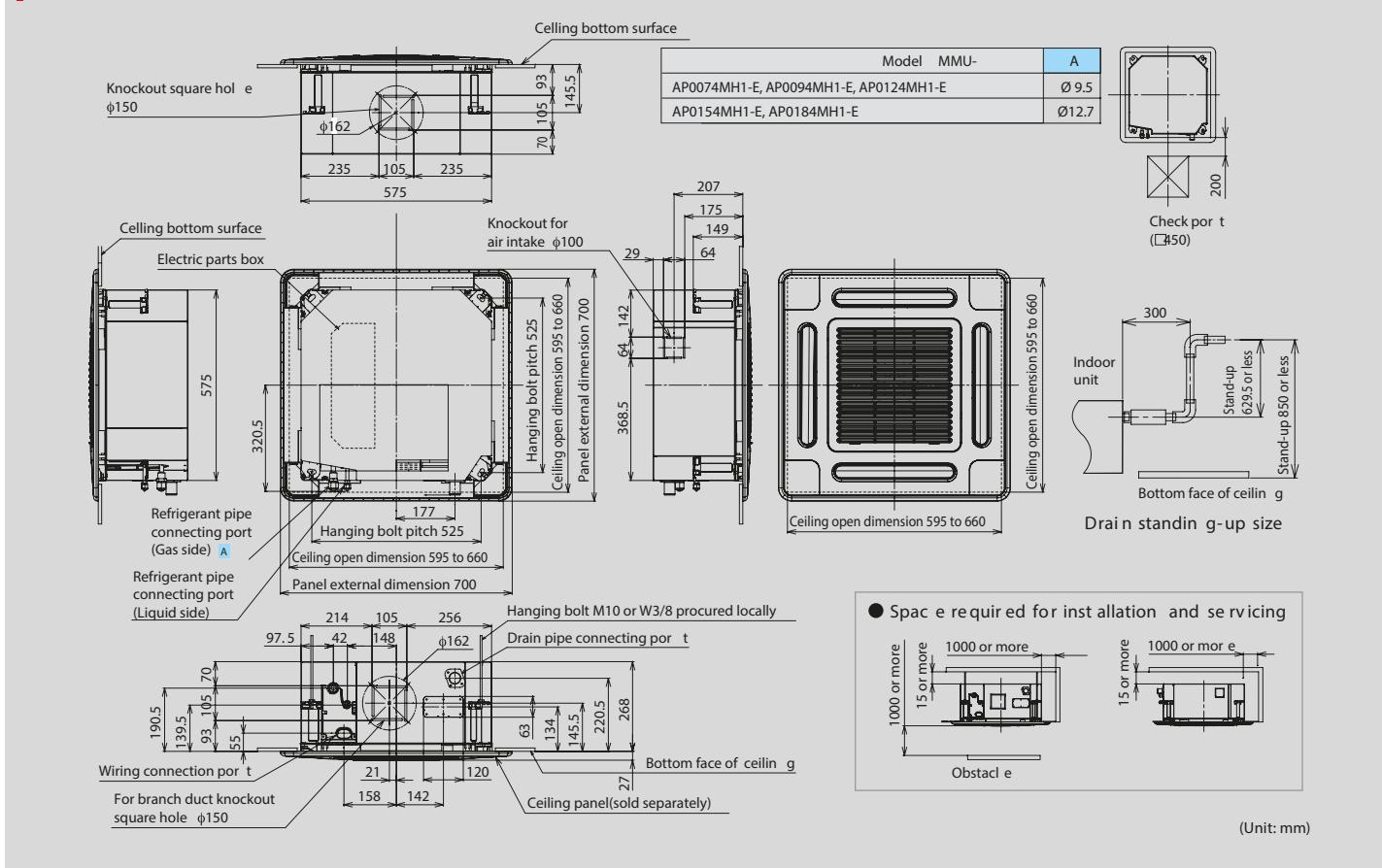
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

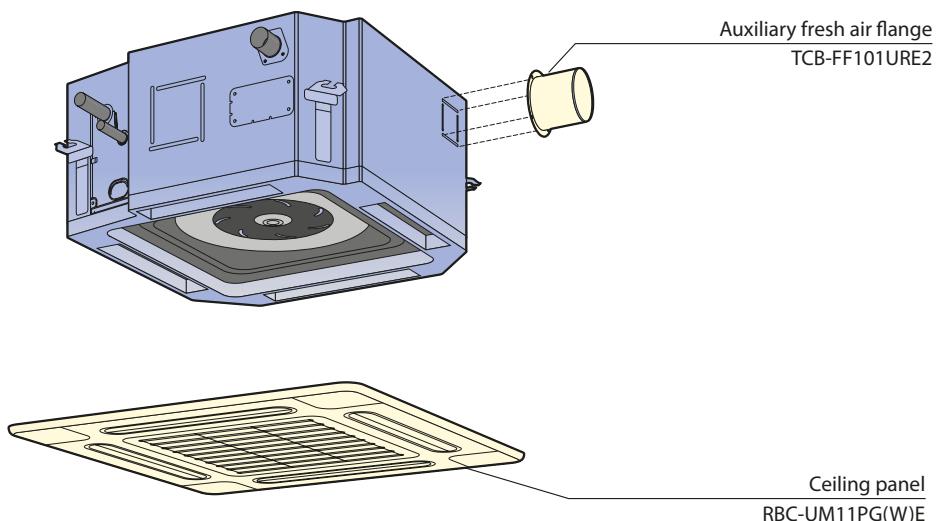
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

IMMU-AP0074MH1-E to AP0184MH1-E



Options





Slim and compact unit

Unified the width of ceiling panel to 680mm.

Condensate drain pump included.

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

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

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

* Figures in parentheses are for ceiling panels.

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

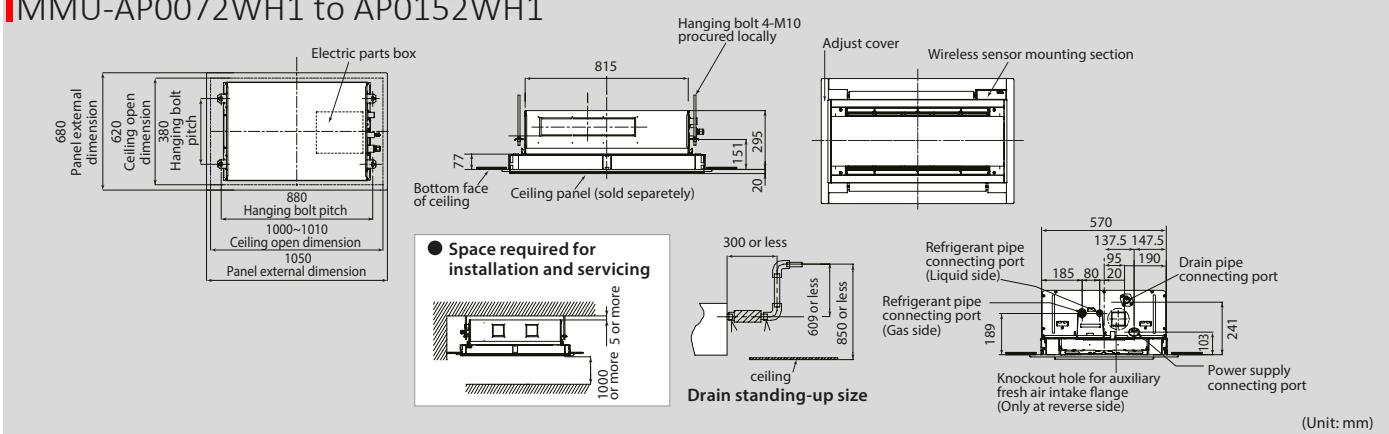
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

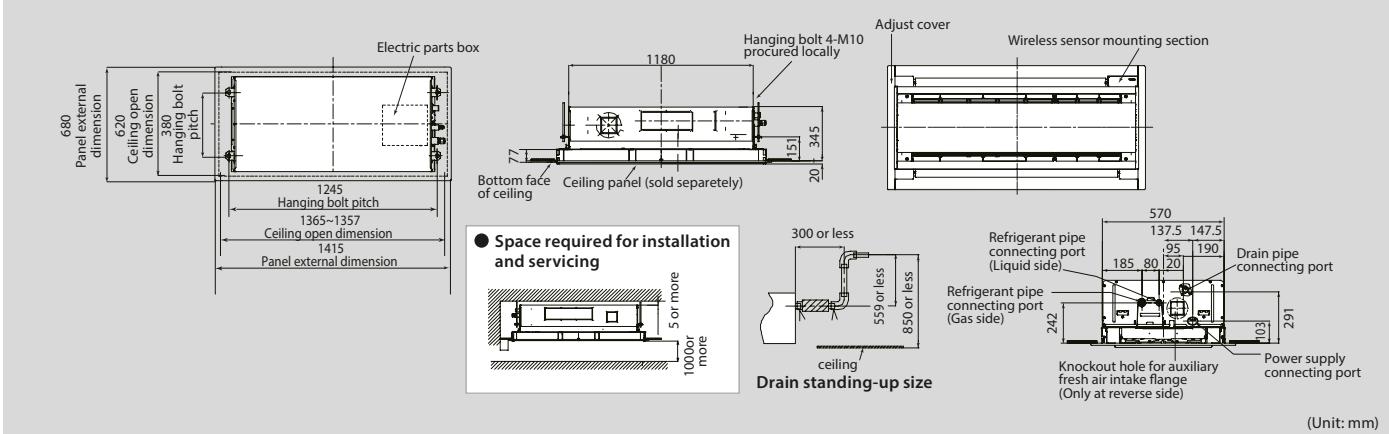
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

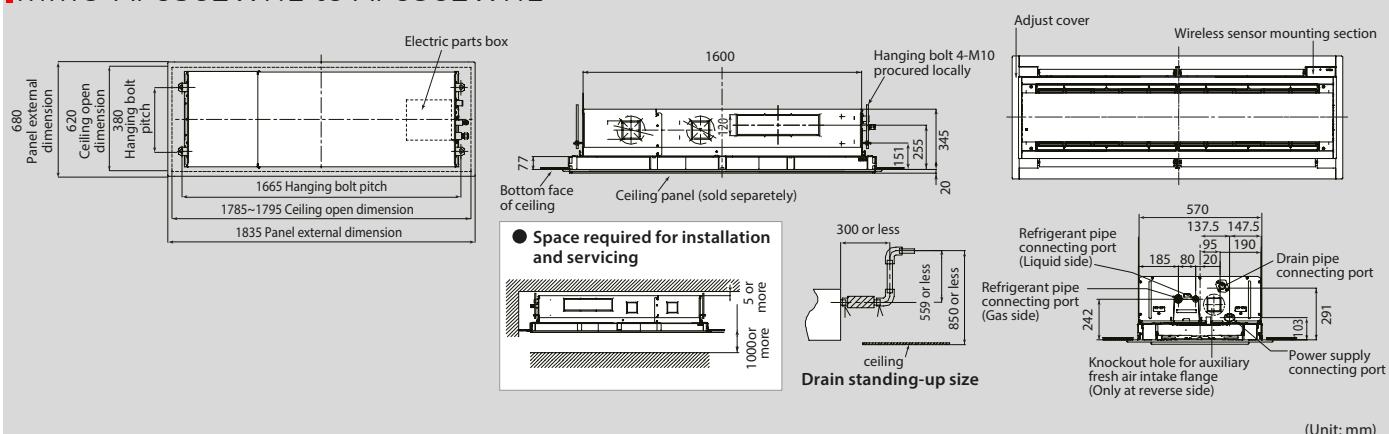
MMU-AP0072WH1 to AP0152WH1



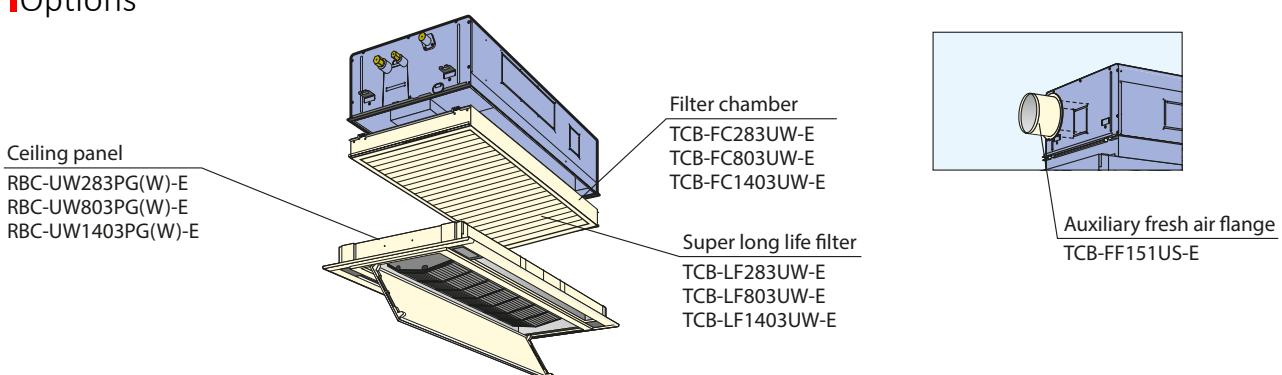
MMU-AP0182WH1 to AP0302WH1



MMU-AP0362WH1 to AP0562WH1



Options





1-way Air Discharge Cassette Type

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



The perfect choice for hotels and reception areas

Silent sound design ensures the quiet required for the office.

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

Able to blow air straight out.

Condensate drain pump included.

Long-life filters fitted as standard.

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

Preparations/connection possible with a circle duct flange.

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

* Figures in parentheses are for ceiling panels.

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

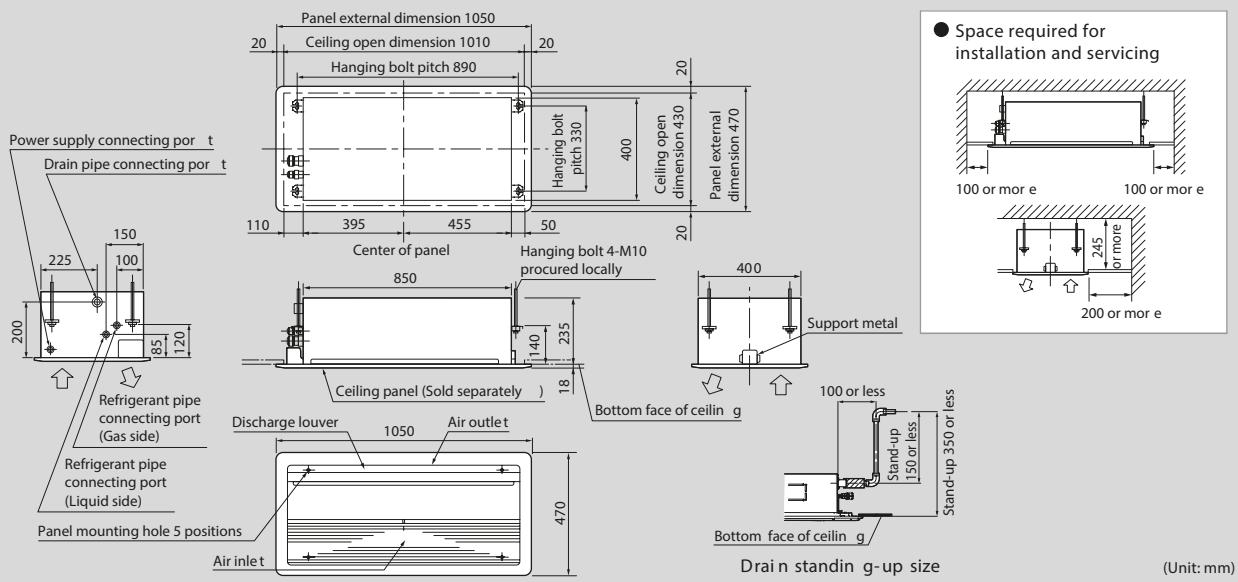
The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

