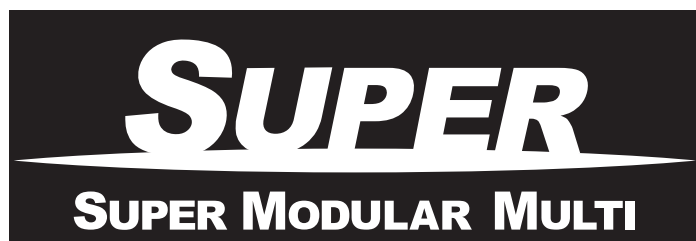


DESIGN MANUAL



Indoor Unit

<4-way Air Discharge Cassette Type>

**MMU-AP0091H, AP0121H, AP0151H,
MMU-AP0181H, AP0241H, AP0271H,
MMU-AP0301H, AP0361H, AP0481H
MMU-AP0561H**

<2-way Air Discharge Cassette Type>

**MMU-AP0071WH, AP0091WH, AP0121WH,
MMU-AP0151WH, AP0181WH, AP0241WH,
MMU-AP0271WH, AP0301WH
MMU-AP0481WH** (CHINA market only)

<1-way Air Discharge Cassette Type>

**MMU-AP0071YH, AP0091YH, AP0121YH,
MMU-AP0151SH, AP0181SH, AP0241SH**

<Concealed Duct Standard Type>

**MMD-AP0071BH, AP0091BH, AP0121BH,
MMD-AP0151BH, AP0181BH, AP0241BH,
MMD-AP0271BH, AP0301BH, AP0361BH,
MMD-AP0481BH, AP0561BH**

<Concealed Duct High Static Pressure Type>

**MMD-AP0181H, AP0241H, AP0271H,
MMD-AP0361H, AP0481H, AP0721H,
MMD-AP0961H**

<Under Ceiling Type>

**MMC-AP0151H, AP0181H, AP0241H,
MMC-AP0271H, AP0361H, AP0481H**

<High Wall Type>

**MMK-AP0071H, AP0091H, AP0121H,
MMK-AP0151H, AP0181H, AP0241H**

<Floor Standing Cabinet Type>

**MML-AP0071H, AP0091H, AP0121H,
MML-AP0151H, AP0181H, AP0241H**

<Floor Standing Concealed Type>

**MML-AP0071BH, AP0091BH, AP0121BH,
MML-AP0151BH, AP0181BH, AP0241BH**

<Floor Standing Type>

**MMF-AP0151H, AP0181H, AP0241H
MMF-AP0271H, AP0361H, AP0481H
MMF-AP0561H**

Outdoor Unit

Cooling Only Model

<Inverter Unit>

**MMY-MAP0501T8, MAP0601T8
MMY-MAP0801T8, MAP1001T8
MMY-MAP1201T8**

Heat Pump Model

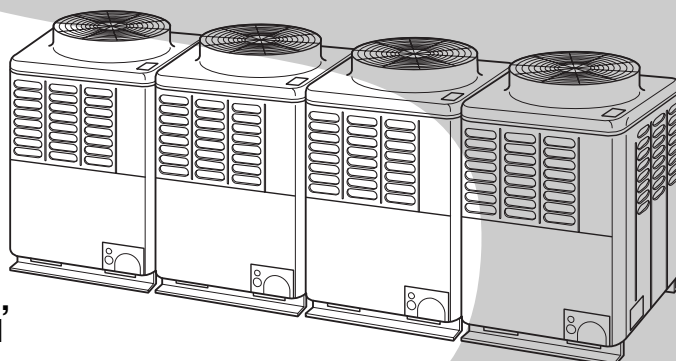
<Inverter Unit>

**MMY-MAP0501HT8, MAP0601HT8
MMY-MAP0801HT8, MAP1001HT8
MMY-MAP1201HT8**

Heat Pump Model

<Inverter Unit>

**MMY-MAP0501HT7, MAP0601HT7
MMY-MAP0801HT7, MAP1001HT7
MMY-MAP1201HT7**



This Manual is used for both models, Cooling Only model and Heat Pump model.

Positions shaded with screens  in the description and tables are applied to the Heat Pump model only.

Parts marked with **XXX** indicate the 60Hz, 380V model only.

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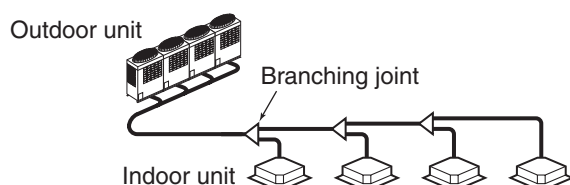
DESIGN MANUAL

1. OUTLINE OF TOSHIBA SUPER MMS (Super Modular Multi System)

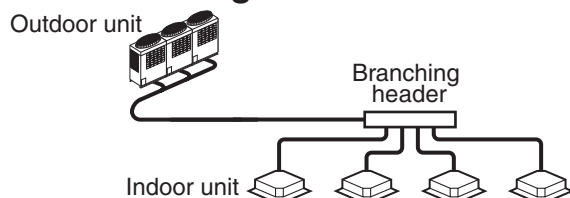
◆ Shortest route design by free branching

Combination of line and header branching is highly flexible. This follows for the shortest design route possible, thereby saving on installation time and cost. Line/header branching after header branching is only available with TOSHIBA Super MMS.

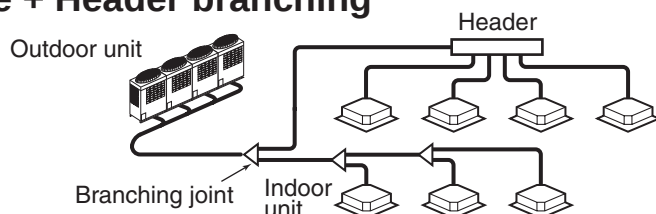
Line branching



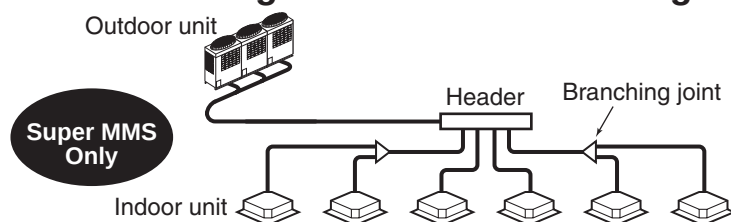
Header branching



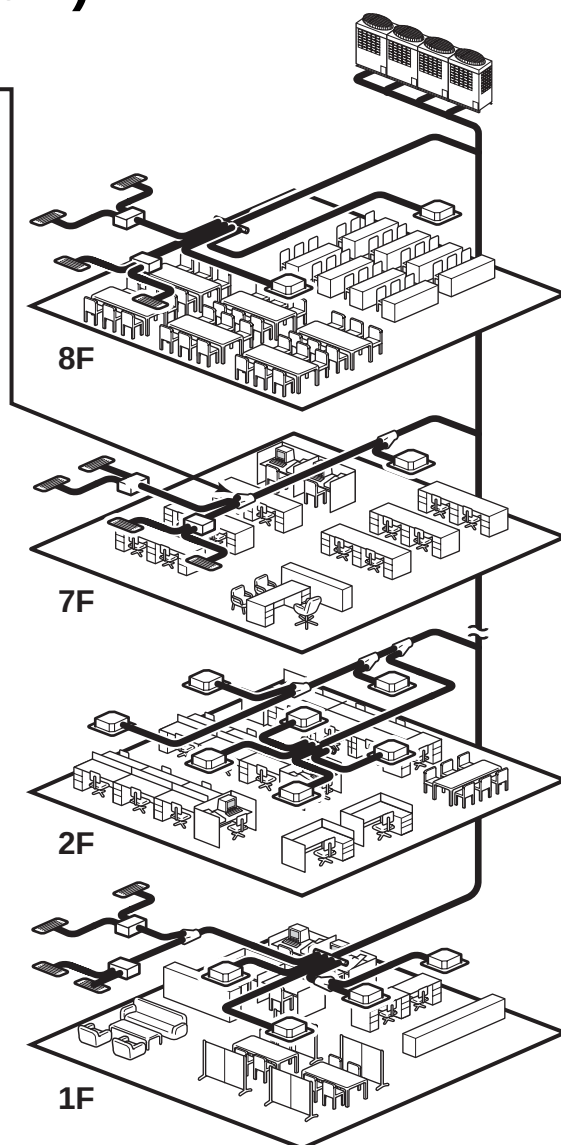
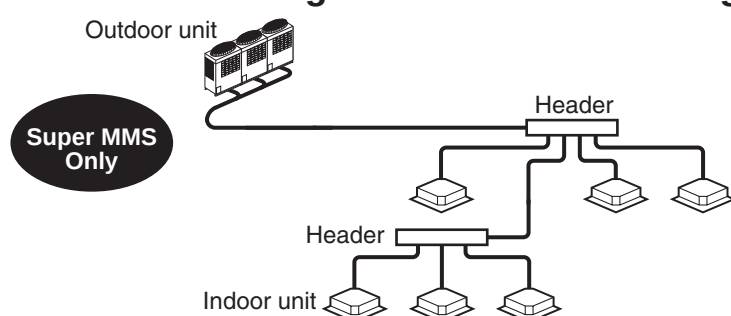
Line + Header branching

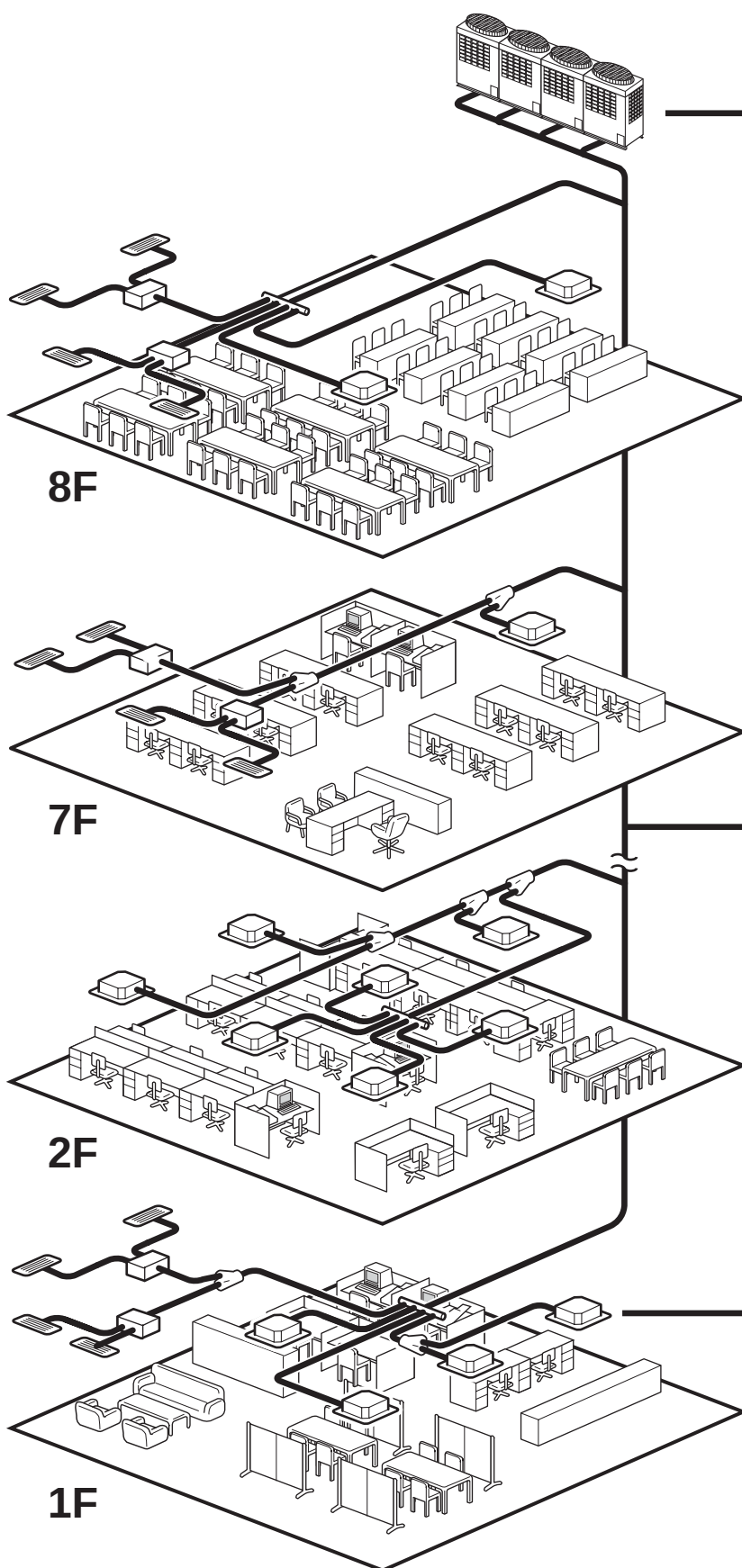


Line branching after header branching

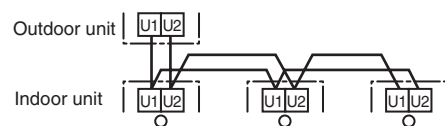


Header branching after header branching





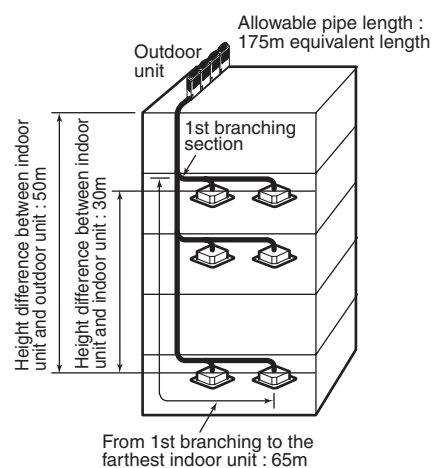
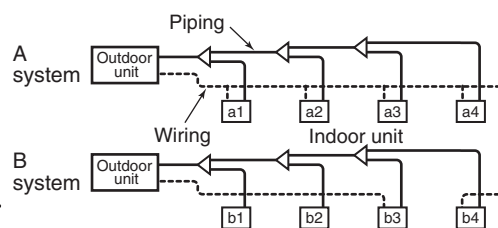
- Non-polarized control wiring between outdoor and indoor units



- Wiring diagnosis system

Use the switches on the micro processor P.C. board of the outdoor unit.

- Detects wiring to the indoor unit a4 which should not be in system A.
- b4 is missing in system B.



◆ **Compact design**

The design of the modular TOSHIBA Super MMS outdoor unit allows for easy unit maneuvering into any standard lift.
Its compactness also allows it to be easily installed in limited spaces.

◆ **Largest system capacity**

TOSHIBA Super MMS can be combined up to 48 HP (135kW) as one refrigerant system.

◆ **Energy saving**

No. 1 COP in VRF industry. Compared with the conventional chiller fan coil system, a large energy saving can be realized.

◆ **Advanced bus communication system**

Wiring between indoor and outdoor unit is a simple 2 wire system.
Communication address is also automatically configured.
A default test mode operation is available.

◆ **Self diagnostics system**

Comprehensive troubleshooting code allows for timely identification of problems arising.

◆ **High lift design**

Equivalent pipe length of 175m and vertical lift of 50m is made possible with TOSHIBA Super MMS.
Vertical lift between indoor units of 30m is the highest in the industry.
This allows for greater flexibility in the location of the system.

◆ **Multiplied indoor units**

Indoor units with different capacities and configurations can be combined up to 135% of the outdoor unit capacity.
A maximum of 48 indoor units can be combined with the 30 – 48 HP outdoor units.

◆ **Intelligent control**

TOSHIBA Super MMS intelligent controls and modulating valves deliver the required capacity, according to the load variation from 50% to 100%.
The intelligent controls and modulating valves limit or increase the cooling capacity dynamically so humidity and temperature are kept in the comfort zone.

◆ **Conforms to building control law**

IAQ (Indoor Air Quality) is also achieved by combining various accessories required by the Building Control Law.

◆ **Wide control applications**

Artificial Intelligence Network system

- Central control and monitoring system available
- Weekly schedule operation through weekly timer

Integration with Building Management System (BMS) is available.

2. SUMMARY OF SYSTEM EQUIPMENTS

Equipments

1. Outdoor units

Corresponding HP		Inverter unit					Appearance
		5 HP	6 HP	8 HP	10 HP	12 HP	
Model name	Heat pump	MMY- MAP0501HT8	MAP0601HT8	MAP0801HT8	MAP1001HT8	MAP1201HT8	
	Heat pump	MMY- MAP0501HT7	MAP0601HT7	MAP0801HT7	MAP1001HT7	MAP1201HT7	
	Cooling only	MMY- MAP0501T8	MAP0601T8	MAP0801T8	MAP1001T8	MAP1201T8	
Cooling capacity (kW)		14.0	16.0	22.4	28.0	33.5	
Heating capacity (kW)		16.0	18.0	25.0	31.5	37.5	

2. Outdoor units (Combination of outdoor units)

Corresponding HP	5 HP	6 HP	8 HP	10 HP	12 HP	14 HP	16 HP	18 HP	20 HP	22 HP
Combined Model	MMY- MAP0501HT8	MAP0601HT8	MAP0801HT8	MAP1001HT8	MAP1201HT8	AP1401HT8	AP1601HT8	AP1801HT8	AP2001HT8	AP2201HT8
	MMY- MAP0501HT7	MAP0601HT7	MAP0801HT7	MAP1001HT7	MAP1201HT7	AP1401HT7	AP1601HT7	AP1801HT7	AP2001HT7	AP2201HT7
	MMY- MAP0501T8	MAP0601T8	MAP0801T8	MAP1001T8	MAP1201T8	AP1401T8	AP1601T8	AP1801T8	AP2001T8	AP2201T8
Cooling capacity (kW)	14.0	16.0	22.4	28.0	33.5	38.4	45.0	50.4	56.0	61.5
Heating capacity (kW)	16.0	18.0	25.0	31.5	37.5	43.0	50.0	56.5	63.0	69.0
Combined outdoor units	5 HP	6 HP	8 HP	10 HP	12 HP	8 HP	8 HP	10 HP	10 HP	8 HP
	—	—	—	—	—	6 HP	8 HP	8 HP	10 HP	8 HP
	—	—	—	—	—	—	—	—	—	6 HP
No. of connectable indoor units	8	10	13	16	20	23	27	30	33	37

Corresponding HP	22 HP	24 HP	24 HP	26 HP	28 HP	30 HP	32 HP	32 HP	34 HP	34 HP
Combined Model	MMY- AP2211HT8	AP2401HT8	AP2411HT8	AP2601HT8	AP2801HT8	AP3001HT8	AP3201HT8	AP3211HT8	AP3401HT8	AP3411HT8
	MMY- AP2211HT7	AP2401HT7	AP2411HT7	AP2601HT7	AP2801HT7	AP3001HT7	AP3201HT7	AP3211HT7	AP3401HT7	AP3411HT7
	MMY- AP2211T8	AP2401T8	AP2411T8	AP2601T8	AP2801T8	AP3001T8	AP3201T8	AP3211T8	AP3401T8	AP3411T8
Cooling capacity (kW)	61.5	68.0	68.0	73.0	78.5	84.0	90.0	90.0	96.0	96.0
Heating capacity (kW)	69.0	76.5	76.5	81.5	88.0	95.0	100.0	100.0	108.0	108.0
Combined outdoor units	12 HP	8 HP	12 HP	10 HP	10 HP	10 HP	8 HP	12 HP	10 HP	12 HP
	10 HP	8 HP	12 HP	8 HP	10 HP	10 HP	8 HP	10 HP	8 HP	12 HP
	—	8 HP	—	8 HP	8 HP	10 HP	8 HP	10 HP	8 HP	10 HP
No. of connectable indoor units	37	40	40	43	47	48	48	48	48	48

Corresponding HP	36 HP	36 HP	38 HP	40 HP	42 HP	44 HP	46 HP	48 HP
Combined Model	MMY- AP3601HT8	AP3611HT8	AP3801HT8	AP4001HT8	AP4201HT8	AP4401HT8	AP4601HT8	AP4801HT8
	MMY- AP3601HT7	AP3611HT7	AP3801HT7	AP4001HT7	AP4201HT7	AP4401HT7	AP4601HT7	AP4801HT7
	MMY- AP3601T8	AP3611T8	AP3801T8	AP4001T8	AP4201T8	AP4401T8	AP4601T8	AP4801T8
Cooling capacity (kW)	101.0	101.0	106.5	112.0	118.0	123.5	130.0	135.0
Heating capacity (kW)	113.0	113.0	119.5	126.5	132.0	138.0	145.0	150.0
Combined outdoor units	10 HP	12 HP	10 HP	10 HP	12 HP	12 HP	12 HP	12 HP
	10 HP	12 HP	10 HP	10 HP	10 HP	12 HP	12 HP	12 HP
	8 HP	12 HP	10 HP	10 HP	10 HP	10 HP	12 HP	12 HP
No. of connectable indoor units	48	48	48	48	48	48	48	48

3. Branching joints and headers

	Model name	Usage	Appearance
Y-shape branching joint (*3)	RBM-BY53E	Indoor unit capacity code (*1) : Total below 6.4	
	RBM-BY103E	Indoor unit capacity code (*1) : Total 6.4 or more and below 14.2 (*2)	
	RBM-BY203E	Indoor unit capacity code (*1) : Total 14.2 or more and below 25.2 (*2)	
	RBM-BY303E	Indoor unit capacity code (*1) : Total 25.2 or more (*2)	
4-branching header (*4)	RBM-HY1043E	Indoor unit capacity code (*1) : Total below 14.2	
	RBM-HY2043E	Indoor unit capacity code (*1) : Total 14.2 or more and below 25.2	
	RBM-HY1083E	Indoor unit capacity code (*1) : Total below 14.2	
8-branching header (*4) (*5)	RBM-HY2083E	Indoor unit capacity code (*1) : Total 14.2 or more and below 25.2	Max.8 branches
T-shape branching joint (For connection of outdoor units)	RBM-BT13E	1 set of 3 types of T-shape joint pipes as described below: The required quantity is arranged and they are combined at the site.	
		Connection piping	Corresponded dia. (mm)
		Balance pipe	Ø9.5
		Piping at liquid side	Ø9.5 to Ø22.2
		Piping at gas side	Ø15.9 to Ø41.3

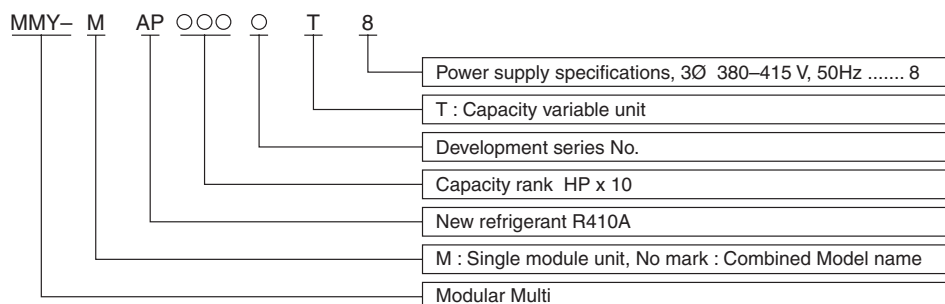
- *1 "Capacity code" can be obtained from page 10. (Capacity code is not actual capacity)
 *2 If total capacity code value of indoor unit exceeds that of outdoor unit, apply capacity code of outdoor unit.
 *3 When using Y-shape branching joint for 1st branching, select according to capacity code of outdoor unit.
 *4 Max. 6.0 capacity code in total can be connected.
 *5 If capacity code of outdoor unit is 26 and more, it is not used for 1st branching.
 *6 Model names for outdoor and indoor units described in this guide are shortened because of the space constraint.

Super Modular Multi System Outdoor Unit :

List of Product and Combined Model Name

HP (Capacity code)	Model name MMY-	No. of combined units	Inverter 5HP MMY-	Used Q'ty	Inverter 6HP MMY-	Used Q'ty	Inverter 8HP MMY-	Used Q'ty	Inverter 10HP MMY-	Used Q'ty	Inverter 12HP MMY-	Used Q'ty
5HP (5)	MAP0501T8	1	MAP0501T8	1								
6HP (6)	MAP0601T8	1			MAP0601T8	1						
8HP (8)	MAP0801T8	1					MAP0801T8	1				
10HP (10)	MAP1001T8	1							MAP1001T8	1		
12HP (12)	MAP1201T8	1									MAP1201T8	1
14HP (14)	AP1401T8	2			MAP0601T8	1	MAP0801T8	1				
16HP (16)	AP1601T8	2					MAP0801T8	2				
18HP (18)	AP1801T8	2					MAP0801T8	1	MAP1001T8	1		
20HP (20)	AP2001T8	2							MAP1001T8	2		
22HP (22)	AP2201T8	3			MAP0601T8	1	MAP0801T8	2				
22HP (22)	AP2211T8	2							MAP1001T8	1	MAP1201T8	1
24HP (24)	AP2401T8	3					MAP0801T8	3				
24HP (24)	AP2411T8	2									MAP1201T8	2
26HP (26)	AP2601T8	3					MAP0801T8	2	MAP1001T8	1		
28HP (28)	AP2801T8	3					MAP0801T8	1	MAP1001T8	2		
30HP (30)	AP3001T8	3							MAP1001T8	3		
32HP (32)	AP3201T8	4					MAP0801T8	4				
32HP (32)	AP3211T8	3							MAP1001T8	2	MAP1201T8	1
34HP (34)	AP3401T8	4					MAP0801T8	3	MAP1001T8	1		
34HP (34)	AP3411T8	3							MAP1001T8	1	MAP1201T8	2
36HP (36)	AP3601T8	4					MAP0801T8	2	MAP1001T8	2		
36HP (36)	AP3611T8	3									MAP1201T8	3
38HP (38)	AP3801T8	4					MAP0801T8	1	MAP1001T8	3		
40HP (40)	AP4001T8	4							MAP1001T8	4		
42HP (42)	AP4201T8	4							MAP1001T8	3	MAP1201T8	1
44HP (44)	AP4401T8	4							MAP1001T8	2	MAP1201T8	2
46HP (46)	AP4601T8	4							MAP1001T8	1	MAP1201T8	3
48HP (46)	AP4801T8	4									MAP1201T8	4