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

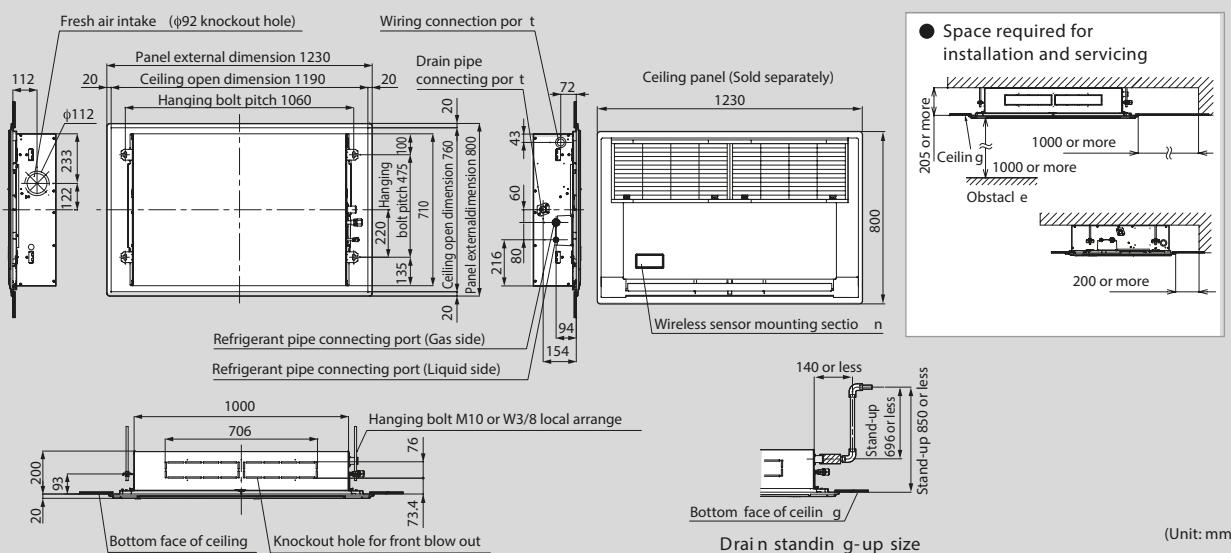
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

IMMU-AP0074YH1-E to AP0124YH1-E



(Unit: mm)

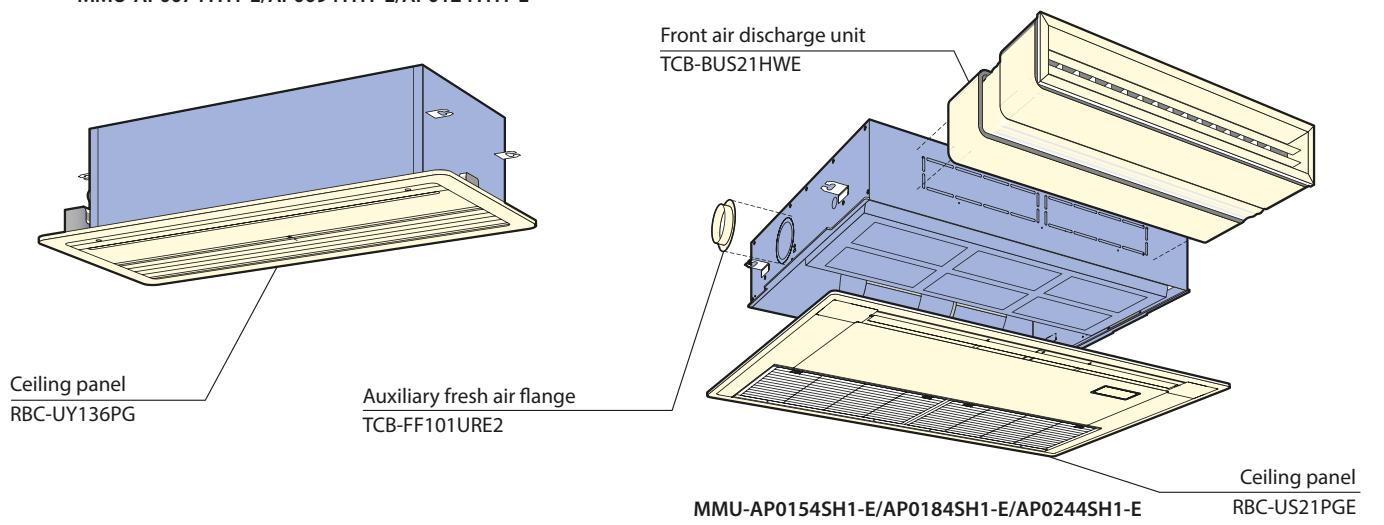
IMMU-AP154SH1-E to AP0244SH1-E



(Unit: mm)

Options

MMU-AP0074YH1-E/AP0094YH1-E/AP0124YH1-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.

Model name		MMD-	AP0074SPH1-E	AP0094SPH1-E	AP0124SPH1-E	AP0154SPH1-E	AP0184SPH1-E	AP0244SPH1-E	AP0274SPH1-E			
Cooling/Heating capacity* ¹		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0			
Electrical characteristics	Power supply	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)										
	Power consumption 50 Hz/60 Hz	(kW)	0.039/0.037	0.043/0.041	0.045/0.043	0.054/0.052		0.105//0.105				
External dimensions	Height	(mm)	210									
	Width	(mm)	845					1,140				
	Depth	(mm)	645									
Total weight		(kg)	22			23			29			
Fan unit	Standard air flow (High/Mid/Low)	(m ³ /h)	540/470/400	600/520/450		690/600/520	780/680/580	1,080/1,000/900				
	Motor output	(W)	60						120			
	External static pressure	(Pa)	6-16-31-46 (4 steps)	5-15-30-45 (4 steps)			4-14-29-44 (4 steps)	2-12-22-42 (4 steps)				
Connecting pipe	Gas side	(mm)	ø9.5			ø12.7			ø15.9			
	Liquid side	(mm)	ø6.4						ø9.5			
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)									
Sound pressure level* ² (High/Med./Low)	Under air inlet	(dB(A))	36/33/30		38/35/32	39/36/33	40/38/36	49/47/44				
	Back air inlet	(dB(A))	28/26/24		29/27/25	32/30/28	33/31/29	38/36/33				
Sound power level (High/Med./Low)	Under air inlet	(dB(A))	51/48/45		53/50/47	54/51/48	55/53/51	64/62/59				
	Back air inlet	(dB(A))	43/41/39		44/42/40	47/45/43	48/46/44	53/51/48				

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

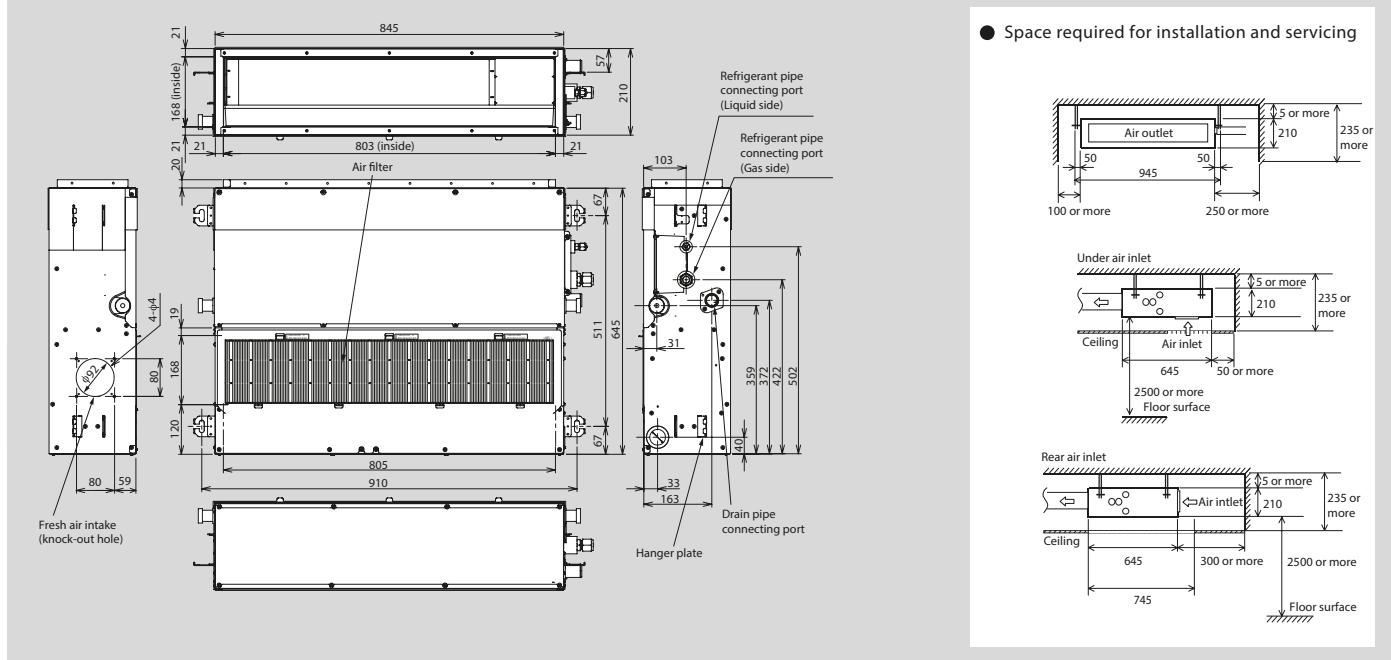
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

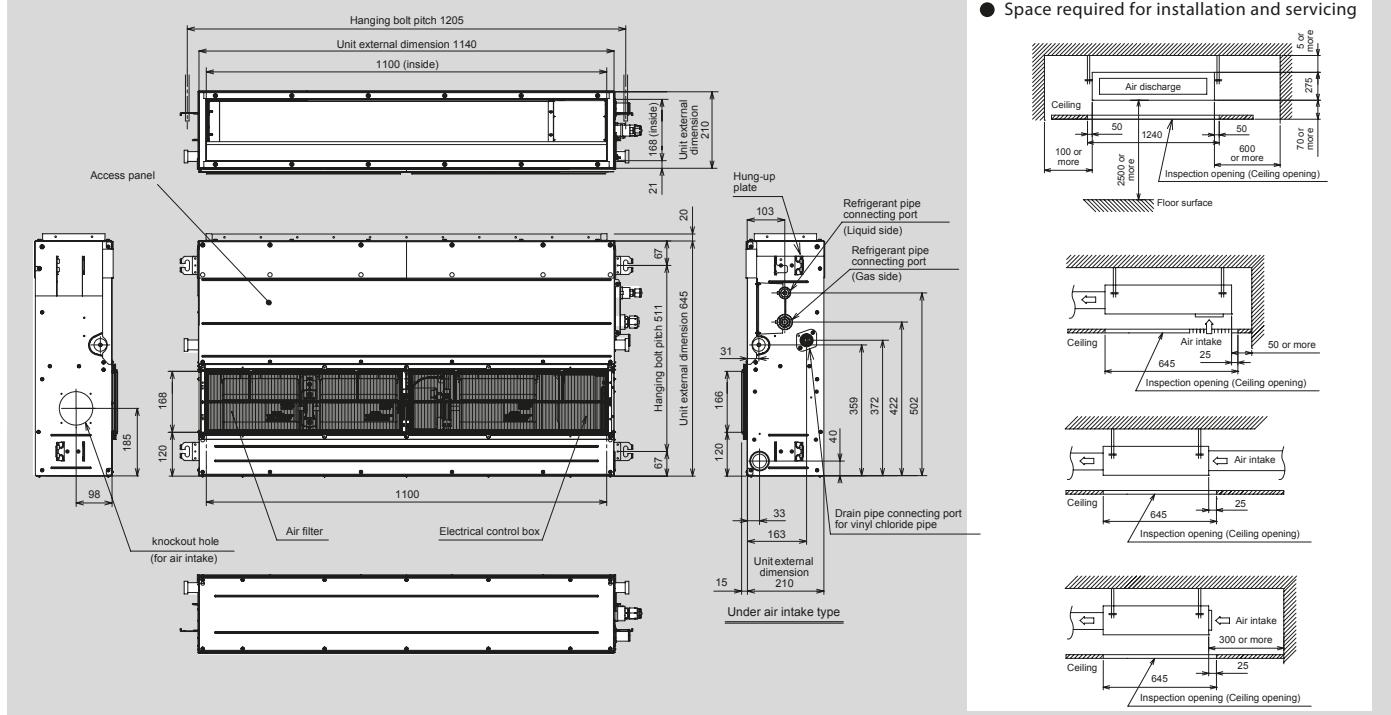
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

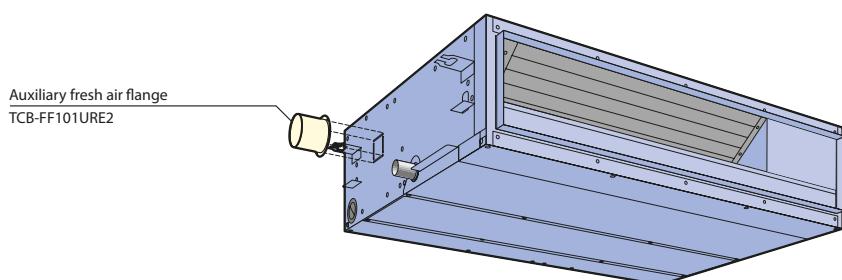
MMD-AP0074SPH1-E to AP0184SPH1-E



MMD-AP0244SPH1-E to AP0274SPH1-E



Options





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.

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

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

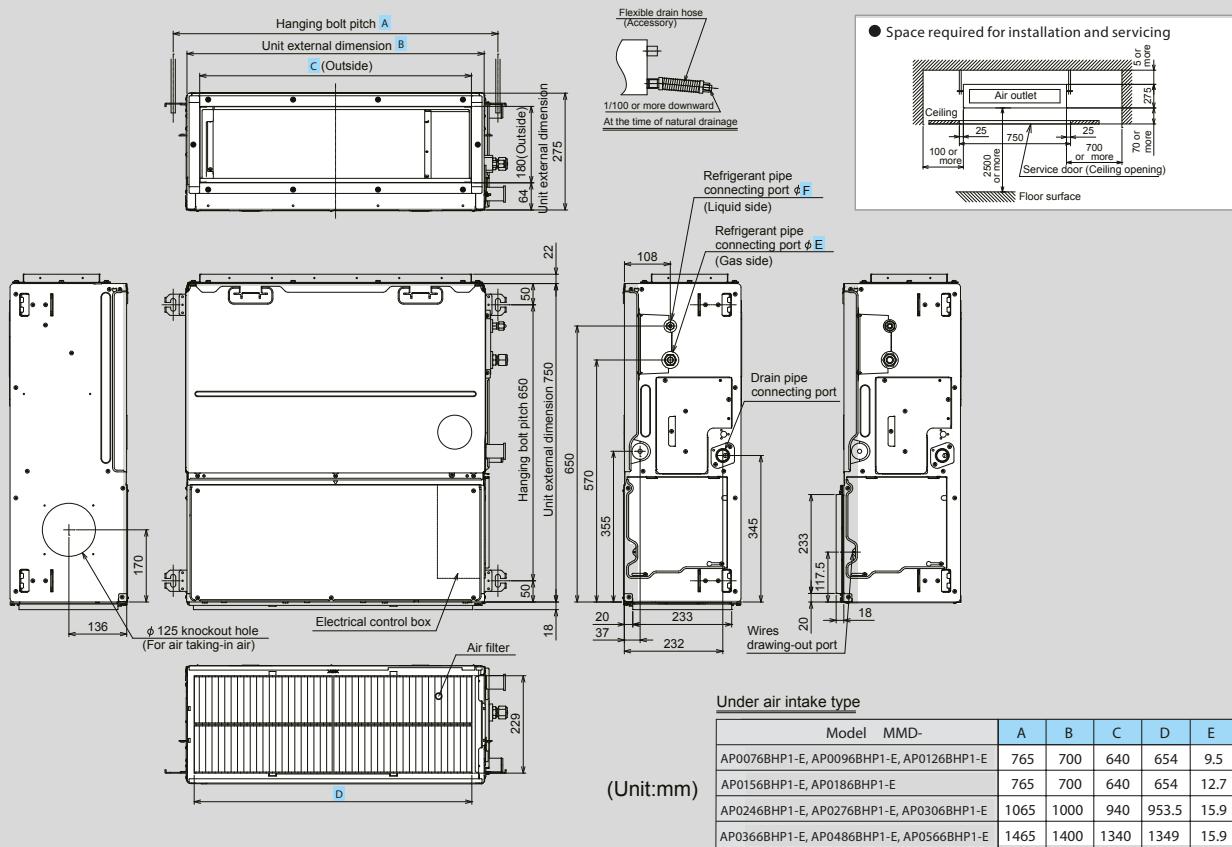
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