1. Allocation standard of model name



2. Range of combined capacity

No. of combined units : 1 to 4 units

Capacity of combined units : 14 HP (140 type) to 48 HP (480 type)

3. Rated conditions (Rated mode : Condition)

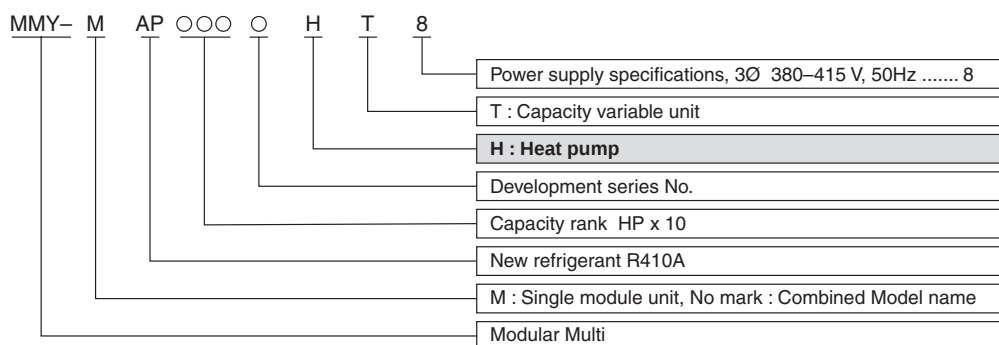
Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

Super Modular Multi System Outdoor Unit :

List of Product and Combined Model Name

HP (Capacity code)	Model name MMY-	No. of combined units	Inverter 5 HP MMY-	Used Q'ty	Inverter 6 HP MMY-	Used Q'ty	Inverter 8 HP MMY-	Used Q'ty	Inverter 10 HP MMY-	Used Q'ty	Inverter 12 HP MMY-	Used Q'ty
5HP (5)	MAP0501HT8	1	MAP0501HT8	1								
6HP (6)	MAP0601HT8	1			MAP0601HT8	1						
8HP (8)	MAP0801HT8	1					MAP0801HT8	1				
10HP (10)	MAP1001HT8	1							MAP1001HT8	1		
12HP (12)	MAP1201HT8	1									MAP1201HT8	1
14HP (14)	AP1401HT8	2			MAP0601HT8	1	MAP0801HT8	1				
16HP (16)	AP1601HT8	2					MAP0801HT8	2				
18HP (18)	AP1801HT8	2					MAP0801HT8	1	MAP1001HT8	1		
20HP (20)	AP2001HT8	2							MAP1001HT8	2		
22HP (22)	AP2201HT8	3			MAP0601HT8	1	MAP0801HT8	2				
22HP (22)	AP2211HT8	2							MAP1001HT8	1	MAP1201HT8	1
24HP (24)	AP2401HT8	3					MAP0801HT8	3				
24HP (24)	AP2411HT8	2									MAP1201HT8	2
26HP (26)	AP2601HT8	3					MAP0801HT8	2	MAP1001HT8	1		
28HP (28)	AP2801HT8	3					MAP0801HT8	1	MAP1001HT8	2		
30HP (30)	AP3001HT8	3							MAP1001HT8	3		
32HP (32)	AP3201HT8	4					MAP0801HT8	4				
32HP (32)	AP3211HT8	3							MAP1001HT8	2	MAP1201HT8	1
34HP (34)	AP3401HT8	4					MAP0801HT8	3	MAP1001HT8	1		
34HP (34)	AP3411HT8	3							MAP1001HT8	1	MAP1201HT8	2
36HP (36)	AP3601HT8	4					MAP0801HT8	2	MAP1001HT8	2		
36HP (36)	AP3611HT8	3									MAP1201HT8	3
38HP (38)	AP3801HT8	4					MAP0801HT8	1	MAP1001HT8	3		
40HP (40)	AP4001HT8	4							MAP1001HT8	4		
42HP (42)	AP4201HT8	4							MAP1001HT8	3	MAP1201HT8	1
44HP (44)	AP4401HT8	4							MAP1001HT8	2	MAP1201HT8	2
46HP (46)	AP4601HT8	4							MAP1001HT8	1	MAP1201HT8	3
48HP (46)	AP4801HT8	4									MAP1201HT8	4

1. Allocation standard of model name



2. Range of combined capacity

No. of combined units : 1 to 4 units

Capacity of combined units : 14 HP (140 type) to 48 HP (480 type)

3. Rated conditions (Rated mode : Condition)

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

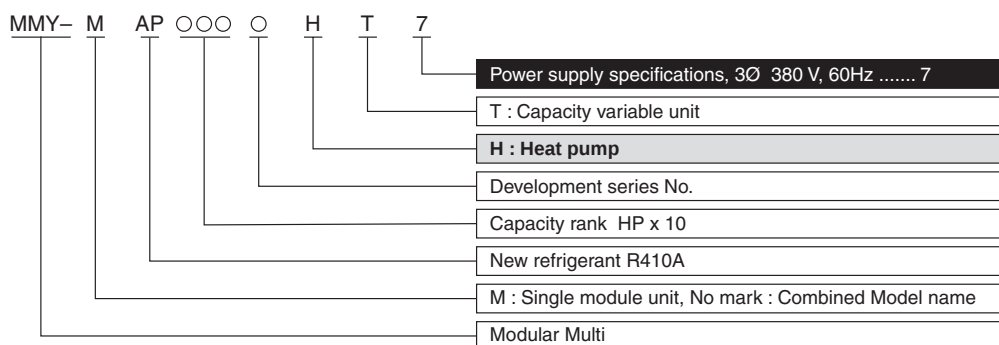
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

Super Modular Multi System Outdoor Unit :

List of Product and Combined Model Name

HP (Capacity code)	Model name MMY-	No. of combined units	Inverter 5 HP MMY-	Used Q'ty	Inverter 6 HP MMY-	Used Q'ty	Inverter 8 HP MMY-	Used Q'ty	Inverter 10 HP MMY-	Used Q'ty	Inverter 12 HP MMY-	Used Q'ty
5HP (5)	MAP0501HT7	1	MAP0501HT7	1								
6HP (6)	MAP0601HT7	1			MAP0601HT7	1						
8HP (8)	MAP0801HT7	1					MAP0801HT7	1				
10HP (10)	MAP1001HT7	1							MAP1001HT7	1		
12HP (12)	MAP1201HT7	1									MAP1201HT7	1
14HP (14)	AP1401HT7	2			MAP0601HT7	1	MAP0801HT7	1				
16HP (16)	AP1601HT7	2					MAP0801HT7	2				
18HP (18)	AP1801HT7	2					MAP0801HT7	1	MAP1001HT7	1		
20HP (20)	AP2001HT7	2							MAP1001HT7	2		
22HP (22)	AP2201HT7	3			MAP0601HT7	1	MAP0801HT7	2				
22HP (22)	AP2211HT7	2							MAP1001HT7	1	MAP1201HT7	1
24HP (24)	AP2401HT7	3					MAP0801HT7	3				
24HP (24)	AP2411HT7	2									MAP1201HT7	2
26HP (26)	AP2601HT7	3					MAP0801HT7	2	MAP1001HT7	1		
28HP (28)	AP2801HT7	3					MAP0801HT7	1	MAP1001HT7	2		
30HP (30)	AP3001HT7	3							MAP1001HT7	3		
32HP (32)	AP3201HT7	4					MAP0801HT7	4				
32HP (32)	AP3211HT7	3							MAP1001HT7	2	MAP1201HT7	1
34HP (34)	AP3401HT7	4					MAP0801HT7	3	MAP1001HT7	1		
34HP (34)	AP3411HT7	3							MAP1001HT7	1	MAP1201HT7	2
36HP (36)	AP3601HT7	4					MAP0801HT7	2	MAP1001HT7	2		
36HP (36)	AP3611HT7	3									MAP1201HT7	3
38HP (38)	AP3801HT7	4					MAP0801HT7	1	MAP1001HT7	3		
40HP (40)	AP4001HT7	4							MAP1001HT7	4		
42HP (42)	AP4201HT7	4							MAP1001HT7	3	MAP1201HT7	1
44HP (44)	AP4401HT7	4							MAP1001HT7	2	MAP1201HT7	2
46HP (46)	AP4601HT7	4							MAP1001HT7	1	MAP1201HT7	3
48HP (46)	AP4801HT7	4									MAP1201HT7	4

1. Allocation standard of model name



2. Range of combined capacity

No. of combined units : 1 to 4 units

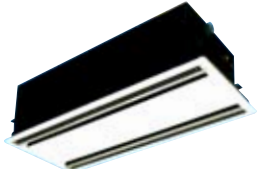
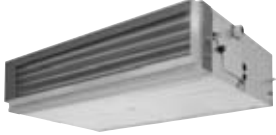
Capacity of combined units : 14 HP (140 type) to 48 HP (480 type)

3. Rated conditions (Rated mode : Condition)

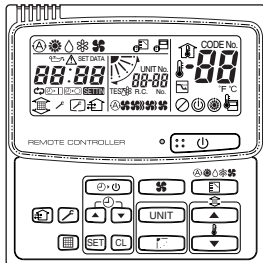
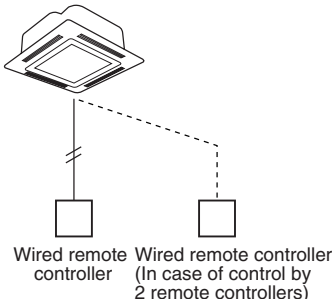
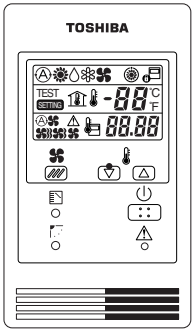
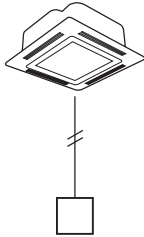
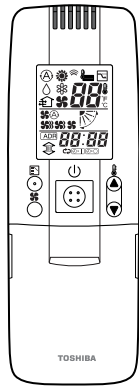
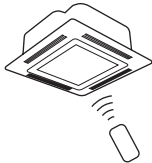
Cooling : Indoor air temperature 27°C DB/19°C WB, Outdoor air temperature 35°C DB

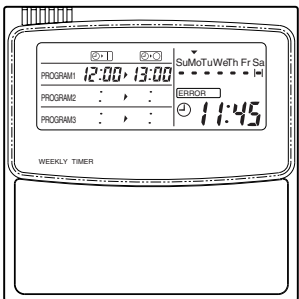
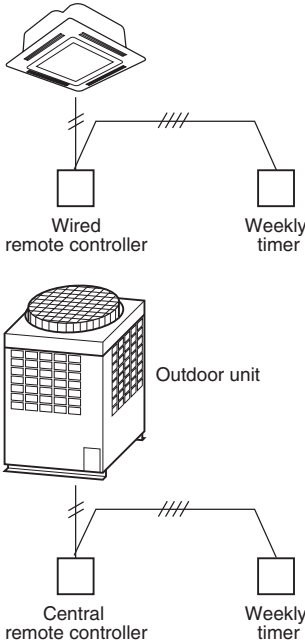
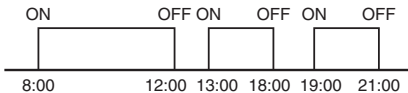
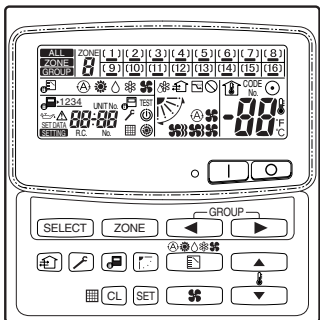
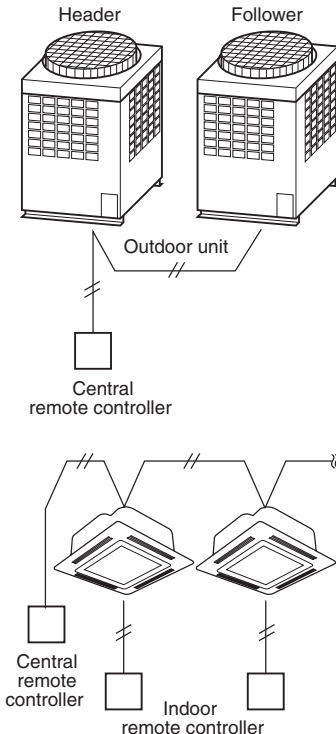
Heating : Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB/6°C WB

4. Indoor unit

Type	Appearance	Model name	Capacity rank	Capacity code	Cooling capacity (kW)	Heating capacity (kW)
4-way Air Discharge Cassette Type		MMU-AP0091H	009 type	1	2.8	3.2
		MMU-AP0121H	012 type	1.25	3.6	4.0
		MMU-AP0151H	015 type	1.7	4.5	5.0
		MMU-AP0181H	018 type	2	5.6	6.3
		MMU-AP0241H	024 type	2.5	7.1	8.0
		MMU-AP0271H	027 type	3	8.0	9.0
		MMU-AP0301H	030 type	3.2	9.0	10.0
		MMU-AP0361H	036 type	4	11.2	12.5
		MMU-AP0481H	048 type	5	14.0	16.0
		MMU-AP0561H	056 type	6	16.0	18.0
2-way Air Discharge Cassette Type		MMU-AP0071WH	007 type	0.8	2.2	2.5
		MMU-AP0091WH	009 type	1	2.8	3.2
		MMU-AP0121WH	012 type	1.25	3.6	4.0
		MMU-AP0151WH	015 type	1.7	4.5	5.0
		MMU-AP0181WH	018 type	2	5.6	6.3
		MMU-AP0241WH	024 type	2.5	7.1	8.0
		MMU-AP0271WH	027 type	3	8.0	9.0
		MMU-AP0301WH	030 type	3.2	9.0	10.0
		MMU-AP0481WH (China only)	048 type	5	14.0	16.0
1-way Air Discharge Cassette Type		MMU-AP0071YH	007 type	0.8	2.2	2.5
		MMU-AP0091YH	009 type	1	2.8	3.2
		MMU-AP0121YH	012 type	1.25	3.6	4.0
		MMU-AP0151SH	015 type	1.7	4.5	5.0
		MMU-AP0181SH	018 type	2	5.6	6.3
		MMU-AP0241SH	024 type	2.5	7.1	8.0
Concealed Duct Standard Type		MMD-AP0071BH	007 type	0.8	2.2	2.5
		MMD-AP0091BH	009 type	1	2.8	3.2
		MMD-AP0121BH	012 type	1.25	3.6	4.0
		MMD-AP0151BH	015 type	1.7	4.5	5.0
		MMD-AP0181BH	018 type	2	5.6	6.3
		MMD-AP0241BH	024 type	2.5	7.1	8.0
		MMD-AP0271BH	027 type	3	8.0	9.0
		MMD-AP0301BH	030 type	3.2	9.0	10.0
		MMD-AP0361BH	036 type	4	11.2	12.5
		MMD-AP0481BH	048 type	5	14.0	16.0
		MMD-AP0561BH	056 type	6	16.0	18.0
		MMD-AP0181H	018 type	2	5.6	6.3
		MMD-AP0241H	024 type	2.5	7.1	8.0
		MMD-AP0271H	027 type	3	8.0	9.0
Concealed Duct High Static Pressure Type		MMD-AP0361H	036 type	4	11.2	12.5
		MMD-AP0481H	048 type	5	14.0	16.0
		MMD-AP0721H	072 type	8	22.4	25.0
		MMD-AP0961H	096 type	10	28.0	31.5
		MMC-AP0151H	015 type	1.7	4.5	5.0
		MMC-AP0181H	018 type	2	5.6	6.3
Under Ceiling Type		MMC-AP0241H	024 type	2.5	7.1	8.0
		MMC-AP0271H	027 type	3	8.0	9.0
		MMC-AP0361H	036 type	4	11.2	12.5
		MMC-AP0481H	048 type	5	14.0	16.0
		MMK-AP0071H	007 type	0.8	2.2	2.5
		MMK-AP0091H	009 type	1	2.8	3.2
High Wall Type		MMK-AP0121H	012 type	1.25	3.6	4.0
		MMK-AP0151H	015 type	1.7	4.5	5.0
		MMK-AP0181H	018 type	2	5.6	6.3
		MMK-AP0241H	024 type	2.5	7.1	8.0
		MML-AP0071H	007 type	0.8	2.2	2.5
		MML-AP0091H	009 type	1	2.8	3.2
Floor Standing Cabinet Type		MML-AP0121H	012 type	1.25	3.6	4.0
		MML-AP0151H	015 type	1.7	4.5	5.0
		MML-AP0181H	018 type	2	5.6	6.3
		MML-AP0241H	024 type	2.5	7.1	8.0
		MML-AP0071BH	007 type	0.8	2.2	2.5
		MML-AP0091BH	009 type	1	2.8	3.2
Floor Standing Concealed Type		MML-AP0121BH	012 type	1.25	3.6	4.0
		MML-AP0151BH	015 type	1.7	4.5	5.0
		MML-AP0181BH	018 type	2	5.6	6.3
		MML-AP0241BH	024 type	2.5	7.1	8.0
		MMF-AP0151H	015 type	1.7	4.5	5.0
		MMF-AP0181H	018 type	2	5.6	6.3
Floor Standing Type		MMF-AP0241H	024 type	2.5	7.1	8.0
		MMF-AP0271H	027 type	3	8.0	9.0
		MMF-AP0361H	036 type	4	11.2	12.5
		MMF-AP0481H	048 type	5	14.0	16.0
		MMF-AP0561H	056 type	6	16.0	18.0

5. Remote controller

Name	Model name	Appearance	Application	Function
Wired remote controller	RBC-AMT21E		Connected to indoor unit 	- Start / Stop - Changing mode - Temperature setting - Air flow changing - Timer function ① Either "ON" time or "OFF" time or "CYCLIC" can be set how many 30 min. later ON or OFF is operated. ② Combined with the weekly timer, weekly schedule operation can be operated. - Filter sign Displays automatically maintenance time of indoor filter. Filter sign flashes. - Self-diagnosis function Pressing "CHECK" button displays cause of trouble on the check code. - Control by 2 remote controllers is available. Two remote controllers can be connected to one indoor unit. The indoor unit can be separately operated from the isolated places.
Simple remote controller	RBC-AS21E		Connected to indoor unit  Simple remote controller	- Start / Stop - Temperature setting - Air flow changing - Check code display
Wireless remote controller kit	TCB-AX21U (W)-E		Connected to indoor unit 	- Start / Stop - Changing mode - Temperature setting - Air flow changing - Timer function Either "ON" time or "OFF" time or "CYCLIC" can be set how many 30 min. later ON or OFF is operated. - Control by 2 remote controllers is available. Two wireless remote controllers can operate one indoor unit. The indoor unit can be separately operated from the isolated places. - Check code display TCB-AX21U (W)-E (For 4-way Air Discharge Cassette) RBC-AX22CE (For Under Ceiling) TCB-AX21E (For others except concealed duct high static pressure)
	RBC-AX22CE			
	TCB-AX21E			

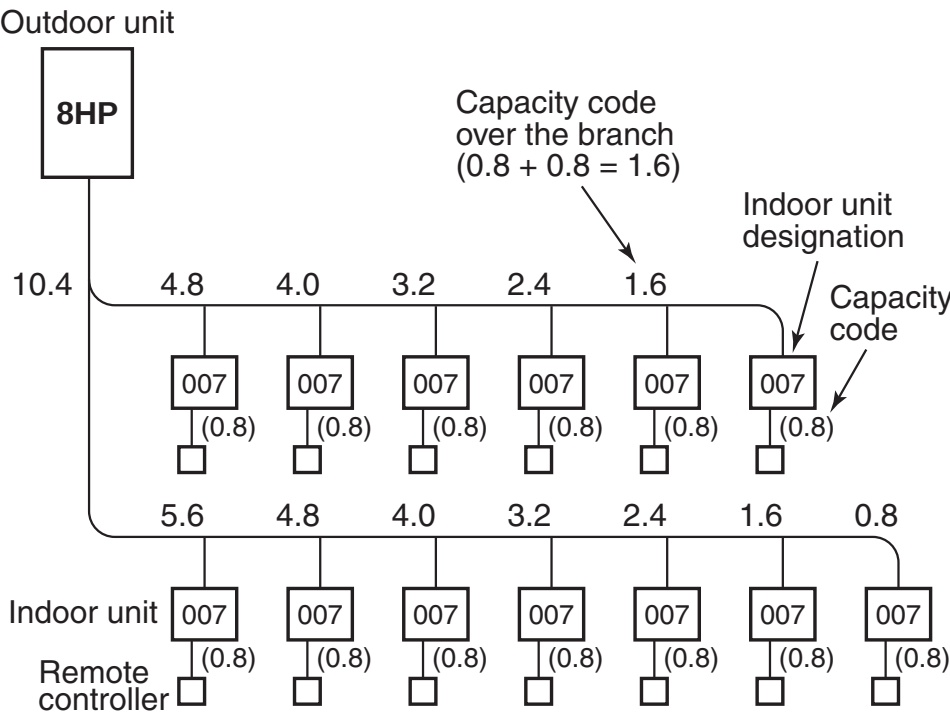
Name	Model name	Appearance	Application	Performance
Weekly timer	RBC-EXW21E		Connected to central remote controller, wired remote controller 	- Weekly schedule operation - Setting different start / stop time for each day of the week - ON / OFF can be easily set 3 times a day.  "CHECK" "PROGRAM" "DAY" button make setting copy easy. - Two patterns of schedule for a week can be specified. (Summer schedule and winter schedule, etc.) "CANCEL" "DAY" button make holiday setting easy. - If power supply fails, the setting contents are stored in memory, for 100 hours.
Central remote controller	TCB-SC642TLE		Connected to outdoor unit, indoor unit 	- Individual control up to 64 indoor units. - Individual control for max. 64 indoor units divided 1 to 4 zone. (Up to 16 indoor units for each zone) - Up to 16 outdoor header units are connectable. 4 type central control setting to inhibit individual operation by remote controller can be selected. - Setting for one of 1 to 4 zone is available. - Usable with other central control devices (Up to 10 central control devices in one control circuit) - Two control mode selectivity (Central controller mode Remote controller mode) - Setting of simultaneous ON/OFF 3 times for each day of the week combined with weekly timer.

3. BASIC SYSTEM CONFIGURATION

System legend (ex.)

- Max. indoor unit : 13 units
- Capacity code of indoor unit : $\left\{ \begin{array}{l} \text{Min. : 4} \\ \text{Max. : 10.8} \end{array} \right.$

Capacity code
Total 10.4
No. of total units
13

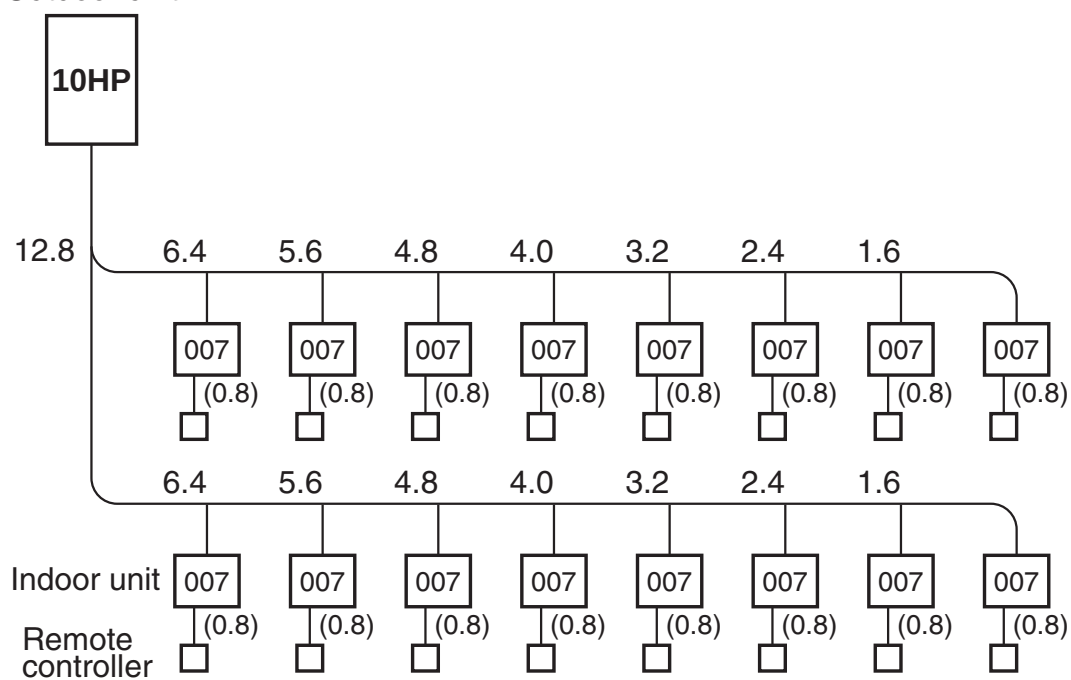


10 HP system

- Max. indoor unit : 16 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 5} \\ \text{Max. : 13.5} \end{array} \right.$