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

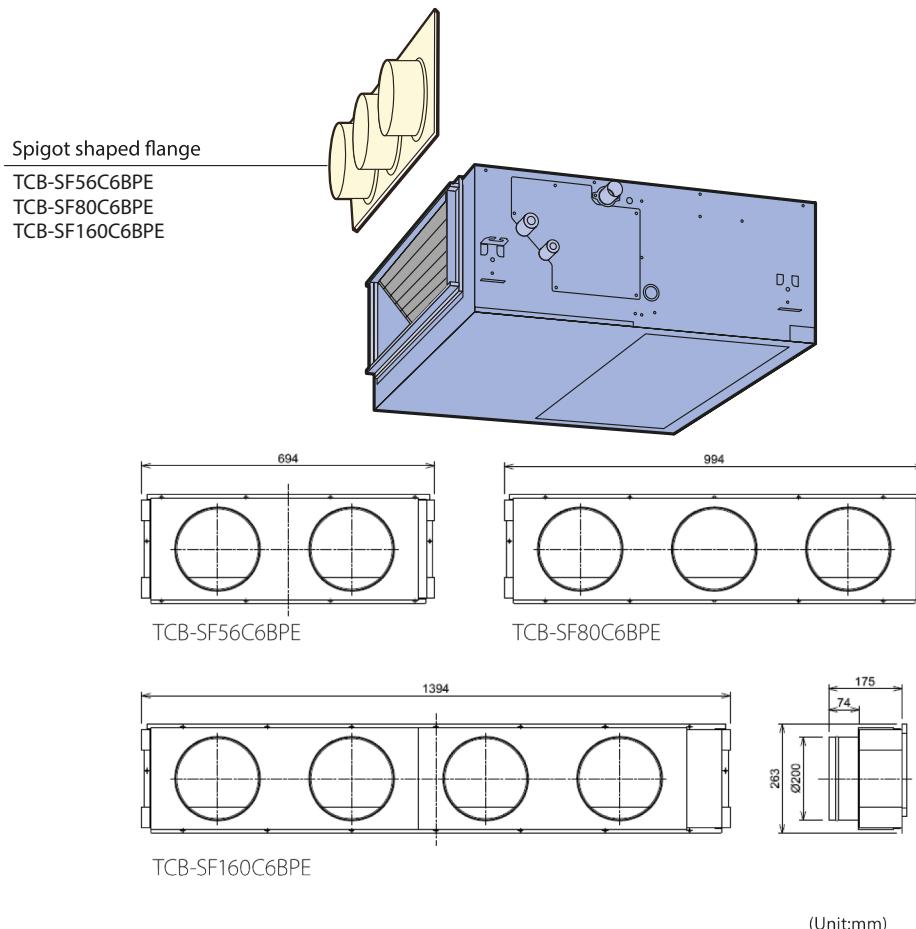
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

MMD-AP0076BHP1-E to AP0566BHP1-E



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

Options



(Unit:mm)



Concealed Duct High Static Pressure Cassette Type

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:

- Long life filter kit
- Drain pump kit

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

Construction characteristics

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

Model name		MMD-	AP0186HP1-E	AP0246HP1-E	AP0276HP1-E	AP0366HP1-E	AP0486HP1-E	AP0566HP1-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			
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)								
	Power consumption 50 Hz/60 Hz		(kW)	0.085	0.115	0.198	0.230	0.290			
External dimensions	Height		(mm)	298							
	Width		(mm)	1,000		1,400					
	Depth		(mm)	750							
Total weight			(kg)	34		43					
Fan unit	Standard air flow (Mid/Low)	(m³/h)	800 (660/550)	1,200 (970/800)	1,920 (1,560/1,340)	2,100 (1,740/1,420)	2,400 (2,040/1,660)				
	Motor output	(W)	250		350						
	External static pressure (factory setting)	(Pa)	100								
	External static pressure	(Pa)	50-75-125-150-175-200 (7steps)								
Connecting pipe	Gas side	(mm)	ø12.7	ø15.9							
	Liquid side	(mm)	ø6.4	ø9.5							
	Drain port	(nominal dia.)	25 (Polyvinyl chloride tube)								
Sound pressure level*2 (High/Mid/Low)			(dB(A))	37 (32/30)	38 (34/31)	41 (37/34)	42 (40/35)	45 (42/37)			
Sound power level (High/Mid/Low)			(dB(A))	60 (54/50)	60 (55/51)	62 (57/53)	65 (62/54)	68 (64/56)			

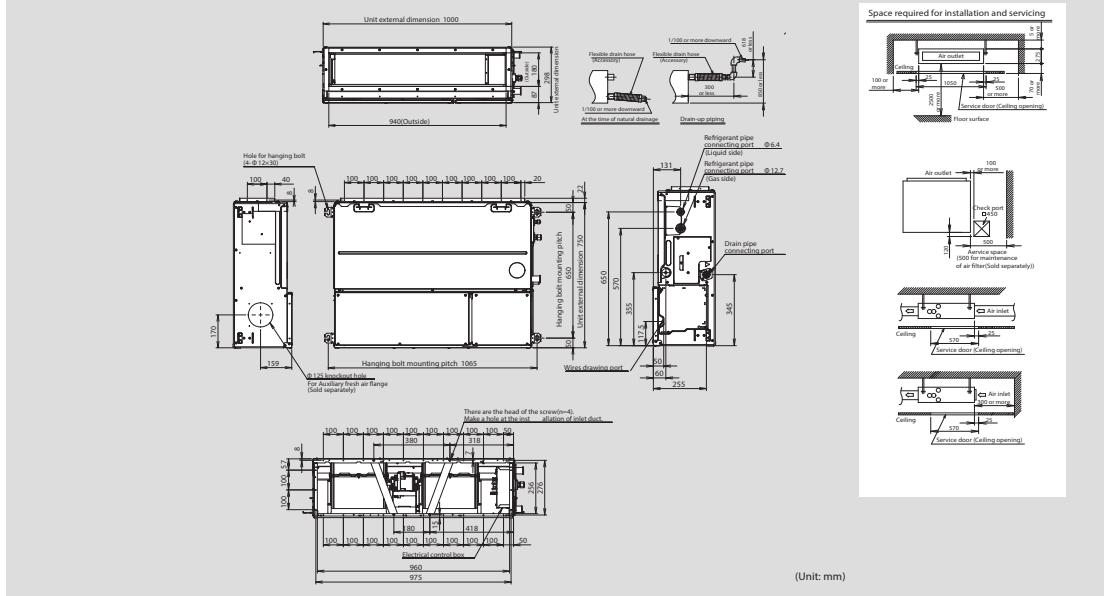
Note 1 : The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping.
The reference piping consists of 5m of main piping and 2.5 of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

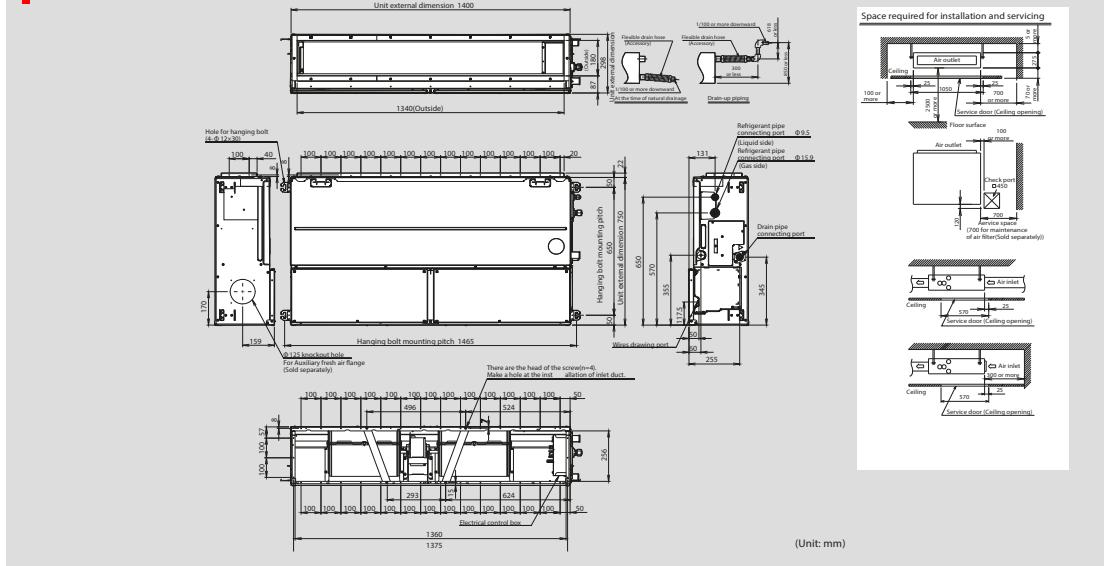
Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

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

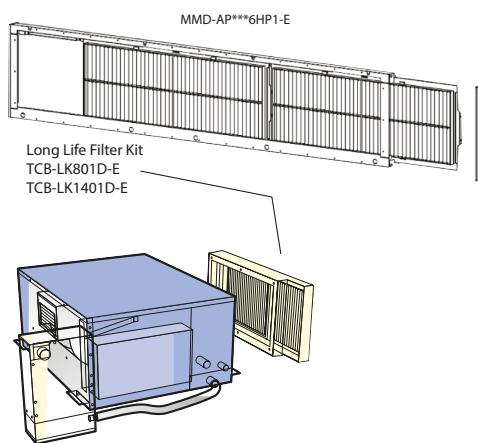
MMD-AP0186HP1-E to AP0276HP1-E



MMD-AP0366HP1-E to AP0566HP1-E



Options





Features

Elegant & simple design makes this unit a perfect fit for shops, office buildings, and luxury apartments.

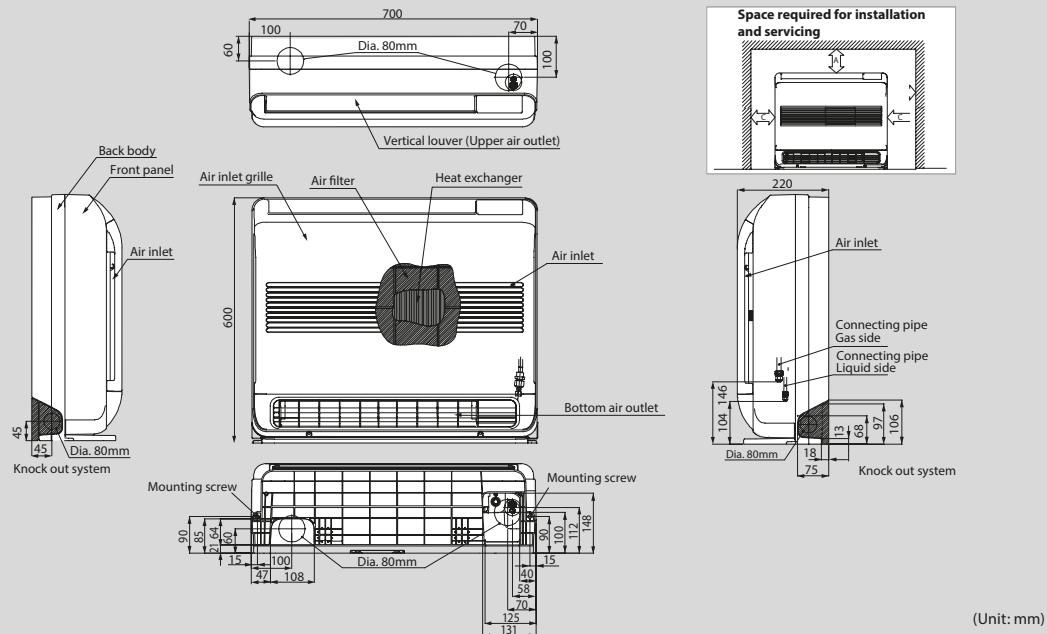
Bottom flow functionality ensures comfortable air bi-flow for an advantage in heating and floor warming.

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



Remote controller

MML-AP0074NH1-E to AP0184NH1-E



Model name		MML-	AP0074NH1-E	AP0094NH1-E	AP0124NH1-E	AP0154NH1-E	AP0184NH1-E
Cooling/Heating capacity*1		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220~240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)				
	Power consumption 50 Hz/60 Hz	(kW)	0.021		0.025	0.034	0.052
External dimensions	Height		(mm) 600				
	Width		(mm) 700				
	Depth		(mm) 220				
Total weight		(kg)	17				
Fan unit	Standard air flow (High/Mid/Low)		(m³/h) 510/366/282		552/408/324	624/468/384	726/528/426
	Motor output		(W) 41				
Connecting pipe	Gas side		(mm) ø9.5			ø12.7	
	Liquid side		(mm) ø6.4				
	Drain port	(nominal dia.)	16 (Polyvinyl chloride tube)				
Sound pressure level*2 (High/Mid/Low)		(dB(A))	38/32/26		40/34/29	43/37/31	47/40/34
Sound power level	(High/Low)	(dB(A))	53/41		55/44	58/46	62/55

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

Normally, the values measured in the actual operating environment become larger than the indicated values.

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

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



Slim & compact design

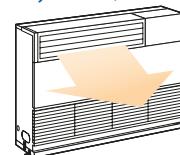
Under-window mounting does not block lighting.

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

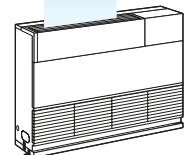
Slim & compact design

Distribution can be reversed to suit occupant preference.

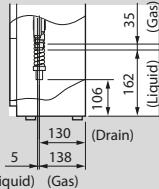
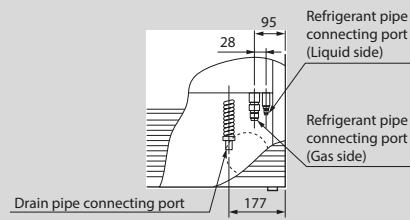
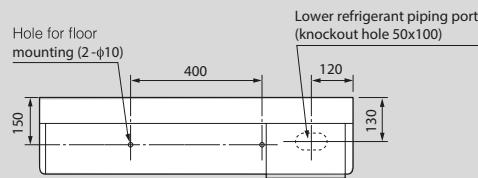
Air blown from front panel
(factory default)



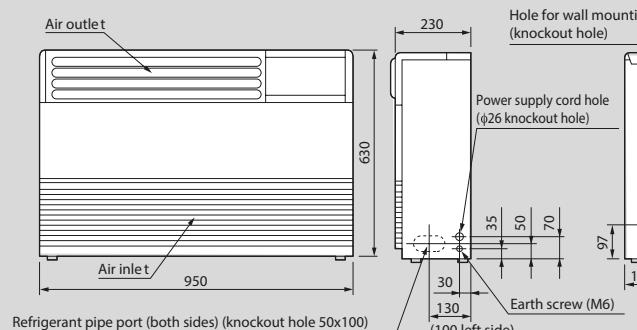
Air blown from top



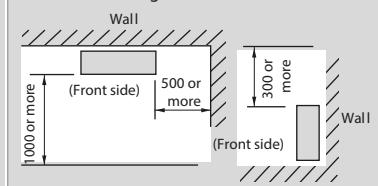
MML-AP0074BH1-E to AP0244BH1-E



Piping positional drawing



● Space required for installation and servicing



(Unit: mm)

Model name	MML-	AP0074H1-E	AP0094H1-E	AP0124H1-E	AP0154H1-E	AP0184H1-E	AP0244H1-E
Cooling/Heating capacity*1	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220~240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)					
	Power consumption 50 Hz/60 Hz	(kW)	0.056/0.053	0.092/0.092		0.102/0.113	
External dimensions	Height	(mm)			630		
	Width	(mm)			950		
	Depth	(mm)			230		
Total weight	(kg)		37			40	
Fan unit	Standard air flow (High/Mid/Low)	(m³/h)	480/420/360		900/780/650		1080/930/780
	Motor output	(W)		45			70
Connecting pipe	Gas side	(mm)	ø9.5		ø12.7		ø15.9
	Liquid side	(mm)		ø6.4			ø9.5
	Drain port	(nominal dia.)		20 (Polyvinyl chloride tube)			
Sound pressure level*2 (High/Mid/Low)	(dB(A))	39/37/35		45/41/38		49/44/39	
Sound power level	(dB(A))	54/52/50		60/56/53		64/59/54	