Capacity code
Total 12.8
No. of total units
16

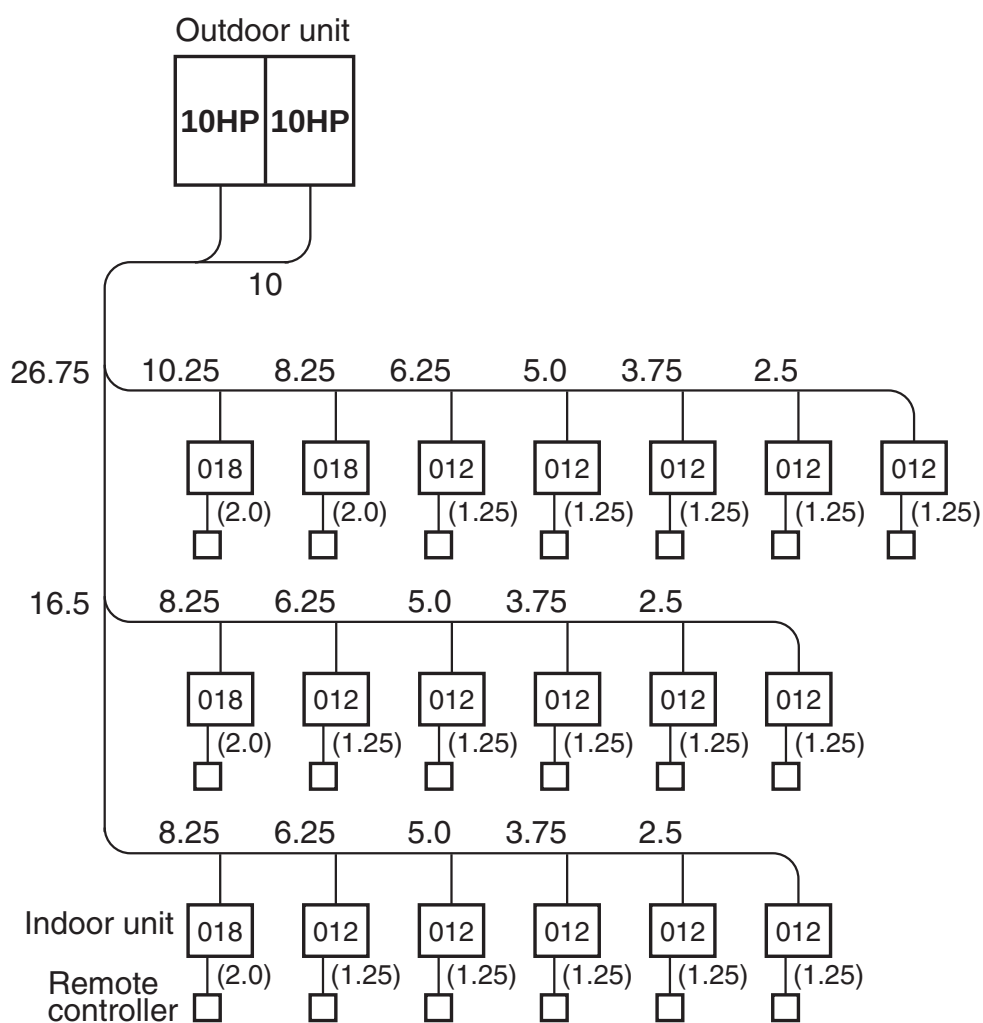
Outdoor unit



20 HP system

- Max. indoor unit : 33 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 10} \\ \text{Max. : 27} \end{array} \right.$

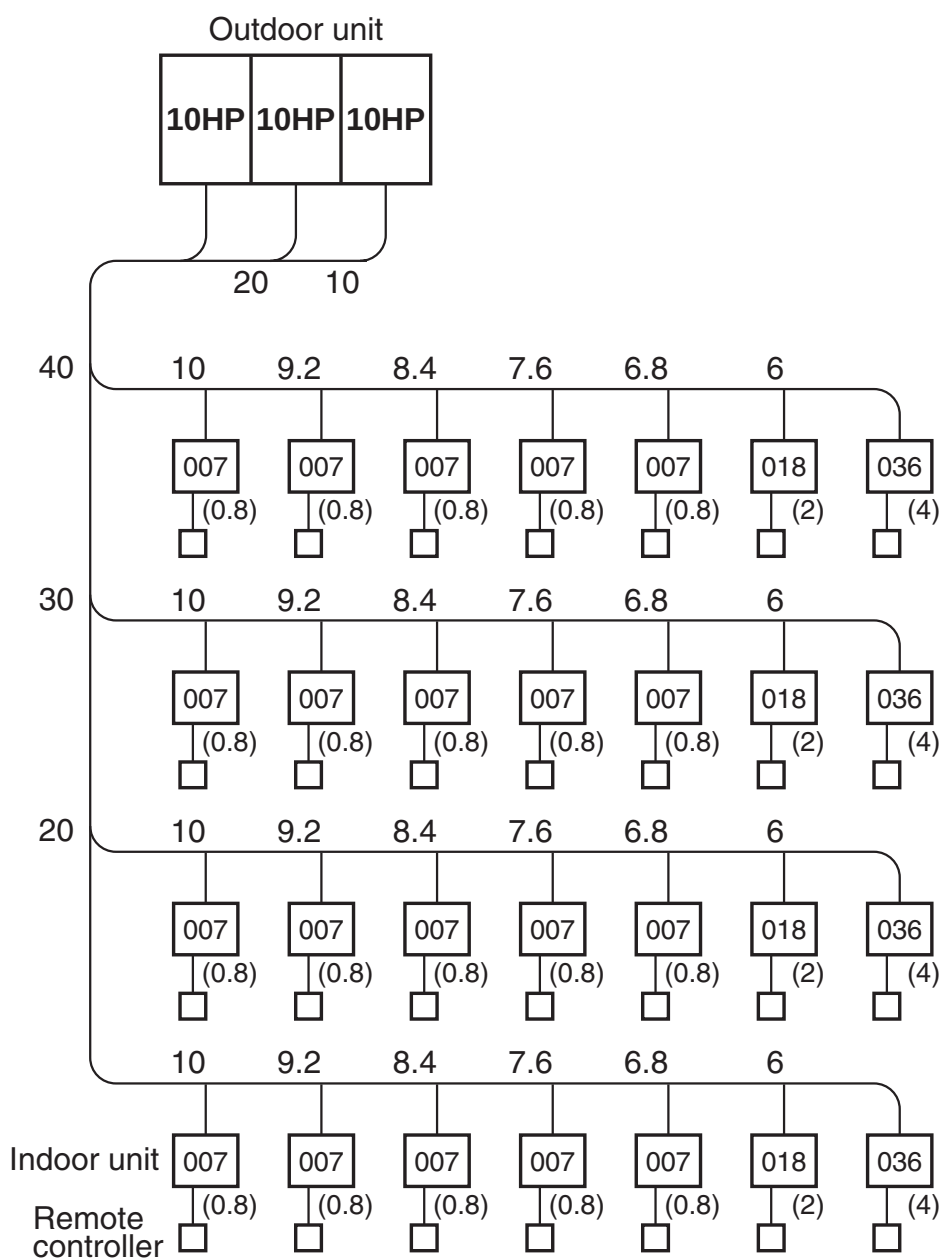
Capacity code
Total 26.75
No. of total units
19



30 HP system

- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 15} \\ \text{Max. : 40.5} \end{array} \right.$

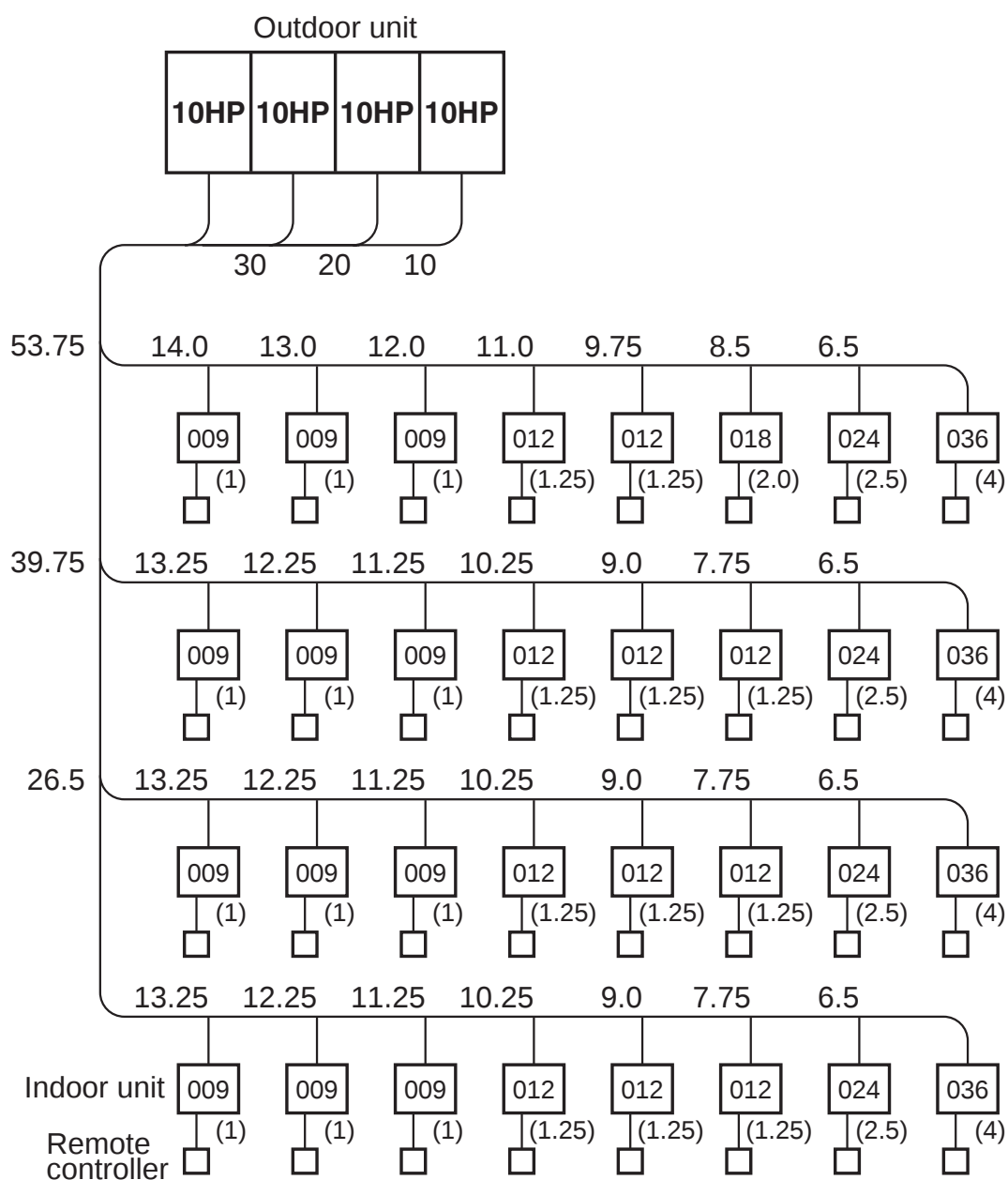
Capacity code
Total 40
No. of total units
28



40 HP system

- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 20} \\ \text{Max. : 54} \end{array} \right.$

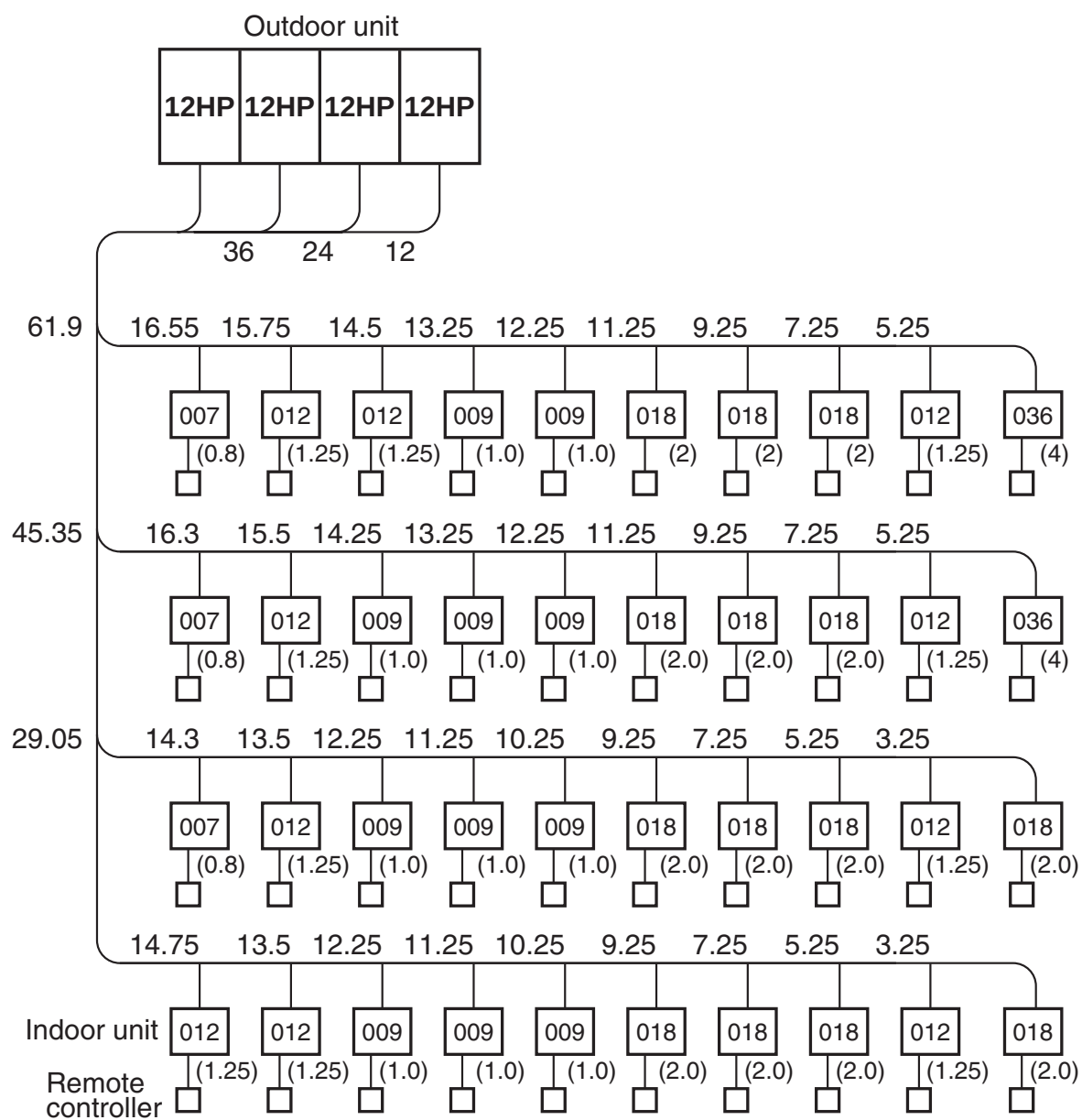
Capacity code
Total 53.75
No. of total units
32



System legend (ex.)

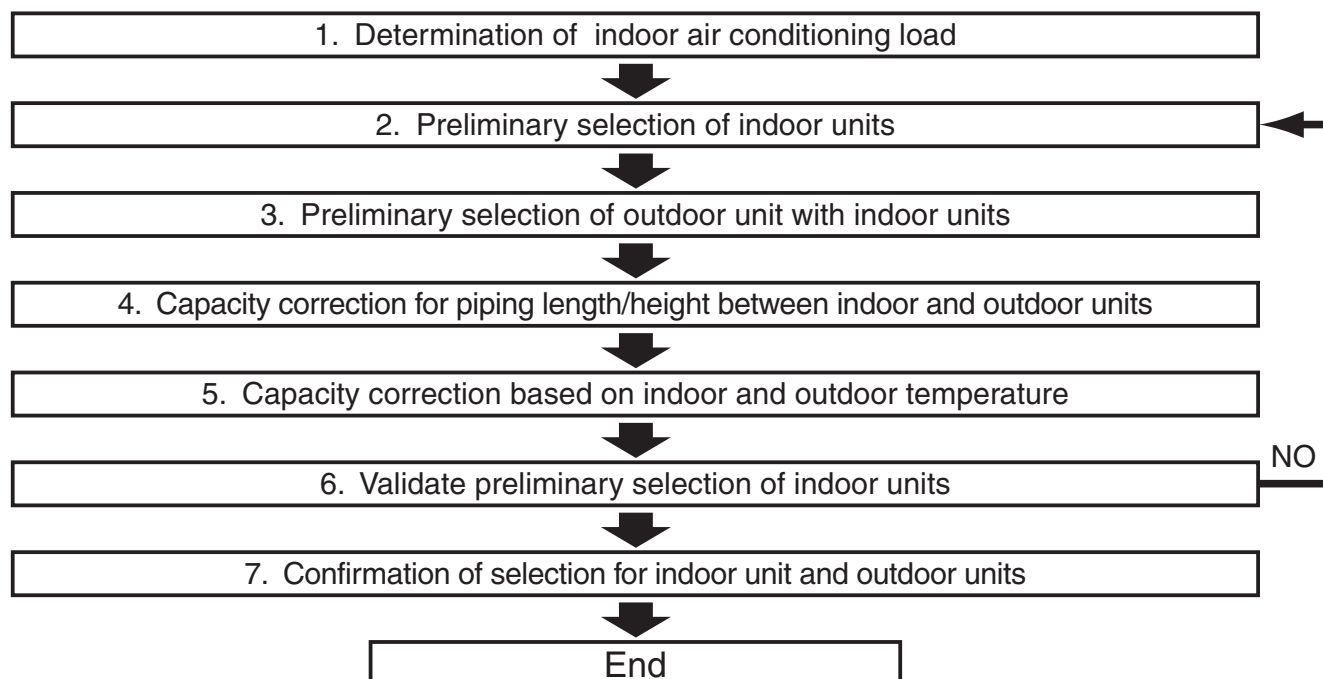
- Max. indoor unit : 48 units
- Capacity code of indoor unit : $\left(\begin{array}{l} \text{Min. : 24} \\ \text{Max. : 64.8} \end{array} \right.$

Capacity code
Total 61.9
No. of total units
40



4. EQUIPMENT SELECTION PROCEDURE

1. Selection flow chart



2. Combination conditions for indoor unit and outdoor unit

1. For indoor unit, the capacity code is decided for each capacity rank.

Capacity rank type	007	009	012	015	018	024	027	030	036	048	056	072	096
Capacity code	0.8	1	1.25	1.7	2	2.5	3	3.2	4	5	6	8	10

NOTE :

Capacity rank : Correspondence to Btu/h. Capacity code : Correspondence to Horsepower.

2. For outdoor unit, maximum No. of connectable indoor units and total capacity code of indoor units are decided.

Outdoor unit (Cooling only)	Outdoor unit (Heat pump)	Outdoor unit (Heat pump)	Capacity code of outdoor unit	Max. No. of indoor units	Total capacity code of indoor units
MMY-MAP0501T8	MMY-MAP0501HT8	MMY-MAP0501HT7	5	8	2.5 to 6.75
MMY-MAP0601T8	MMY-MAP0601HT8	MMY-MAP0601HT7	6	10	3 to 8.1
MMY-MAP0801T8	MMY-MAP0801HT8	MMY-MAP0801HT7	8	13	4 to 10.8
MMY-MAP1001T8	MMY-MAP1001HT8	MMY-MAP1001HT7	10	16	5 to 13.5
MMY-MAP1201T8	MMY-MAP1201HT8	MMY-MAP1201HT7	12	20	6 to 16.2
MMY-AP1401T8	MMY-AP1401HT8	MMY-AP1401HT7	14	23	7 to 18.9
MMY-AP1601T8	MMY-AP1601HT8	MMY-AP1601HT7	16	27	8 to 21.6
MMY-AP1801T8	MMY-AP1801HT8	MMY-AP1801HT7	18	30	9 to 24.3
MMY-AP2001T8	MMY-AP2001HT8	MMY-AP2001HT7	20	33	10 to 27
MMY-AP2201T8	MMY-AP2201HT8	MMY-AP2201HT7	22	37	11 to 29.7
MMY-AP2211T8	MMY-AP2211HT8	MMY-AP2211HT7	22	37	11 to 29.7
MMY-AP2401T8	MMY-AP2401HT8	MMY-AP2401HT7	24	40	12 to 32.4
MMY-AP2411T8	MMY-AP2411HT8	MMY-AP2411HT7	24	40	12 to 32.4
MMY-AP2601T8	MMY-AP2601HT8	MMY-AP2601HT7	26	43	13 to 35.1
MMY-AP2801T8	MMY-AP2801HT8	MMY-AP2801HT7	28	47	14 to 37.8
MMY-AP3001T8	MMY-AP3001HT8	MMY-AP3001HT7	30	48	15 to 40.5
MMY-AP3201T8	MMY-AP3201HT8	MMY-AP3201HT7	32	48	16 to 43.2
MMY-AP3211T8	MMY-AP3211HT8	MMY-AP3211HT7	32	48	16 to 43.2
MMY-AP3401T8	MMY-AP3401HT8	MMY-AP3401HT7	34	48	17 to 45.9
MMY-AP3411T8	MMY-AP3411HT8	MMY-AP3411HT7	34	48	17 to 45.9
MMY-AP3601T8	MMY-AP3601HT8	MMY-AP3601HT7	36	48	18 to 48.6
MMY-AP3611T8	MMY-AP3611HT8	MMY-AP3611HT7	36	48	18 to 48.6
MMY-AP3801T8	MMY-AP3801HT8	MMY-AP3801HT7	38	48	19 to 51.3
MMY-AP4001T8	MMY-AP4001HT8	MMY-AP4001HT7	40	48	20 to 54
MMY-AP4201T8	MMY-AP4201HT8	MMY-AP4201HT7	42	48	21 to 56.7
MMY-AP4401T8	MMY-AP4401HT8	MMY-AP4401HT7	44	48	22 to 59.4
MMY-AP4601T8	MMY-AP4601HT8	MMY-AP4601HT7	46	48	23 to 62.1
MMY-AP4801T8	MMY-AP4801HT8	MMY-AP4801HT7	48	48	24 to 64.8

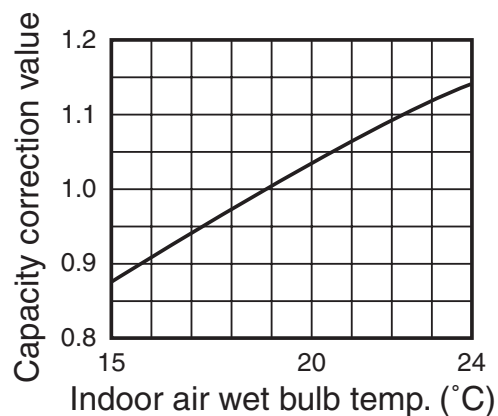
50 to 135 % of outdoor unit capacity ↗

3. Cooling/heating capacity characteristics

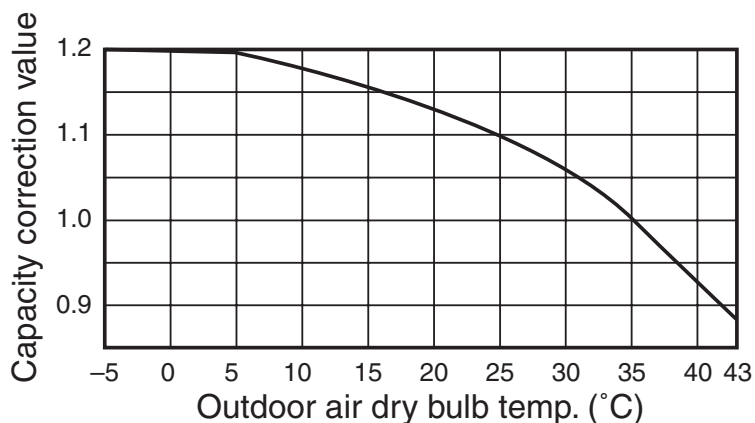
1. Cooling capacity calculation method :

Required cooling capacity = Cooling capacity x Factor (①, ②, ③, ④, ⑤*1) kW

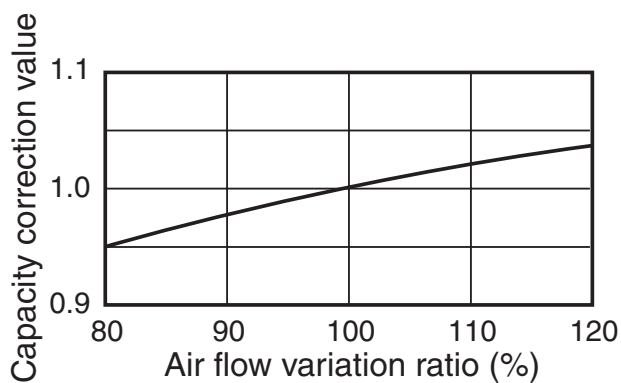
① Indoor air wet bulb temperature vs. capacity correction value