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

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

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

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

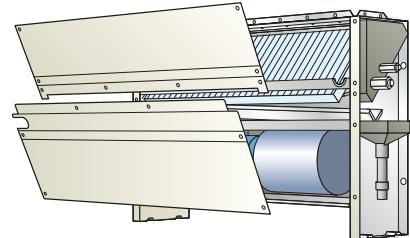


Cool air makes for a pleasant indoor environment

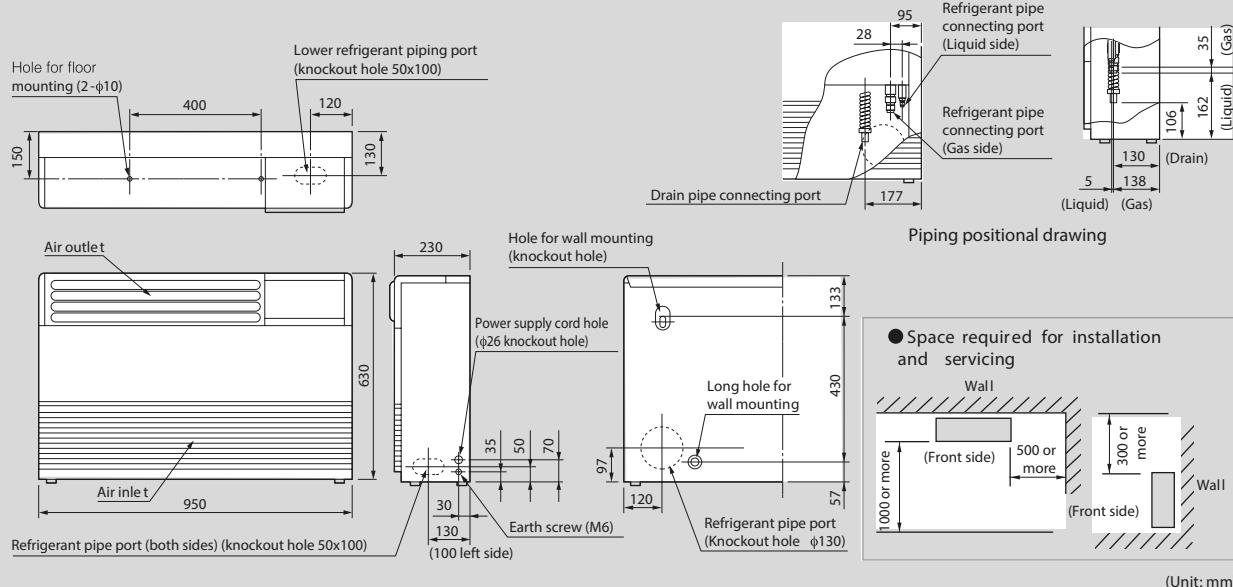
Install it under a window and air-condition any room effectively.

Easy maintenance

Simplified design of fan and drainage pipe eases maintenance.



MML-AP0074BH1-E to AP0244BH1-E



Model name		MML-	AP0074BH1-E	AP0094BH1-E	AP0124BH1-E	AP0154BH1-E	AP0184BH1-E	AP0244BH1-E
Cooling/Heating capacity* ¹		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics		Power requirements	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)		0.056/0.058		0.090/0.096	0.095/0.110
External dimensions		Height	(mm)		600		1045	
Width		(mm)	745		1045		1045	
Depth		(mm)	220		220		220	
Total weight		(kg)	21		29		29	
Fan unit	Standard air flow (High/Mid/Low)	(m ³ /h)	460/400/300		740/600/490		950/790/640	
	Motor output	(W)	19		70		70	
Connecting pipe	Gas side	(mm)	ø9.5		ø12.7		ø15.9	
	Liquid side	(mm)	ø6.4		ø6.4		ø9.5	
	Drain port	(nominal dia.)	20 (Polyvinyl chloride tube)		20 (Polyvinyl chloride tube)		20 (Polyvinyl chloride tube)	
Sound pressure level* ² (High/Mid/Low)		(dB(A))	36/34/32		42/37/33		42/37/33	
Sound power level (High/Mid/Low)		(dB(A))	54/52/50		60/55/51		60/55/51	

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

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

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

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



Floor Standing Type

MMF-AP***6H1-E

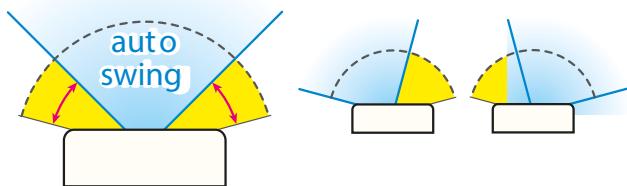
Thin profile suits interior design

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

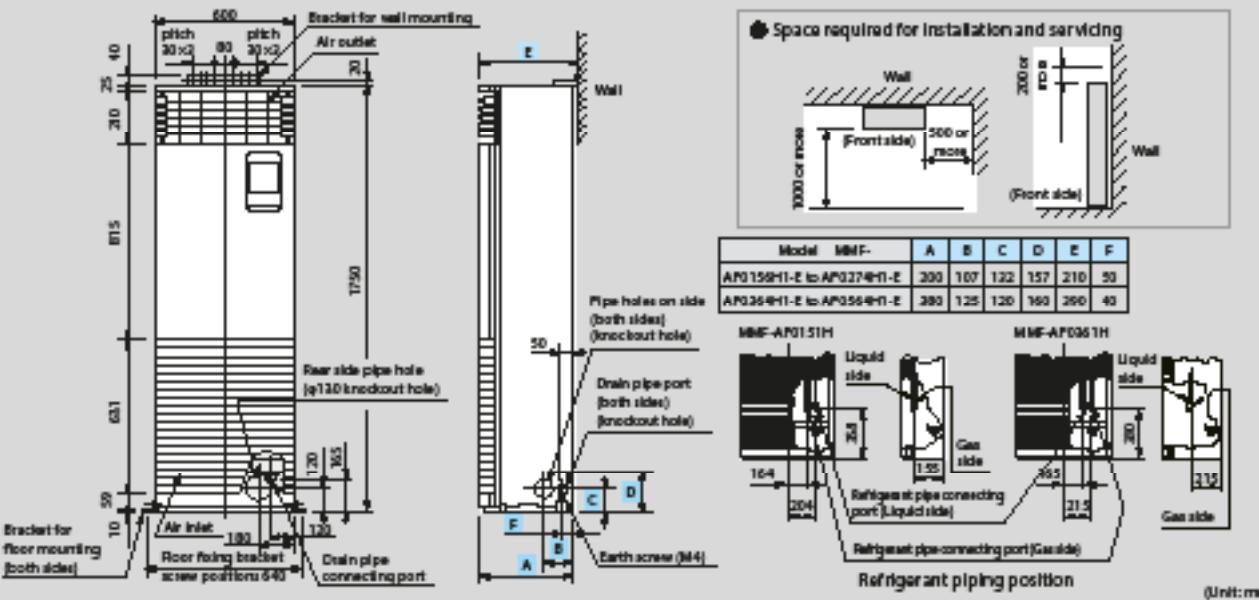
Wide outlet

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

Set the vertical angle manually.



IMMF-AP0156H1-E to AP0566H1-E



Model name		MMF-	AP0156H1-E	AP0186H1-E	AP0246H1-E	AP0276H1-E	AP0366H1-E	AP0486H1-E	AP0566H1-E		
Cooling/Heating capacity* ¹		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0		
Electrical characteristics	Power requirements		1-phase 50Hz 230V (220~240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)								
	Power consumption 50 Hz/60 Hz		(kW)		0.055	0.089		0.135	0.160		
External dimensions	Height		(mm)			1750					
	Width		(mm)			600					
	Depth		(mm)			210		390			
Total weight		(kg)	46		47		62				
Fan unit	Standard air flow (High/Mid/Low)		(m ³ /h)	900/780/660		1200/990/840		1920/1620/1380	2160/1730/1560		
	Motor output		(W)	62		62		109	109		
Connecting pipe	Gas side		(mm)	ø12.7			ø15.9				
	Liquid side		(mm)	ø6.4			ø9.5				
	Drain port		(nominal dia.)	20 (one side of male screw)							
Sound pressure level* ² (High/Mid/Low)			(dB(A))	46/42/37		49/45/39		51/46/41	54/49/44		
Sound power level (High/Mid/Low)			(dB(A))	64/60/55		67/63/57		69/64/59	72/67/62		

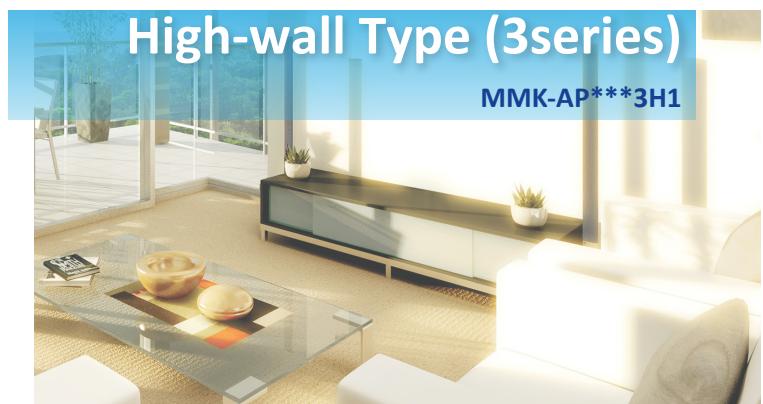
Note 1 : The capacities are measured under the conditions specified by JIS B 8615 based on the reference piping.

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

Normally, the values measured in the actual operating environment become larger than the indicated values.

Note : Rated conditions Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB/28°C WB
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB



Elegant and slim

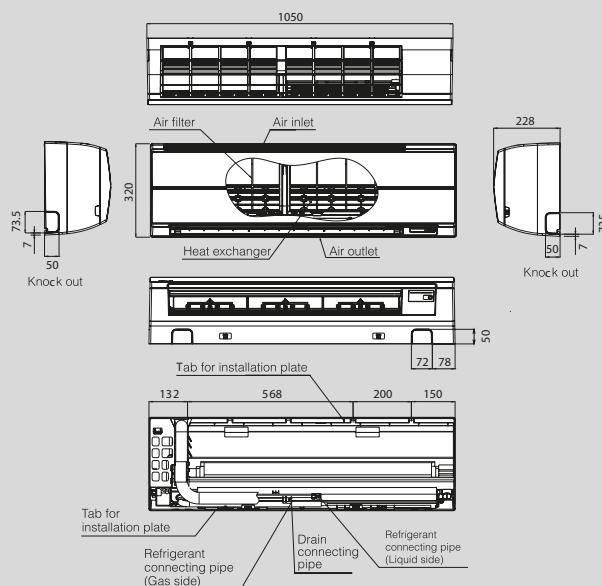
This classic high-wall is elegant and slim; it can easily blend in with any room interior.

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

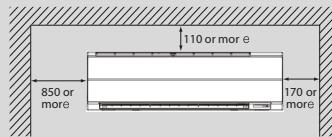


Remote controller

MMK-AP0073H1 to AP0243H1



● Space required for installation and servicing



(Unit: mm)

Model name	MMK-	AP0073H1	AP0093H1	AP0123H1	AP0153H1	AP0183H1	AP0243H1
Cooling/Heating capacity*1	(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics		Power requirements 1-phase 50Hz 230V (220-240V) (Separate power supply for indoor units required.)					
Power consumption 50 Hz	(kW)	0.018	0.021		0.043	0.050	
External dimensions		Height (mm) Width (mm) Depth (mm)					
Height	(mm)		320				
Width	(mm)		1050				
Depth	(mm)		228				
Total weight	(kg)		15				
Fan unit	Standard air flow (High/Mid/Low)	(m³/h)	570/450/390	600/480/390	840/660/540	1020/750/570	
	Motor output	(W)		30			
Connecting pipe	Gas side	(mm)	ø9.5		ø12.7	ø15.9	
	Liquid side	(mm)		ø6.4		ø9.5	
	Drain port (nominal dia.)			16 (polyvinyl chloride tube)			
Sound pressure level*2 (High/Mid/Low)	(dB(A))	35/31/28	37/32/28	41/36/33	46/39/34		
Sound power level (High/Mid/Low)	(dB(A))	50/46/43	52/47/43	56/51/48	61/54/49		

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

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

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

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

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





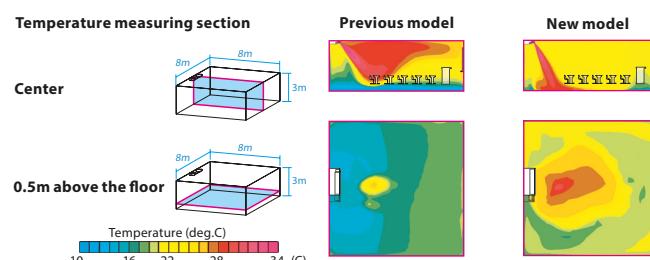
Smooth curve for pliant Shape

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

Smooth curve for pliant Shape

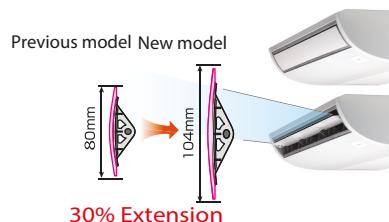
New fan has adopted the turbulence prevention rib to optimize the ventilating way.

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



New Designed Wide Flap

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



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.

Model name	MMC-	AP0158HP1-E	AP0188HP1-E	AP0248HP1-E	AP0278HP1-E	AP0368HP1-E	AP0488HP1-E	AP0568HP1-E						
Cooling/Heating capacity* ¹	(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0						
Electrical characteristics	Power requirements	1-phase 50Hz 230V (220~240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)												
	Power consumption 50 Hz/60 Hz (kW)	0.033/0.033	0.034/0.034	0.067/0.067	0.083/0.083	0.111/0.111								
External dimensions	Height (mm)	235												
	Width (mm)	950		1,269		1,586								
	Depth (mm)	690												
Total weight		(kg)	24	30	37									
Fan unit	Standard air flow (High/Mid/Low) (m ³ /h)	840 /690/540	960 /720/540	1440 /1020/750	1860 /1350/1020	1860 /1530/1200	2040 /1650/1260							
	Motor (W)	94		94		139								
Connecting pipe	Gas side (mm)	ø12.7												
	Liquid side (mm)	ø6.4												
	Drain port (nominal dia.)	20 (Polyvinyl chloride tube)												
Sound pressure level* ² (High/Mid/Low)		(dB(A))	36/34/28	37/35/28	41/36/29	44/38/32	44/41/35	46/42/36						

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

The reference piping consists of 5 m of main piping and 2.5 m of branch piping connected with 0 m height.

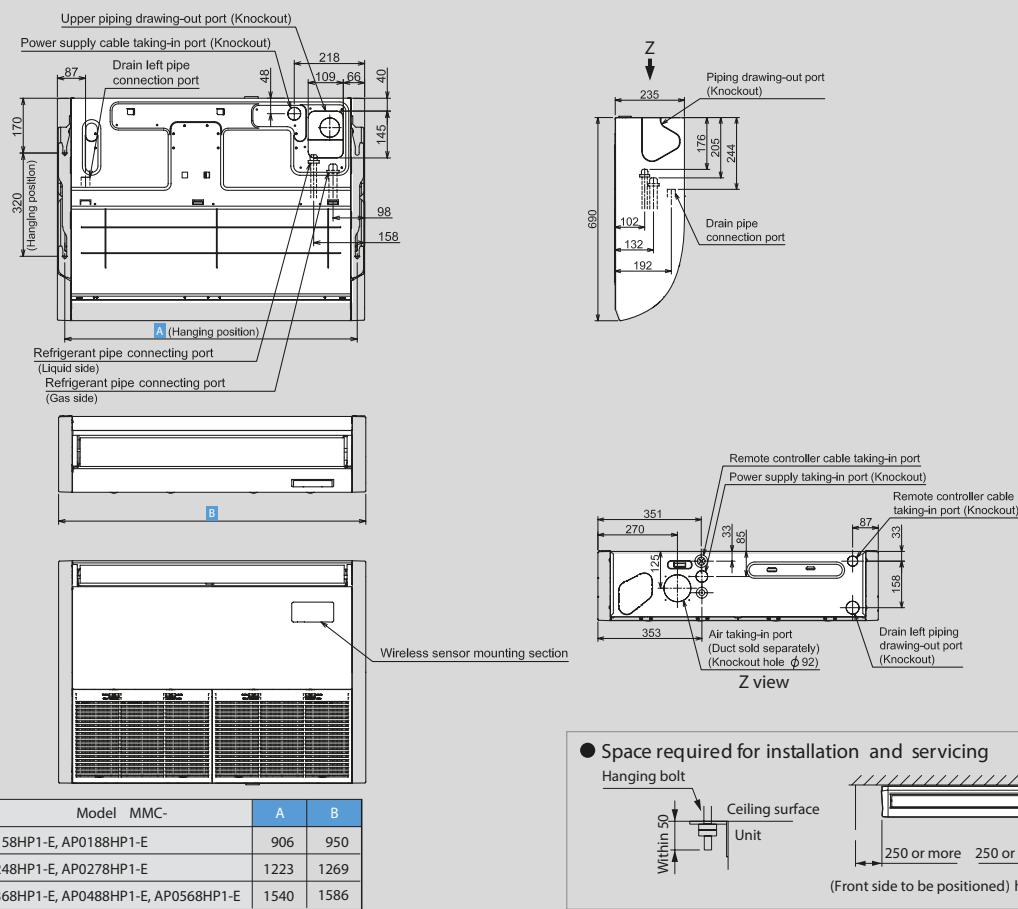
Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

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

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

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

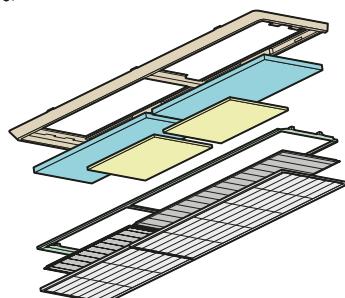
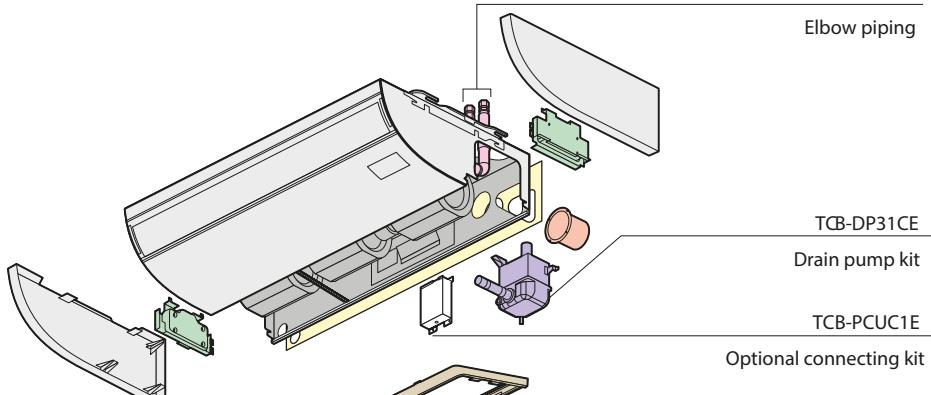
MMC-AP0158HP1-E to AP0568HP1-E



Options

TCB-KP13CE, TCB-KP23CE

Elbow piping





Greater comfort and reduced load

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

Free cooling at night

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

Flexible control

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



Remote controller
NRC-01HE

Technical specifications

Model name		MMD-	VN502HEX1E	VN802HEX1E	VN1002HEX1E
Fresh air conditioning load	Cooling (*1)	(kW)	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)
	Heating (*1)	(kW)	5.53 (2.33)	8.61 (3.61)	10.92(4.32)
Power supply		1-phase 50Hz 230V (220–240V) (Separate power supply for indoor units required.)			
Temperature exchange efficiency 50Hz / 60Hz	High	(%)	70.5/70.5	70.0/70.0	65.5
	Mid	(%)	70.5/70.5	70.0/70.0	65.5
	Low	(%)	71.5/72.0	72.5/73.0	67.5
Enthalpy exchange efficiency 50Hz / 60Hz	Cooling	High	(%)	56.5/56.5	56.0/56.0
		Mid	(%)	56.5/56.5	56.0/56.0
		Low	(%)	57.5/58.0	59.0/59.5
	Heating	High	(%)	68.5/68.5	70.0/70.0
		Mid	(%)	68.5/68.5	70.0/70.0
		Low	(%)	69.0/69.0	73.0/73.5
Fan unit 50Hz / 60Hz	Standard air flow	High	(m³/h)	500/500	800/800
		Mid	(m³/h)	500/500	800/800
		Low	(m³/h)	440/410	640/600
	External static pressure	High	(Pa)	120/200	120/190
		Mid	(Pa)	105/170	100/155
		Low	(Pa)	115/150	105/130
Sound pressure 50Hz / 60Hz	High	(dB)	37.5/40.0	41.0/43.0	43.0
	Mid	(dB)	36.5/38.0	40.0/42.0	42.0
	Low	(dB)	34.5/36.5	38.0/37.0	40.0
External Dimensions	Height	(mm)		430	
	Width	(mm)	1140		1189
	Depth	(mm)	1690		1739
Total weight		(kg)	84	100	101
Connecting piping	Gas side	(mm)	ø9.5		ø12.7
	Liquid side	(mm)		ø6.4	
Drain port		(Nominal dia .mm)		25(Polyvinyl chloride tube)	

(*1) Cooling and heating capacities are based on the following conditions:

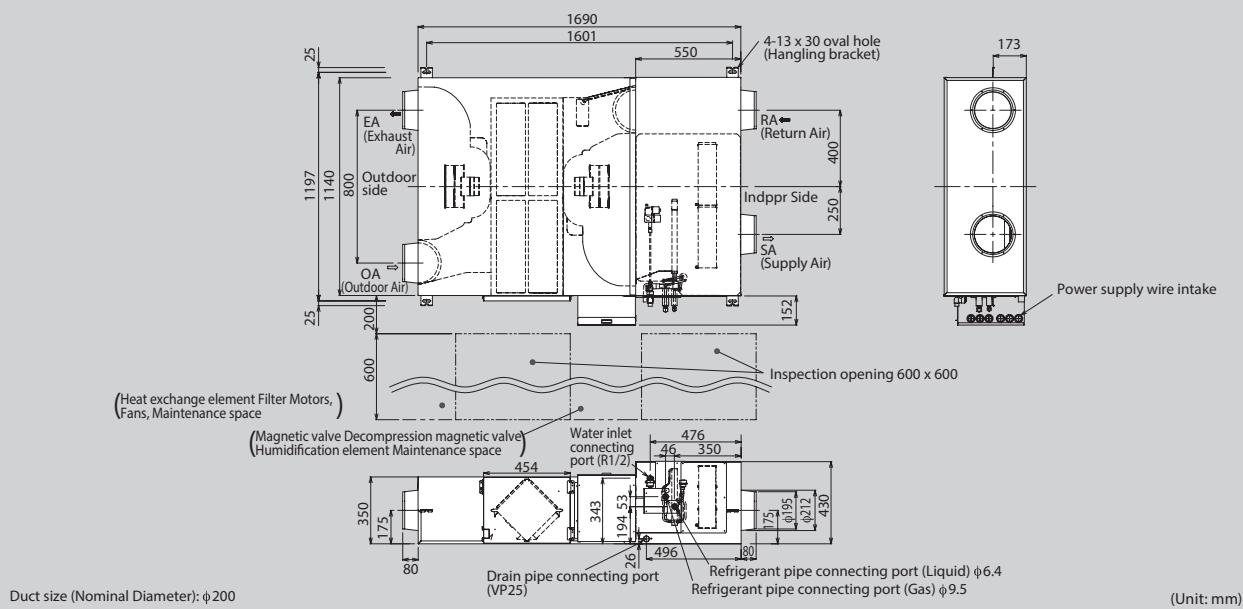
Cooling capacities are based on : indoor temperature :27 °CDB/19°CWB, Outdoor temperature :35°CDB

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

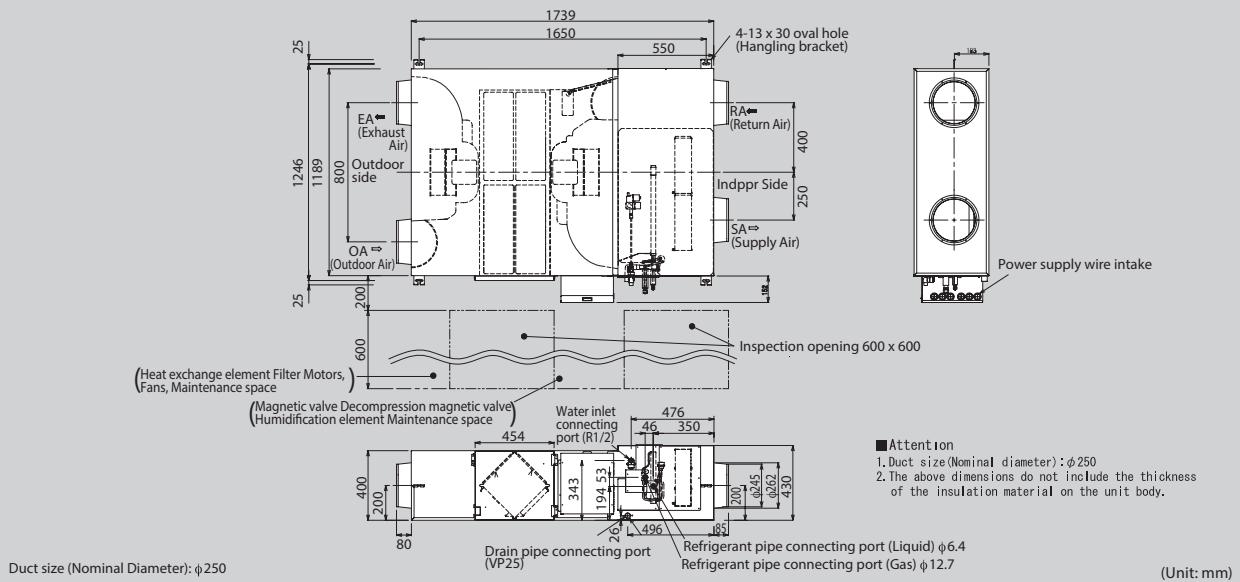
Fan is based on High and Middle

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

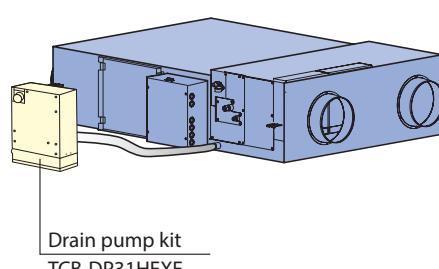
MMD-VN502HEX1E



MMD-VN802HEX1E to VN1002HEX1E



Options





Technical specifications

Model name		MMD-	VNK502HEX1E	VNK802HEX1E	VNK1002HEX1E	
Fresh air conditioning load		Cooling (*1) (kW)	4.10 (1.30)	6.56 (2.06)	8.25 (2.32)	
		Heating (*1) (kW)	5.53 (2.33)	8.61 (3.61)	10.92 (4.32)	
Power supply						
Temperature exchange efficiency	High (%)		70.5	70.0	65.5	
	Mid (%)		70.5	70.0	65.5	
	Low (%)		71.5	72.5	67.5	
Enthalpy exchange efficiency	Cooling	High (%)	56.5	56.0	52.0	
		Mid (%)	56.5	56.0	52.0	
		Low (%)	57.5	59.0	54.5	
	Heating	High (%)	68.5	70.0	66.0	
		Mid (%)	68.5	70.0	66.0	
		Low (%)	69.0	73.0	68.5	
Power input (Heat exchange mode)		High kW	0.305	0.530	0.575	
		Mid kW	0.285	0.485	0.565	
		Low kW	0.240	0.350	0.520	
Running current		High A	1.33	2.37	2.56	
		Mid A	1.24	2.14	2.51	
		Low A	1.03	1.54	2.31	
Fan unit	Standard air flow	High (m³/h)	500	800	950	
		Mid (m³/h)	500	800	950	
		Low (m³/h)	440	640	820	
	External static pressure	High (Pa)	95	105	110	
		Mid (Pa)	85	85	90	
		Low (Pa)	95	90	115	
Humidifier (*2)	System		Permeable film humidifier			
	Amount kg/h		3.0	5.0	6.0	
	Feed water pressure MPa		0.02~0.49			
Sound pressure	High (dB)		36.5	40.0	42.0	
	Mid (dB)		35.5	39.0	41.0	
	Low (dB)		33.5	38.0	39.0	
External Dimensions	Height (mm)		430	430	430	
	Width (mm)		1140	1189	1189	
	Depth (mm)		1690	1739	1739	
Total weight (kg)			91	111	112	
Connecting piping	Gas side (mm)		Ø9.5	Ø12.7	Ø12.7	
	Liquid side (mm)		Ø6.4	Ø6.4	Ø6.4	
Drain port (Nominal dia. mm)		25 (Polyvinyl chloride tube)				

(*1) Cooling and heating capacities are based on the following conditions:

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

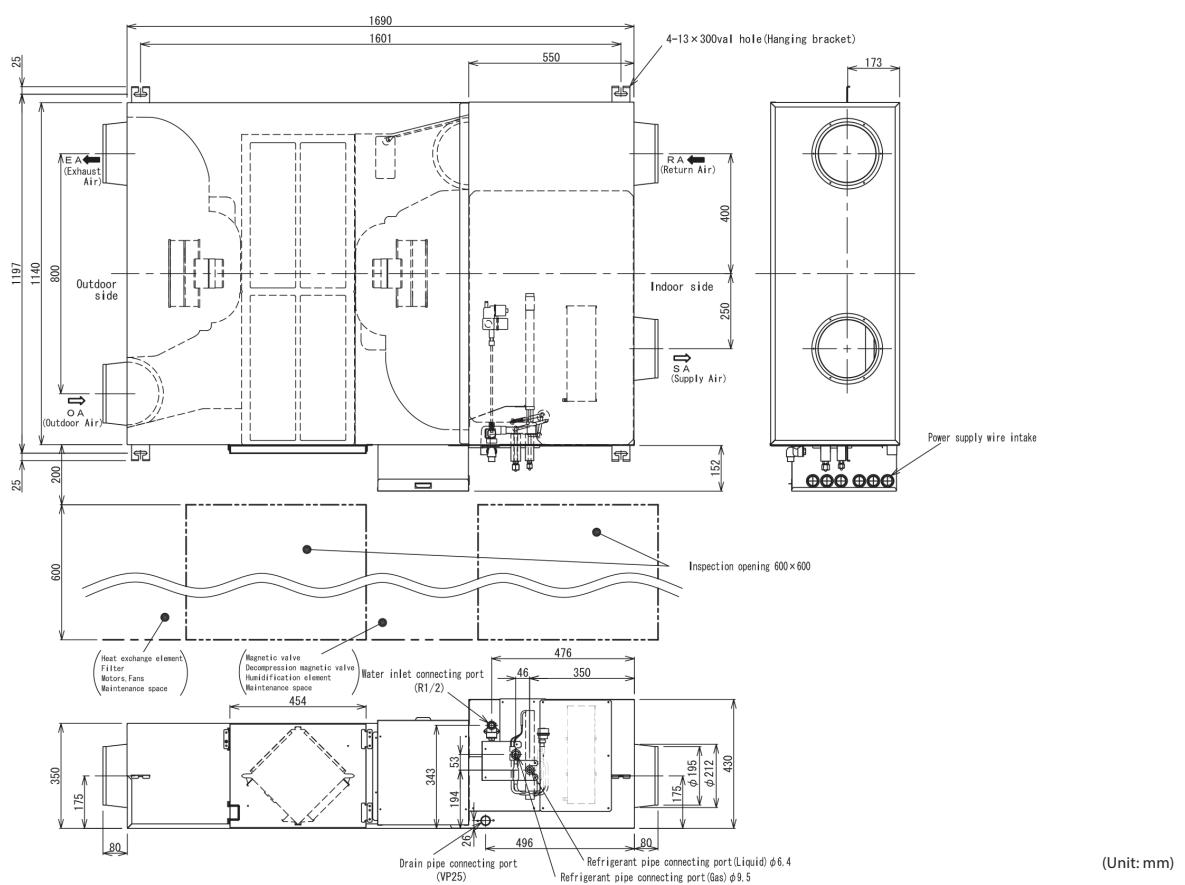
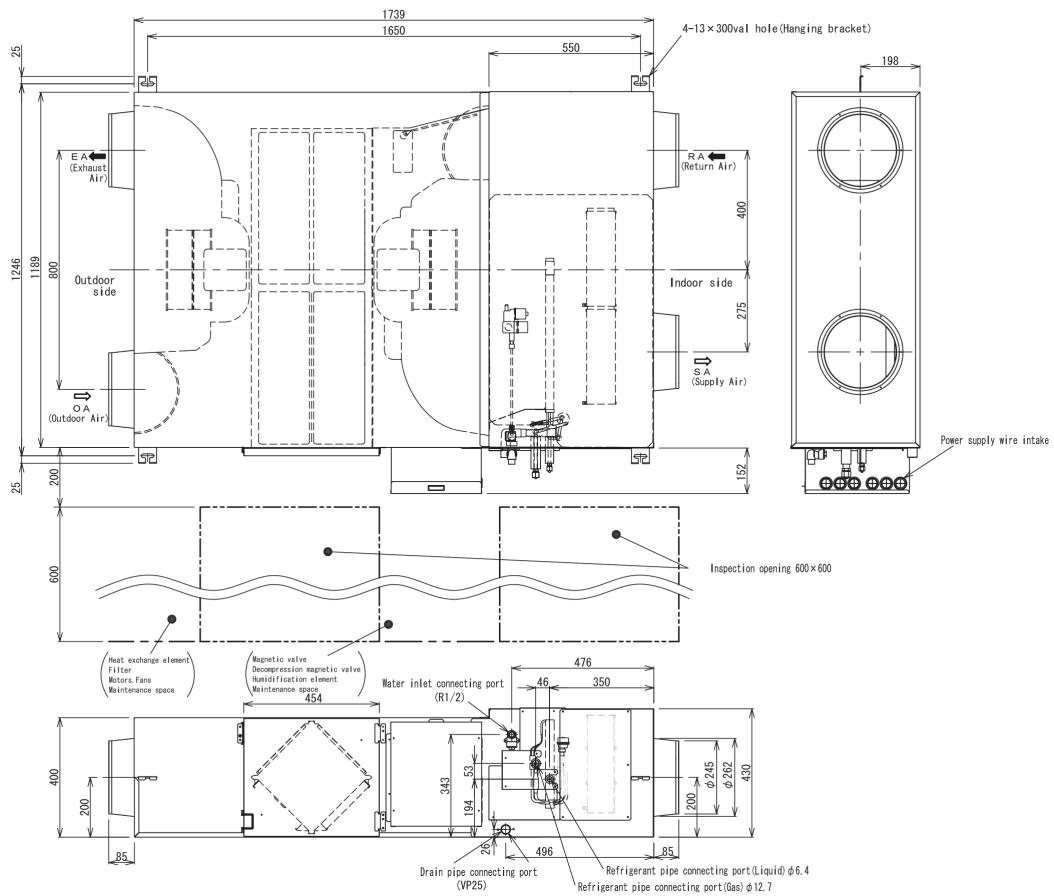
Heating capacities are based on : indoor temperature :20 °CDB, Outdoor temperature : 7 °CDB/6°CWB

Fan is based on High and Middle

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

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

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

MMD-VNK502HEX1E**MMD-VNK802HEX1E to VNK1002HEX1E**



Greater comfort and reduced load

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

Flexible control

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

Free cooling at night

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

Easy maintenance

The heat exchange element can be washed in water.



Remote controller
NRC-01HE

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

Model name	VN-	M150HE	M250HE	M350HE	M500HE	M650HE	M800HE	M1000HE	M1500HE	M2000HE												
Power supply (V)	Fan speed	1-phase 50Hz 230V (220–240V) / 1-phase 60Hz 220V (Separate power supply for indoor units required.)																				
Power consumption 50Hz/60Hz (W)	(Extra high)	68-78/76	123-138/131	165-182/209	214-238/260	262-290/307	360-383/446	532-569/622	751-786/928	1084-1154/1294												
	High	59-67/65	99-111/105	135-145/162	176-192/206	240-258/283	339-353/408	494-538/589	708-784/830	1032-1080/1220												
	Low	42-47/45	52-59/54	82-88/94	128-142/144	178-191/206	286-300/333	353-370/411	570-607/660	702-742/818												
Air volume (m ³ /h)	(Extra high)	150/150	250/250	350/350	500/500	650/650	800/800	1000/1000	1500/1500	2000/2000												
	High	150/150	250/250	350/350	500/500	650/650	800/800	1000/1000	1500/1500	2000/2000												
	Low	110/110	155/155	210/210	390/390	520/520	700/700	755/755	1200/1200	1400/1400												
External static pressure (Pa)	(Extra high)	82-102/99	80-98/97	114-125/167	134-150/181	91-107/134	142-158/171	130-150/185	135-156/165	124-143/165												
	High	52-78/59	34-65/38	56-83/33	69-99/63	58-82/68	102-132/102	97-122/120	103-129/108	92-116/102												
	Low	47-64/46	28-40/22	65-94/39	62-92/44	61-96/52	76-112/58	84-127/55	112-142/109	110-143/87												
Sound pressure level (dB(A))	(Extra high)	26-28/27.5	29.5-30/31.5	34-35/35.5	32.5-34/33.5	34-36/35.5	37-38.5/38	39.5-40.5/41.5	38-39/39.5	41-42.5/42.5												
	High	24-25.5/24.5	25-27/25	30-32/29.5	29.5-31/29	33-34/34	35.5-37/35	38.5-40/39	36.5-37.5/36.5	39.5-41/40												
	Low	20-22/20	21-22/21	27-29/23.5	26-29/24.5	31-32.5/29.5	33.5-35/32.5	34-35.5/33.5	36-37.5/35.5	37-38/36.5												
Temperature exchange efficiency (%)	(Extra high)	81.5/81.5	78/78	74.5/74.5	76.5/76.5	75/75	76.5/76.5	73.5/73.5	76.5/76.5	73.5/73.5												
	High	81.5/81.5	78/78	74.5/74.5	76.5/76.5	75/75	76.5/76.5	73.5/73.5	76.5/76.5	73.5/73.5												
	Low	83/83	81.5/81.5	79.5/79.5	78/78	76.5/76.5	77.5/77.5	77/77	79/79	77.5/77.5												
Enthalpy exchange efficiency (%)	for heating	(Extra high)	74.5/74.5	70/70	65/65	72/72	69.5/69.5	71/71	68.5/68.5	71/71	68.5/68.5											
		High	74.5/74.5	70/70	65/65	72/72	69.5/69.5	71/71	68.5/68.5	71/71	68.5/68.5											
		Low	76/76	74/74	71.5/71.5	73.5/73.5			71.5/71.5		73.5/73.5	72/72										
	for cooling	(Extra high)	69.5/69.5	65/65	60.5/60.5	64.5/64.5	61.5/61.5	64/64	60.5/60.5	64/64	60.5/60.5											
		High	69.5/69.5	65/65	60.5/60.5	64.5/64.5	61.5/61.5	64/64	60.5/60.5	64/64	60.5/60.5											
		Low	71/71	69/69	67/67	66.5/66.5	64/64	65.5/65.5	64.5/64.5	67/67	65.5/65.5											
Dimensions (Length x Width x Height) (mm)		900 x 900 x 290			1140 x 1140 x 350			1189 x 1189 x 400		1189 x 1189 x 810												
Weight (kg)		36		38		53		70		143												
Duct diameter (mm)		100	150		200		250		inside: 250, outside: 283 x 730													
Operating range	Around unit	-10°C – 40°C 80% RH or less																				
	Outdoor Air (OA)	-15°C (*1) – 43°C RH																				
	Return Air (RA)	5°C – 40°C 0% RH or less																				

* Air volume can be changed over to high (extra high) mode or low mode.

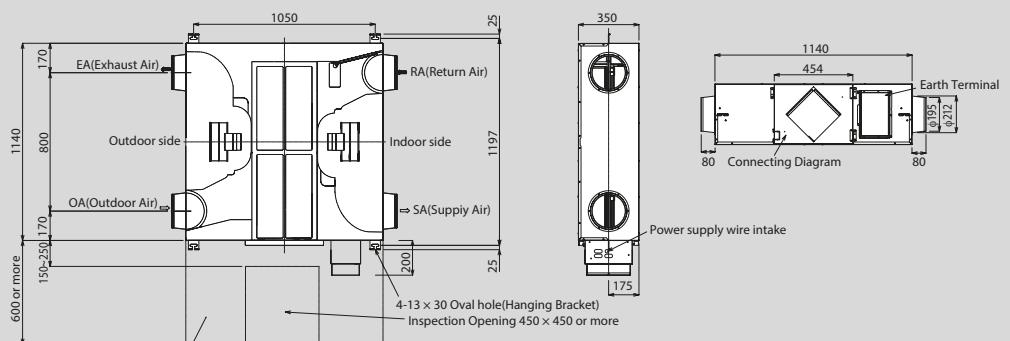
* Sound pressure level is measured 1.5m below the center of the unit.

* Sound pressure level is the value which was measured at the acoustic room.

*The actual values in an external operating environment are generally higher than the indicated values due to the contribution from ambient noise.

* Sound pressure level is less than 70 dBA

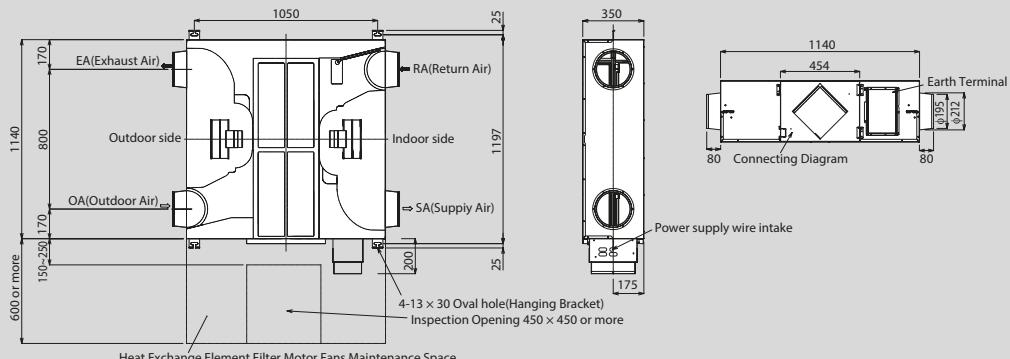
| VN-M150HE to VN-M350HE



(Unit: mm)

Duct size (Nominal Diameter): φ200

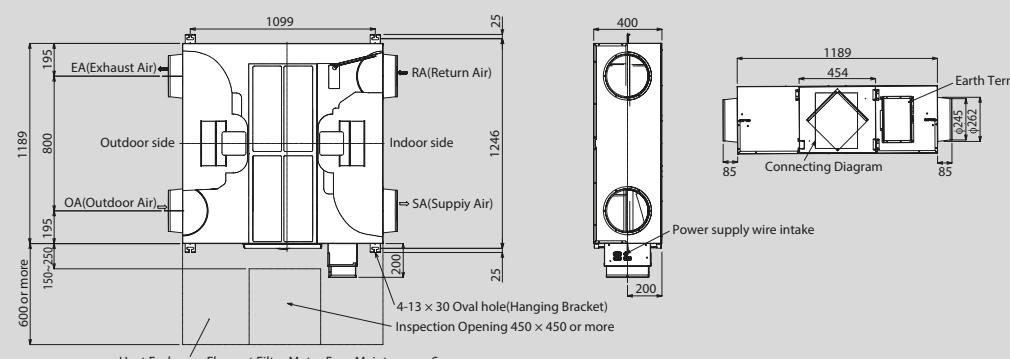
| VN-M500HE, VN-M650HE



(Unit: mm)

Duct size (Nominal Diameter): φ200

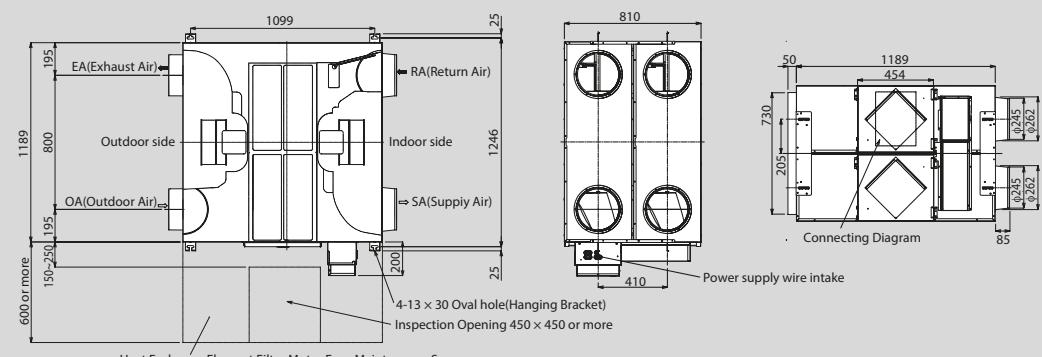
| VN-M800HE, VN-M1000HE



(Unit: mm)

Duct size (Nominal Diameter): φ250

| VN-M1500HE, VN-M2000HE



(Unit: mm)