② Outdoor air dry bulb temperature vs. capacity correction value

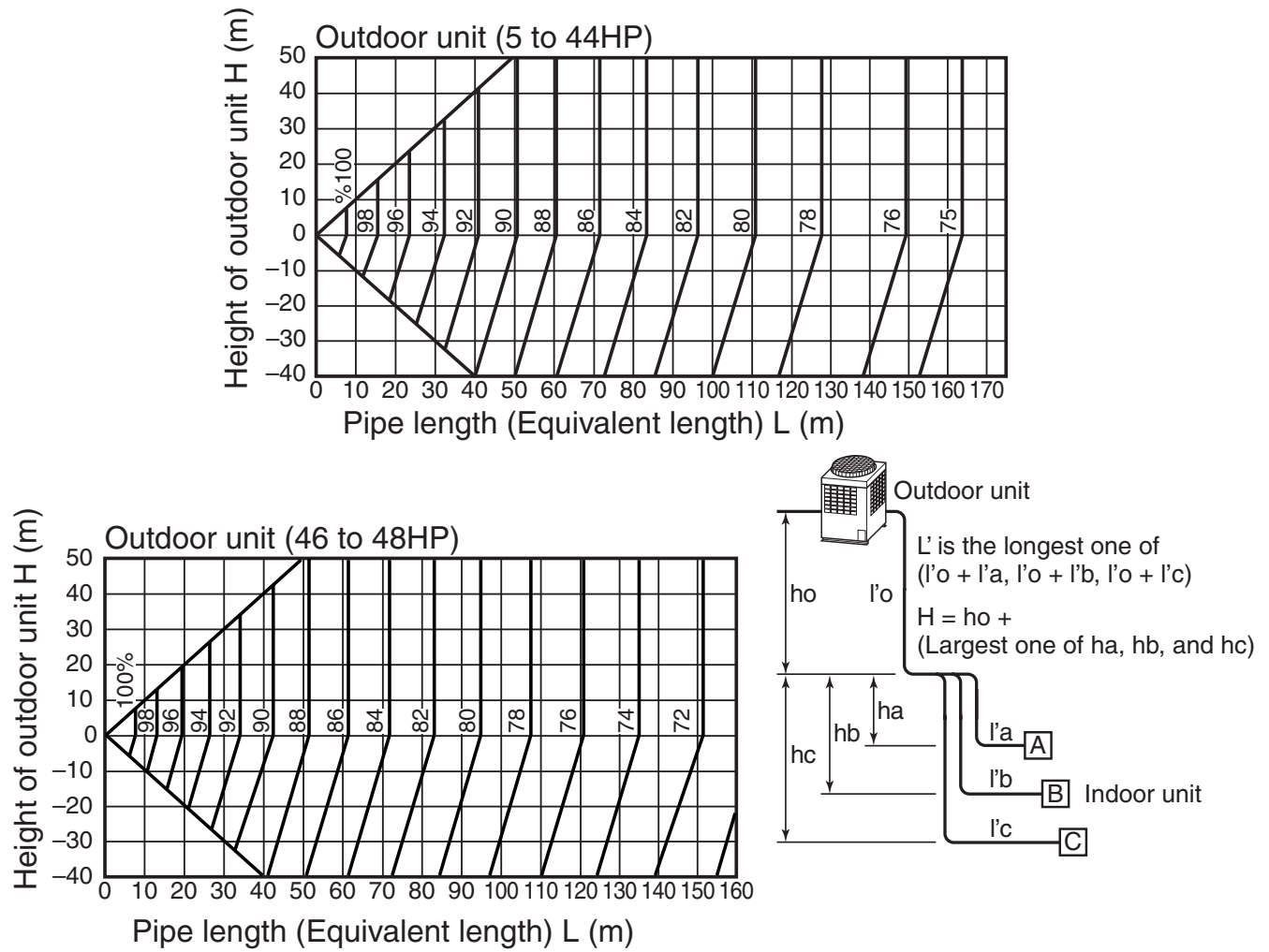


③ Air flow variation ratio of indoor unit vs. capacity correction (For concealed duct type only)

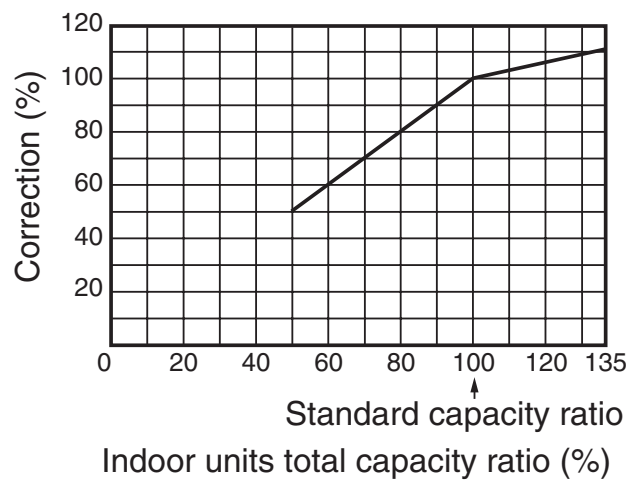


*1 : Coefficient to use for correction of outdoor unit capacity when total capacity of the indoor units are not equal to the outdoor unit capacity.

④ Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



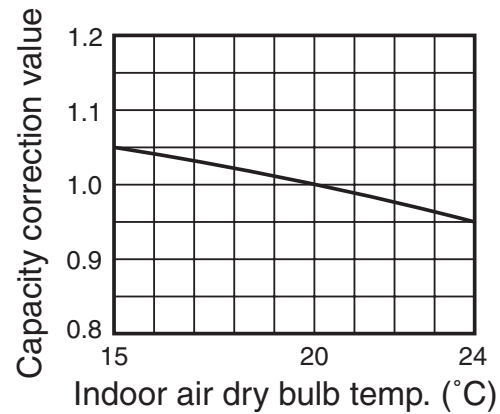
⑤ Correction of outdoor unit diversity



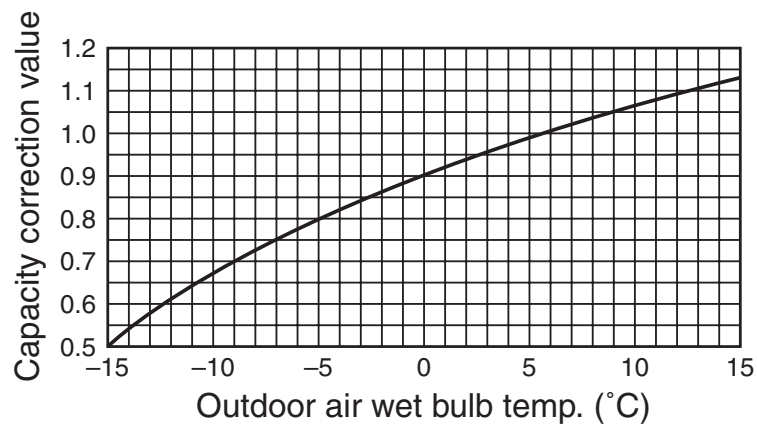
2. Heating capacity calculation method :

Required heating capacity = Heating capacity x Factor (①, ②, ③, ④, ⑤*¹, ⑥*²) kW

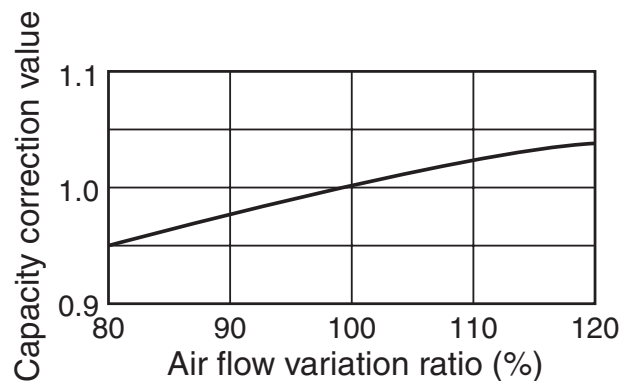
① Indoor air dry bulb temperature vs. capacity correction value



② Outdoor air wet bulb temperature vs. capacity correction value



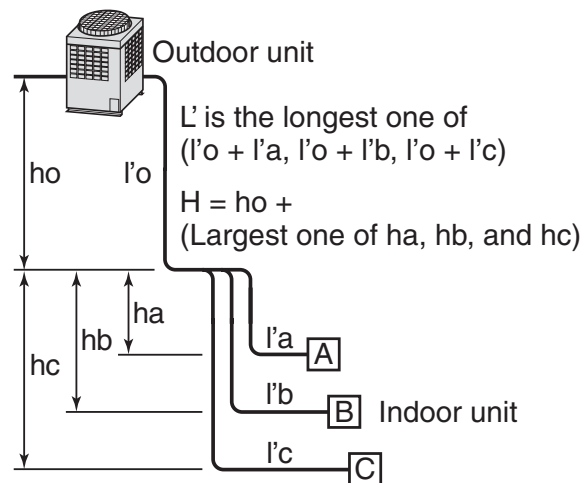
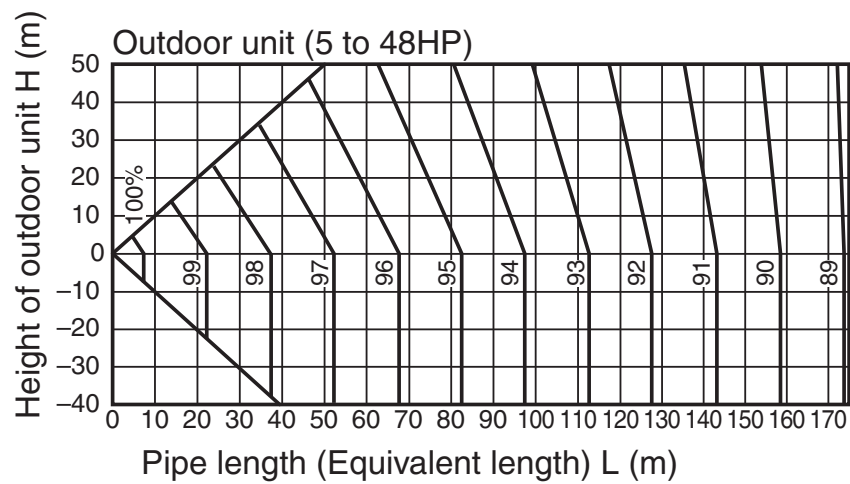
③ Air flow variation ratio of indoor unit vs. capacity correction (For concealed duct type only)



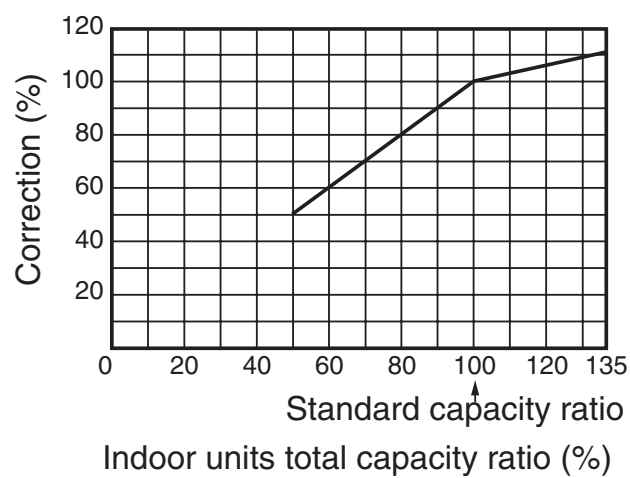
*1 : Coefficient to use for correction of outdoor unit capacity when total capacity of the indoor units are not equal to the outdoor unit capacity.

*2 : Refer to item 3 in page 24.

④ Connecting pipe length and lift difference between indoor and outdoor units vs. capacity correction value



⑤ Correction of outdoor unit diversity

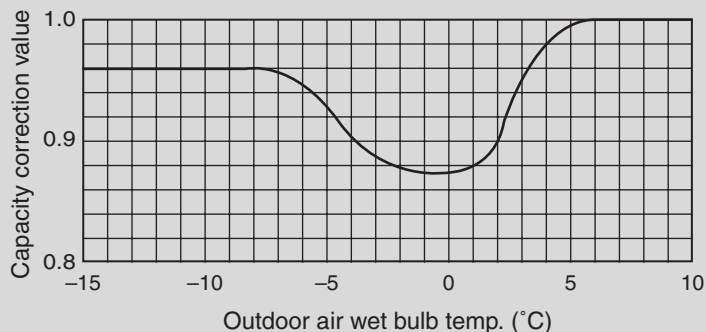


3. Capacity correction in case of frost on the outdoor heat exchanger in heating

Correct the heating capacity when frost was found on the outdoor heat exchanger.

Heating capacity = Capacity after correction of outdoor unit × Correction value of capacity resulted from frost
(Capacity after correction of outdoor unit : Heating capacity calculated in the above item 2.)