Duct size (Nominal Diameter): φ250

Indoor unit accessories

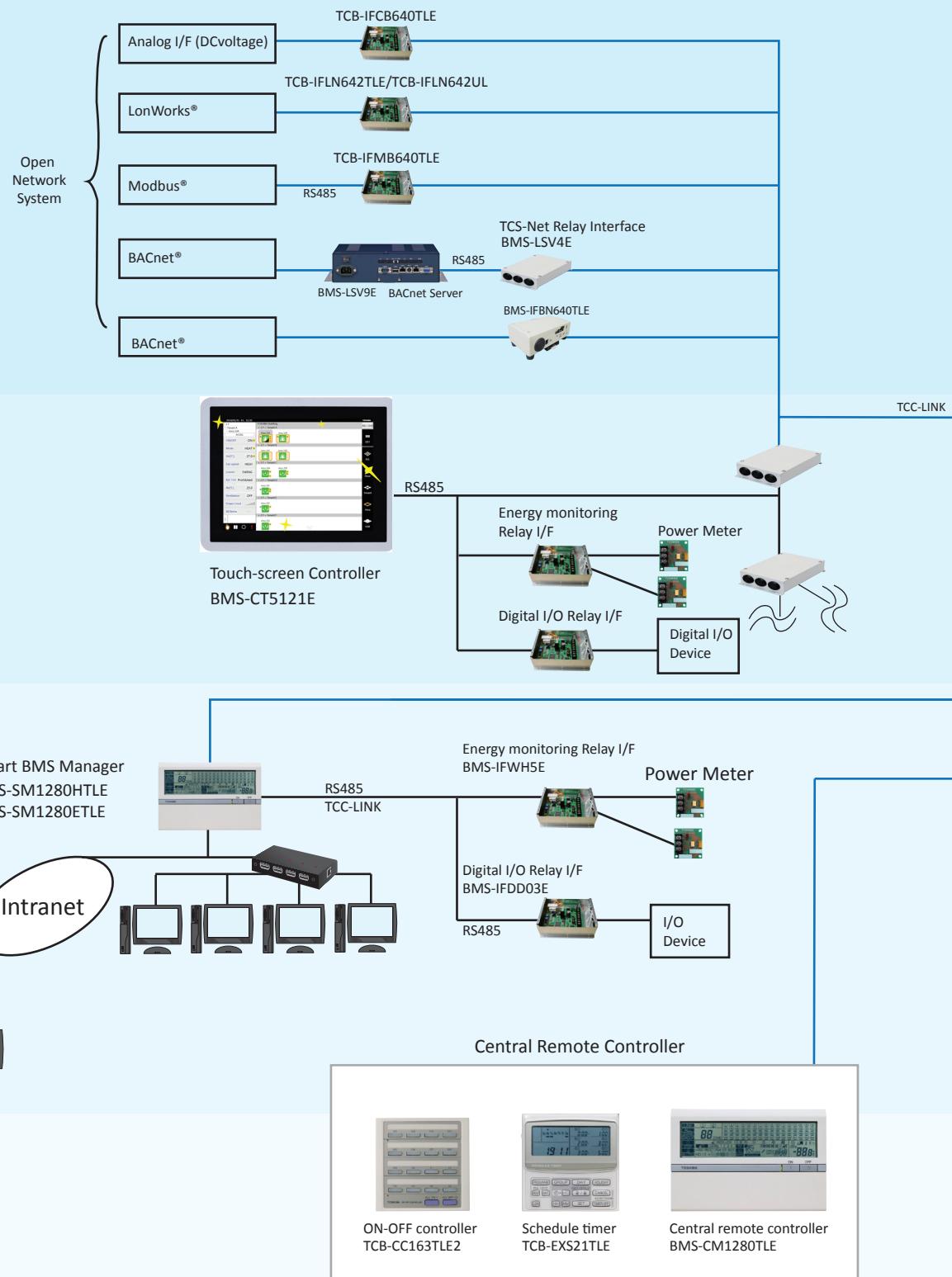
Indoor unit	Parts Name	Model Name	Applied Model	Notes	Remarks
4-way air discharge cassette type	Ceiling panel	RBC-U31PGP(W)-E	MMU-AP***4HP1-E	Required accessory	
	Fresh air inlet box	TCB-GB1602UE		For fresh air intake by using the knockout hole of fresh air filter chamber. (dia.=100 mm)	Use with TCB-GFC1602UE
	Fresh air filter chamber	TCB-GFC1602UE		For fresh air inlet box	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
	Spacer for height	TCB-SP1602UE		Height=50 mm	
	Air discharge direction kit	TCB-BC1602UE		Air direction charge by cutting off air discharge port (3 pcs.)	
Compact 4-way cassette type (600 x 600)	Ceiling panel	RBC-UM11PG(W)-E	MMU-AP***4MH1-E	Required accessory	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
2-way air discharge cassette type	Ceiling panel	RBC-UW283PG(W)-E	MMU-AP0072 to 0152WH1	Required accessory	
		RBC-UW803PG(W)-E	MMU-AP0182 to 0302WH1		
		RBC-UW1403PG(W)-E	MMU-AP0362/0482/0562WH1		
	Super long life filter	TCB-LF283UW-E	MMU-AP0072 to 0152WH1	Dust collecting effect: 50% (Weight method)	Use with TCB-FC283UW-E
		TCB-LF803UW-E	MMU-AP0182 to 0302WH1		Use with TCB-FC803UW-E
		TCB-LF1403UW-E	MMU-AP0362/0482/0562WH1		Use with TCB-FC1403UW-E
	Filter chamber	TCB-FC283UW-E	MMU-AP0072 to 0152WH1	For super long life filter	
		TCB-FC803UW-E	MMU-AP0182 to 0302WH1		
		TCB-FC1403UW-E	MMU-AP0362/0482/0562WH1		
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-UY136PG	MMU-AP***4YH1-E	Required accessory	
	Front air discharge unit	TCB-BUS21HWE	MMU-AP***4SH1-E	Required accessory	
	Auxiliary fresh air flange	TCB-FF101URE2		For easy fresh air intake by using the knockout hole of indoor unit. (dia.=100 mm)	
Slim duct type	Auxiliary fresh air flange	TCB-FF101URE2	MMD-AP***4SPH1-E	For fresh air intake by using the knockout hole of indoor unit. (dia.=100)	
Concealed duct type	Spigot shaped flange	TCB-SF56C6BPE	MMD-AP0076 to 0186BHP1-E		
		TCB-SF80C6BPE	MMD-AP0246/0276/0306BHP1-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0566BHP1-E		
Concealed duct high static pressure type	Long Life Filter Kit	TCB-LK801D-E	MMD-AP0186/0246/0276HP1-E		
		TCB-LK1401D-E	MMD-AP0366/0486/0586HP1-E		
	Spigot Shaped Flange	TCB-SF80C6BPE	MMD-AP0186/0246/0276HP1-E		
		TCB-SF160C6BPE	MMD-AP0366/0486/0586HP1-E		
	Auxiliary fresh air flange	TCB-SF160C6BPE	MMD-AP***6HP1-E		
Ceiling type	Drain pump kit	TCB-DP31CE	MMC-AP0158/0188HP1-E MMC-AP0248 to 0568HP1-E	Stand-up 600 or less (from bottom face of ceiling)	Use with TCB-KP13CE Use with TCB-KP23CE
	Elbow piping kit	TCB-KP13CE TCB-KP23CE	MMC-AP0158/0188HP1-E MMC-AP0248 to 0568HP1-E	Needed when drain pump kit is used	
Air to Air Heat Exchanger with DX-coil	Drain pump kit	TCB-DP31HEXE	MMD-VN502 to 1002HEX1E	Stand-up 330 mm or less (from bottom face of ceiling)	

Combination Pattern

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

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

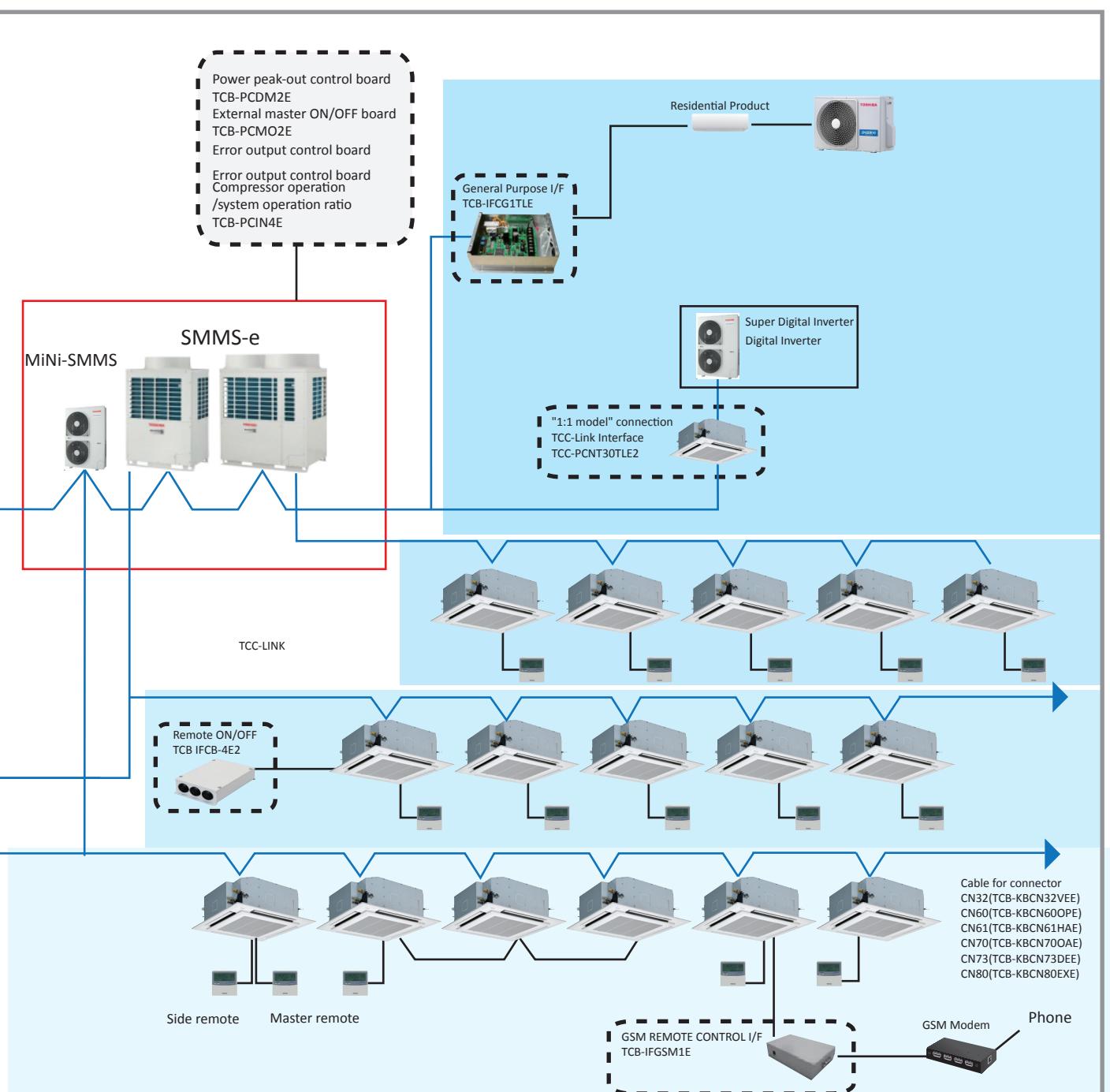
Air-conditioning Management System on site



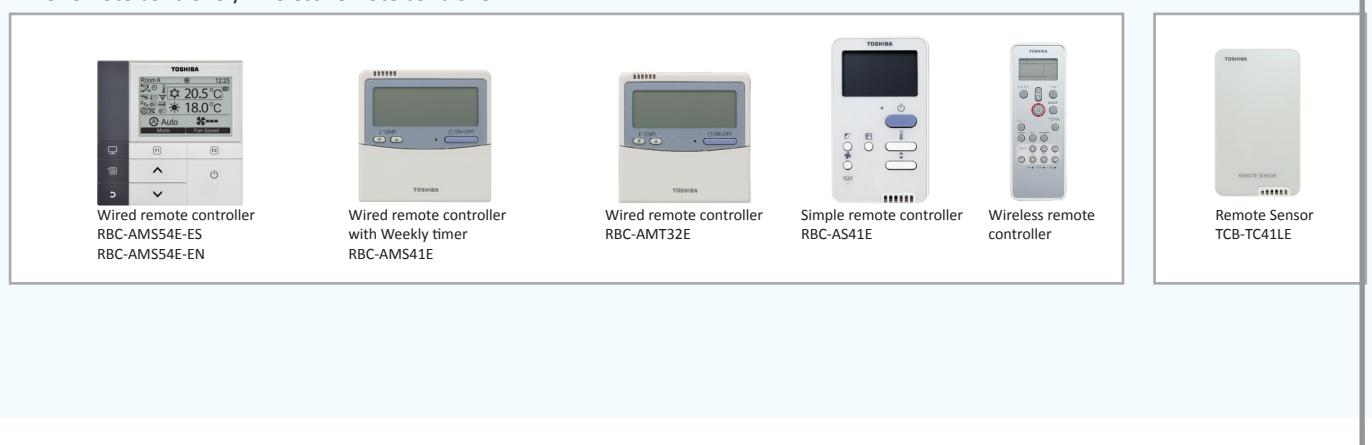
1.LonWorks® : Registered trademark by Echelon corporation.

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-AMS54E-ES
RBC-AMS54E-EN

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

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



Standard Remote controller

RBC-AMT32E

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

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



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

RBC-AMS41E

- Clock display
- Schedule timer:

Possible to program schedule timer (7-day timer) function

Possible to program 8 functions for each day of the week

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



Simple wired remote controller

RBC-AS41E

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

Wireless remote controller



Wireless remote controller kit & sensor unit (receiver unit)

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



RBC-AX33CE
Integral receiver
(For ceiling) (MMC-AP***8HP1-E)
(MMU-AP***4SH1-E)



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



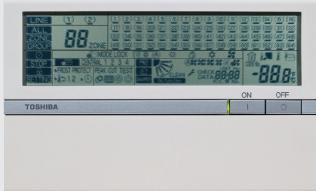
TCB-AX32E
Stand alone receiver
(For 4-way air discharge cassette,
compact 4-way cassette)

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



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

Central remote controller

**Central remote controller****BMS-CM1280TLE****• Operation**

- Individual operation of 128 indoor units available
- Return Back Operation
- Weekly Schedule Operation*
(ON/OFF)

* Schedule timer necessary

• Monitoring

- Zone setting (64 zones x 2)
- Individual unit operation mode operation restriction
- Alarm display
- Control input
- Status output

**ON-OFF controller****TCB-CC163TLE2**

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

**Schedule timer****TCB-EXS21TLE****• Schedule timer mode**

- 6 programmings per day
- Enabling 8 groups to be programmed
- A maximum of 64 indoor units can be controlled
- A maximum of 100 hours back-up power supply

• Weekly timer mode

- 7 types of weekly schedule and 3 programmings per day

Other

**Remote sensor****TCB-TC41LE**

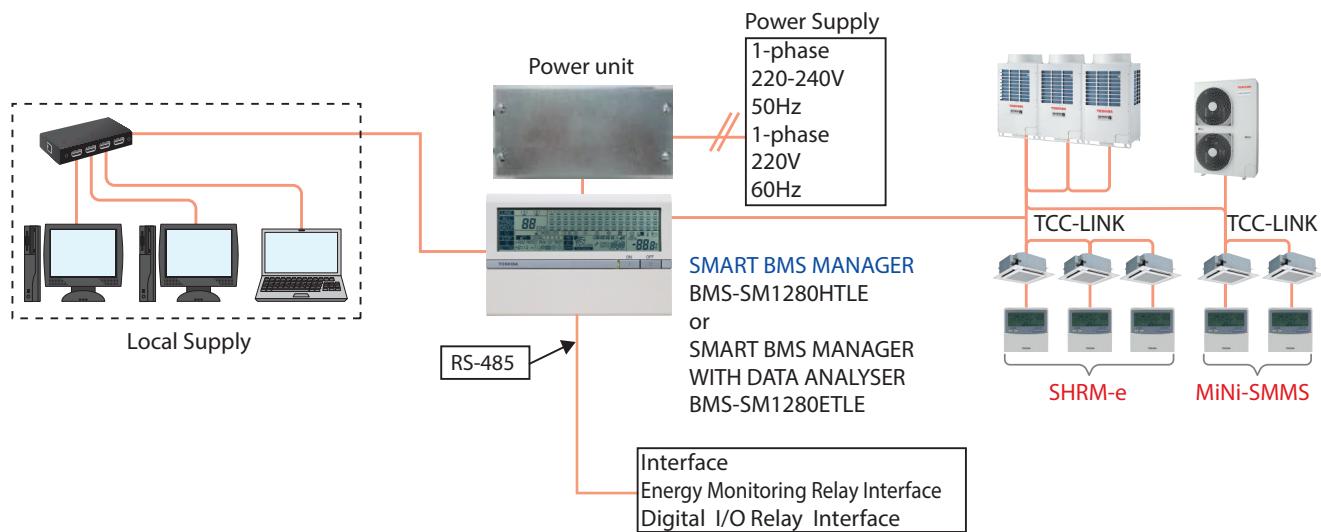
Install this sensor when outside air has been introduced or when overcooling and overheating are to be minimised.

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

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

Building management systems

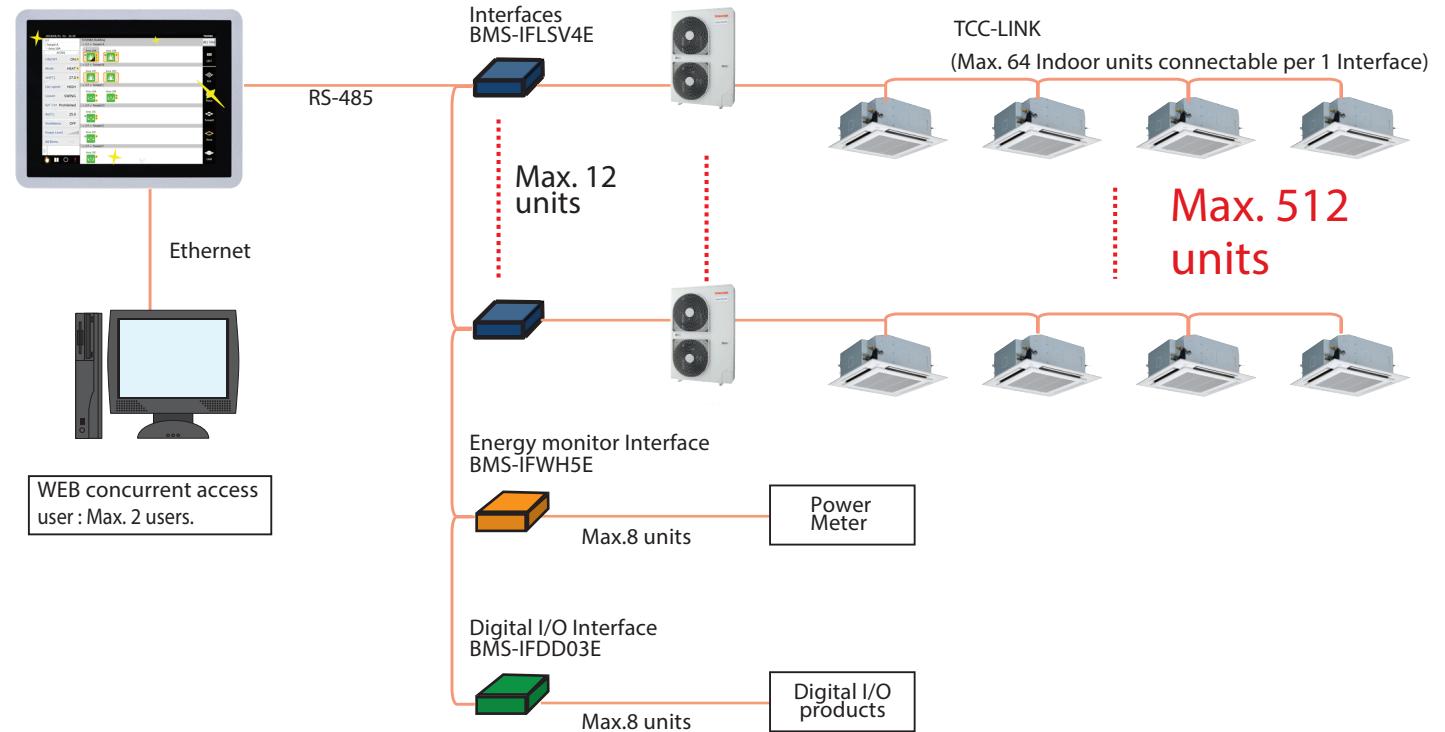
SMART MANAGER / SMART MANAGER WITH DATA ANALYSER

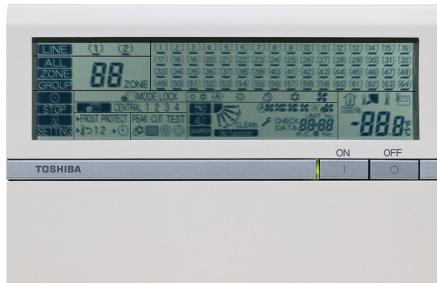


Touch screen controller

TOUCH SCREEN CONTROLLER

BMS-CT5121E





SMART BMS MANAGER
BMS-SM1280HTLE

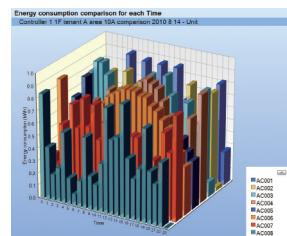
SMART MANAGER WITH DATA ANALYSER
BMS-SM1280ETLE



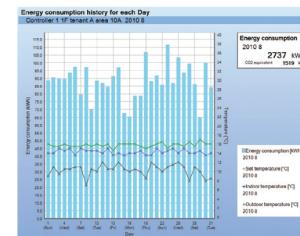
Web browser control software

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

Energy monitoring display



3D energy view



Daily energy view



TOUCH SCREEN CONTROLLER
BMS-CT5121E

• Touch screen controller

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

• Energy monitoring and billing application

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

• Power meter

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



Relay Interface BMS-IFWH5E
For Energy Monitoring



Relay Interface BMS-IFLSV4E
For TCS-NET

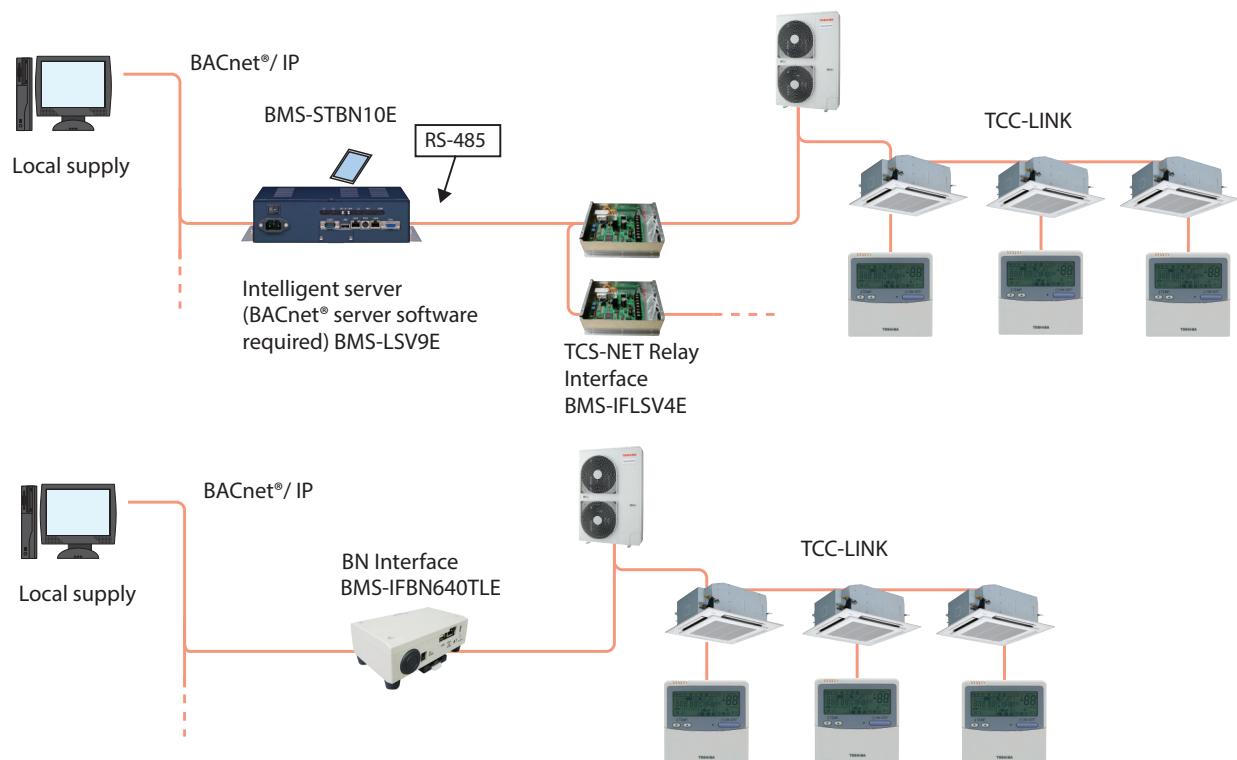
Relay Interface BMS-IFDD03E
For Digital I/O

FEATURES

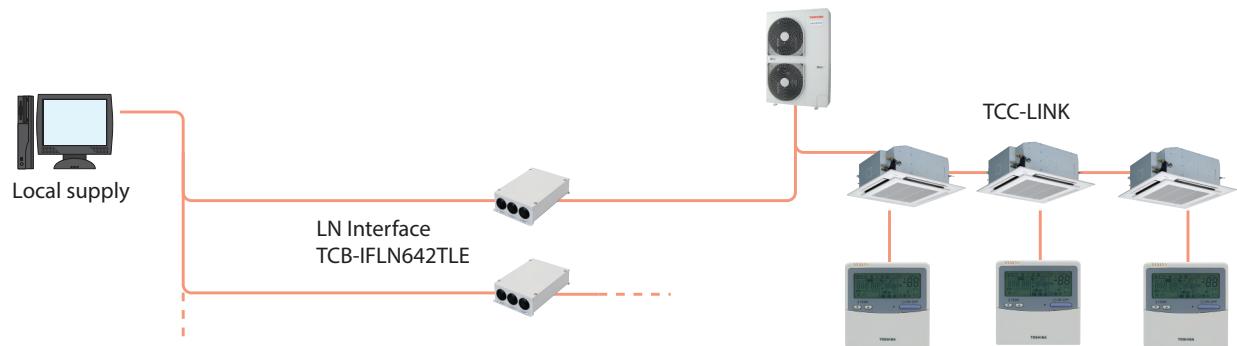
- | | |
|--|----|
| • Icon display | OK |
| • Return back function | OK |
| • Save & demand control for outdoor unit | OK |
| • Ventilation unit control & monitoring | OK |
| • Setting temp. range control | OK |
| • Setting temp. shift | OK |

Open network systems

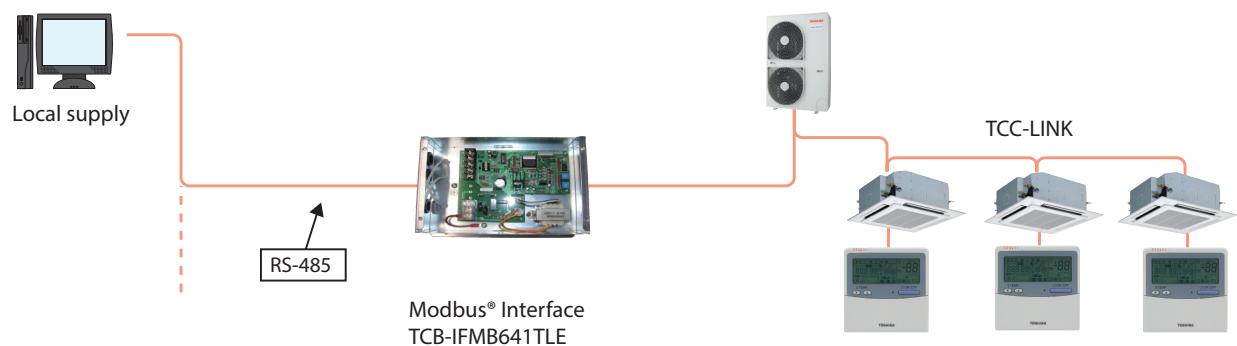
BACnet® system



LonWorks®



Modbus®





Intelligent Server
BMS-LSV9E



BACnet® Server Software
BMS-STBN10E



Relay Interface BMS-IFLSV4E
For TCS-NET

• BACnet®

The BACnet® system operates in conjunction with the BACnet®.

Signals and provides the following functions:

- **Control**

- ON/OFF
- Temperature setting
- Fan speed

- **Monitoring**

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



BN Interface
BMS-IFBN640TLE

• BACnet®

The BACnet® system operates in conjunction with the BACnet®.

Signals and provides the following functions:

- **Control**

- ON/OFF
- Temperature setting
- Fan speed

- **Monitoring**

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

- **Feature**

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



LN Interface
TCB-IFLN642TLE

• LonWorks® LN Interface

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

A maximum of 64 units / groups are controllable per interface.

- SNVT signal

Signals and provides the following functions:

- **Control**

- ON/OFF
- Temperature setting
- Fan speed

- **Monitoring**

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



Modbus® Interface
TCB-IFMB641TLE
TCB-IFMB640TLE

• Modbus®

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

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

Signals and provides the following functions:

- **Control**

- ON/OFF
- Temperature setting
- Fan speed

- **Monitoring**

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

1. LonWorks®: Registered trademark Echelon corporation.

2. BACnet®: ANSI/ASHRAE 135-2008, A data Communication Protocol for Building Automation and Control Networks.

3. Modbus® is a registered trademark of Schneider E.

TCB-PCDM4E



Size: 71 × 85 (mm)

Power peak-cut control

- Feature

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

- Function

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

TCB-PCM04E



Size: 55.5 × 60 (mm)

Snowfall fan control

- Feature

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

External master ON/OFF control

- Feature

The outdoor unit starts or stops the system.

Night operation (Sound reduction) control

- Feature

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

Operation mode selection control

- Feature

This control can restrict the selectable operation modes.

TCB-PCIN4E



Size: 73 × 79 (mm)

Error/Operation output control

• Feature

Enables external output of error and operation signals.

TCB-IFCB-4E2

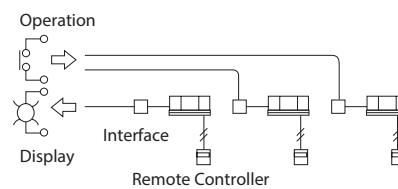


Size: 200 × 170 × 66 (mm)

Remote location ON/OFF control box

• Feature

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



Monitoring

ON/OFF status (for indoor unit)

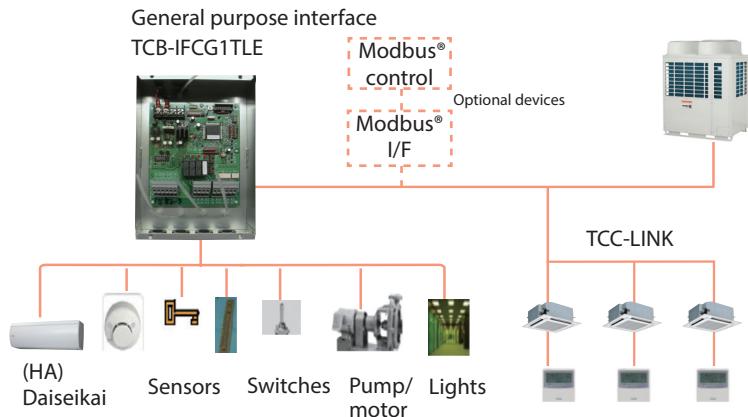
Alarm status (system & indoor unit stop)

ON/OFF command

Air conditioner can be turned ON/OFF by the external signals.

The external ON/OFF signals will initiate the signals shown below.

General Purpose Interface



Concept

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

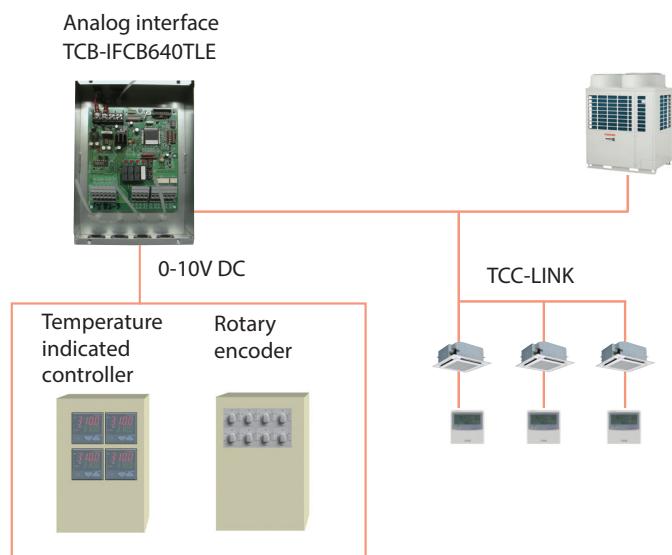
Standard function

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

Optional function

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

Analog Interface



Concept

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

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

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

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

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

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



SAFETY PRECAUTIONS

For operation:

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

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

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

Precautions for using air conditioners

Concerning the automatic defrosting unit

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

Concerning the air conditioner's operating conditions and their selection

(1) Avoid using the air conditioner in the following locations.

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

(2) Before using an air conditioner in any of the following locations, consult with your dealer or a qualified contractor.

- Locations where vapors from edible oils are given off (such as in bakeries or kitchens and restaurants that use edible oils) ...The air conditioner's operating performance may be compromised or condensation may form as a result of clogged filters, and the plastic parts may incur damage. In line with the prevailing conditions, take countermeasures such as tailoring the installation conditions in accordance with the conditions, using air conditioners designed for kitchens or oil guard filters, etc.
- Locations with disinfectant-induced chlorine atmospheres (water tanks, etc.) The metal parts in the heat exchangers, motors, etc., may become corroded.
- Locations with high salinity (coastal areas, etc.) Corrosion may occur so use outdoor units specifically designed to withstand exposure to salt.

- Locations where power is supplied from independent power generators. The power line frequency and/or voltage may fluctuate, possibly causing the air conditioner to malfunction.
- Locations where high frequencies or electrical noise is generated (from high-frequency welders used for vinyl welding and processing, high-frequency therapeutic devices used for thermotherapy, etc.) The electronic components may be adversely affected, possibly causing the air conditioner to malfunction.
- Locations where electronic equipment is installed. Electrical noise may adversely affect the operation of the electronic equipment.

(3) Concerning use in locations with high ceilings

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

(4) Concerning use in high-humidity environments

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

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

TOSHIBA

Leading Innovation >>>



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.