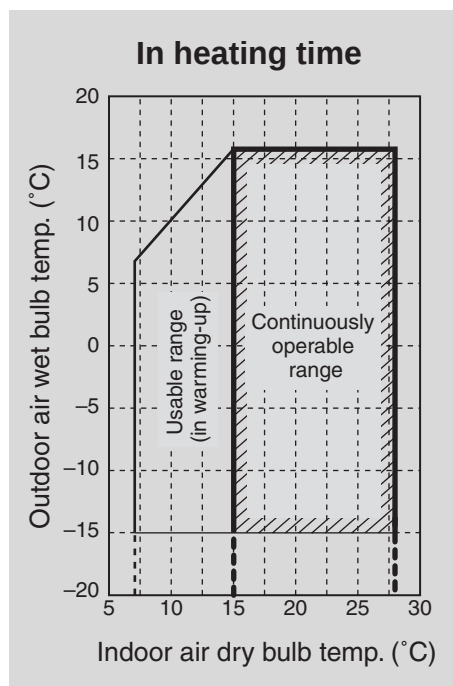
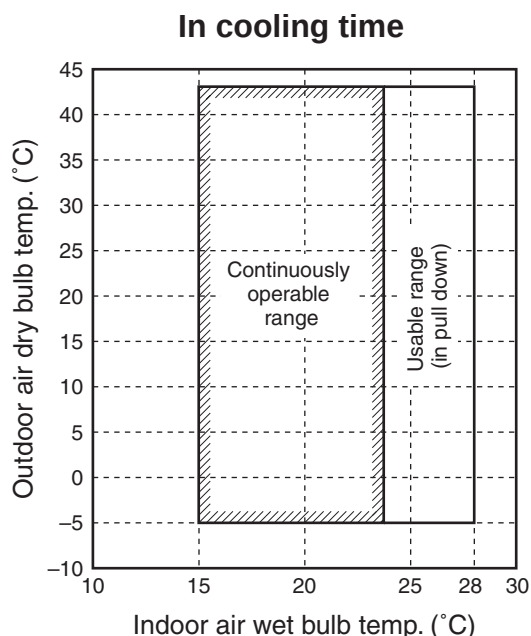
⑥ Capacity correction in case of frost on the outdoor heat exchanger



4. Capacity calculation for each indoor unit

Capacity for each indoor unit
= Capacity after correction of outdoor unit × $\frac{\text{Required standard capacity of indoor unit}}{\text{Total value of standard indoor unit capacity}}$

5. Operating temperature range



6. Rated conditions

Cooling :

Indoor air temperature 27°C DB/19.0°C WB,
Outdoor air temperature 35°C DB

Heating :

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

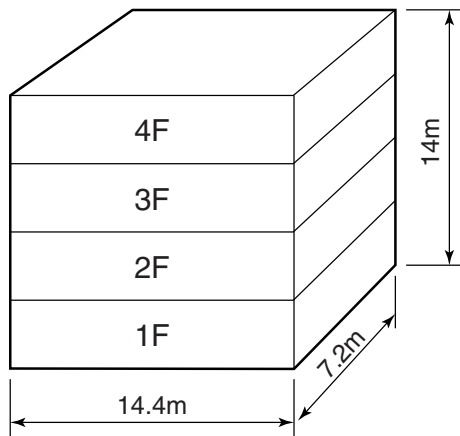
- * The unit can be operated even if outdoor temperature gets down to -20°C, however note that the warranty covers only up to -15°C because operation beyond that temperature is out of specification.
- * When outdoor air temperature falls to under -15°C, it may cause shortening the product lifetime.

4. Example of equipment selection

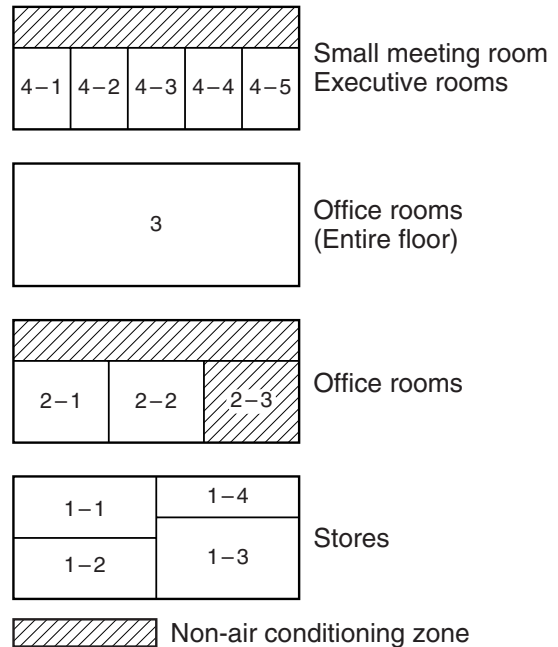
The following shows an example of equipment selection based upon a building model

Fig. 1 Overview of building model

<Outside view>



<Stories configuration>



- Steel frame, reinforced concrete building, four stories above ground. Total floor area : 415m²
Outdoor unit is installed on the roof.
- Design indoor conditions
Cooling : 27.0/19.0°C DB/WB, Heating : 20°C DB
- Design outdoor conditions
Cooling : 35°C DB (Standard condition), Heating : 3°C WB (Standard condition : 6°C WB)



Selection Criteria for Each Floor

1F : Outdoor capacity exactly matches the total indoor capacity.

Total indoor HP = Outdoor unit HP Indoor : 2.5 HP x 2 units + 3.2 HP + 2 HP = 10.2 HP
Outdoor : 10 HP Same capacity

2F : Outdoor capacity matches the potential total indoor capacity in consideration of future extension.

The office rooms 2 and 3 are to be used as warehouses at first, so air conditioner is not necessary now. However, there is a plan to convert them into offices, so an outdoor module with bigger capacity is required. Piping/wiring are carried out. Indoor unit is not yet installed.
When the room is used as an office room, the indoor unit is installed.

3F : One indoor unit is connected to one outdoor unit.

The outdoor module should have sufficient capacity to cover the peak demand of the indoor unit connected.

4F : Consider the diversity factor and have the outdoor module match 135% of indoor unit capacity.

This is a typical matching of indoor/outdoor units for Super MMS system.

- Total indoor units HP > Outdoor unit HP
- Select each indoor unit based on individual peak room load.
Indoor : 2.5 HP + 2.5 HP + 2 HP + 2 HP (Capacity difference in each room) + 1.3 HP = 10.3 HP (Different capacity) Outdoor : 8 HP (Different capacity)
- Consideration for cooling load profile is required.

Procedure and result of equipment selection

1. Procedure of equipment selection

- Calculate cooling for every rooms.
- Select an indoor unit to match the cooling load for every room from the table in page 10.
- Select the outdoor module to match the indoor units selected in item b. Select the outdoor modules based on the critials and the combination rule. Choose a tentative outdoor module that will match with the indoor units, and check whether the selection agrees with the combination rule. Peform capacity correction based on the pipe length, system lift, indoor set temperature, outdoor temperature. Then, make sure the corrected system cooling capacity satisfies the cooling load.

2. Equipment selection and capacity check

Air conditioning load				Equipment selection					
Floor	Room No.	Indoor air conditioning load (kW)		Indoor unit			Outdoor unit		
				Model MMU-	Capacity (kW)		Model MMY-	Capacity (kW)	
		Cooling	Heating		Cooling	Heating		Cooling	Heating
4F	4-1	6.0 (16 o'clock)	5.4	AP0241H	7.1	8.0	AP2801HT8	78.5	88.0
	4-2	5.2 (14 o'clock)	4.2	AP0181H	5.6	6.3			
	4-3	5.0 (14 o'clock)	4.2	AP0181H	5.6	6.3			
	4-4	3.2 (12 o'clock)	2.7	AP0121H	3.6	4.0			
	4-5	6.4 (10 o'clock)	5.4	AP0241H	7.1	8.0			
3F	3-1	12.7	12.0	AP0481H	14.0	16.0	AP2801HT7		
2F	2-1	4.8	4.5	AP0181H	5.6	6.3			
	2-2	4.6	4.8	AP0181H	5.6	6.3			
	2-3	—	—	—	—	—			
1F	1-1	6.5	6.0	AP0241H	7.1	8.0			
	1-2	6.5	6.3	AP0241H	7.1	8.0			
	1-3	7.2	7.0	AP0301H	9.0	10.0			
	1-4	5.1	4.5	AP0181H	5.6	6.3			

Note 1) () : Peak occurrence time

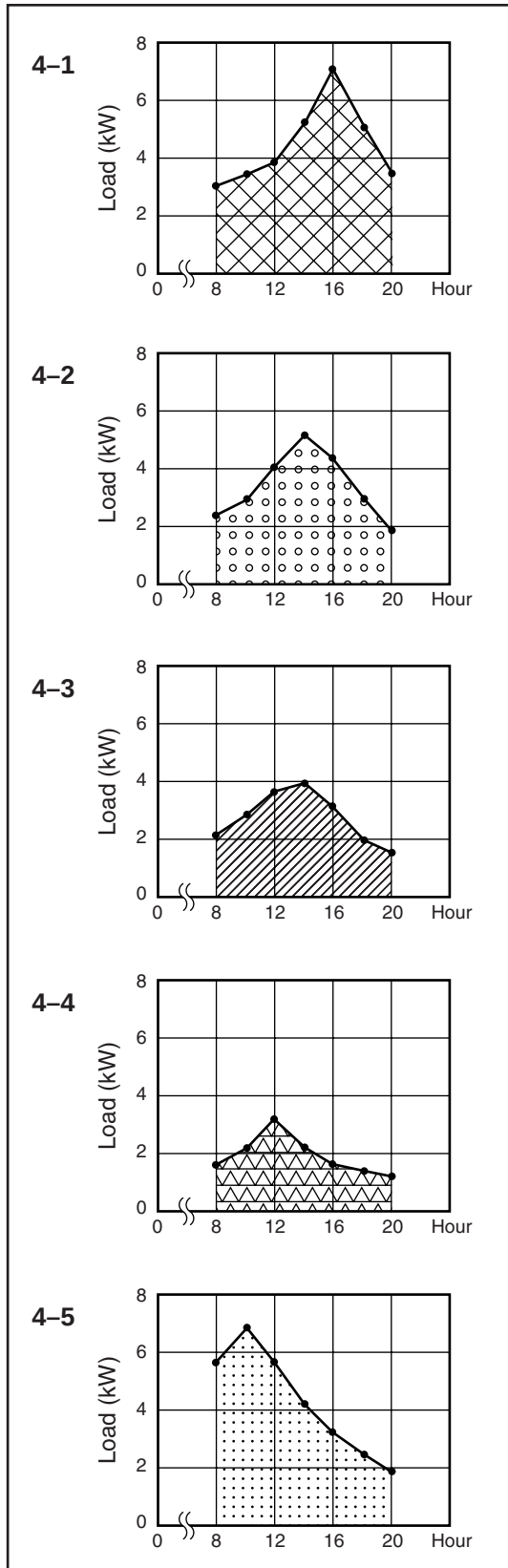
Piping distance				Capacity correction		Capacity check after correction				
Floor	Room No.	Equivalent length (m)	Height difference (m)	Pipe correction x temp. correction		Capacity		Judgment		
						Capacity (kW)				
				Cooling	Heating	Cooling	Heating			
4F	4-1	43	12	0.920 × 1.0 × 1.0 = 0.920	0.957 × 1.0 × 0.95 × 0.95 = 0.864	6.5	6.9	Good		
	4-2					5.2	5.4			
	4-3					5.2	5.4			
	4-4					3.3	3.5			
	4-5					6.5	6.9			
3F	3-1								12.9	13.8
2F	2-1								5.2	5.4
	2-2								5.2	5.4
	2-3								—	—
1F	1-1								6.5	6.9
	1-2								6.5	6.9
	1-3								8.3	8.6
	1-4								5.2	5.4

Example: Equipment selection based on system load profile

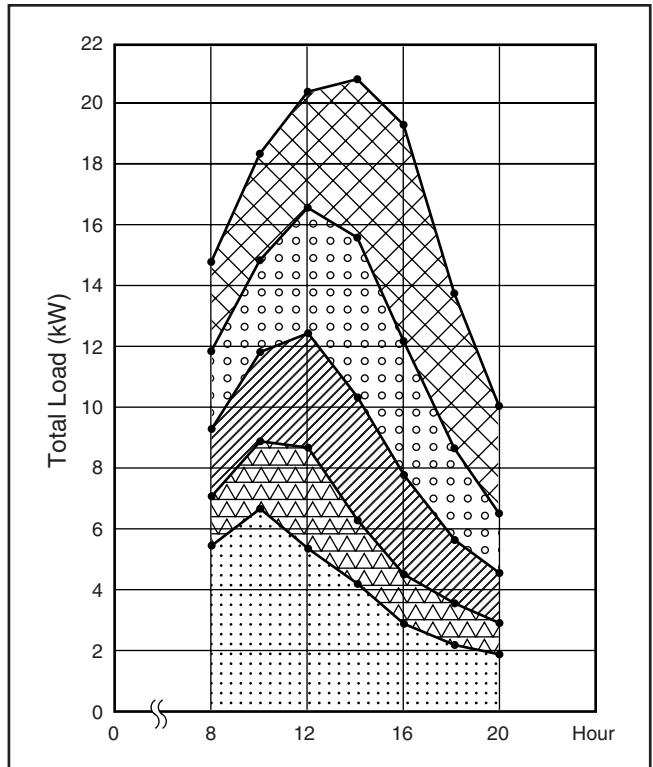
Since the five rooms on the 4th floor face different directions, their hourly cooling load profile will be also different.

We select each indoor unit based on the individual room peak load. However, we need to use the total load profile on the 4th floor as a base to choose the outdoor module.

• Load in each room

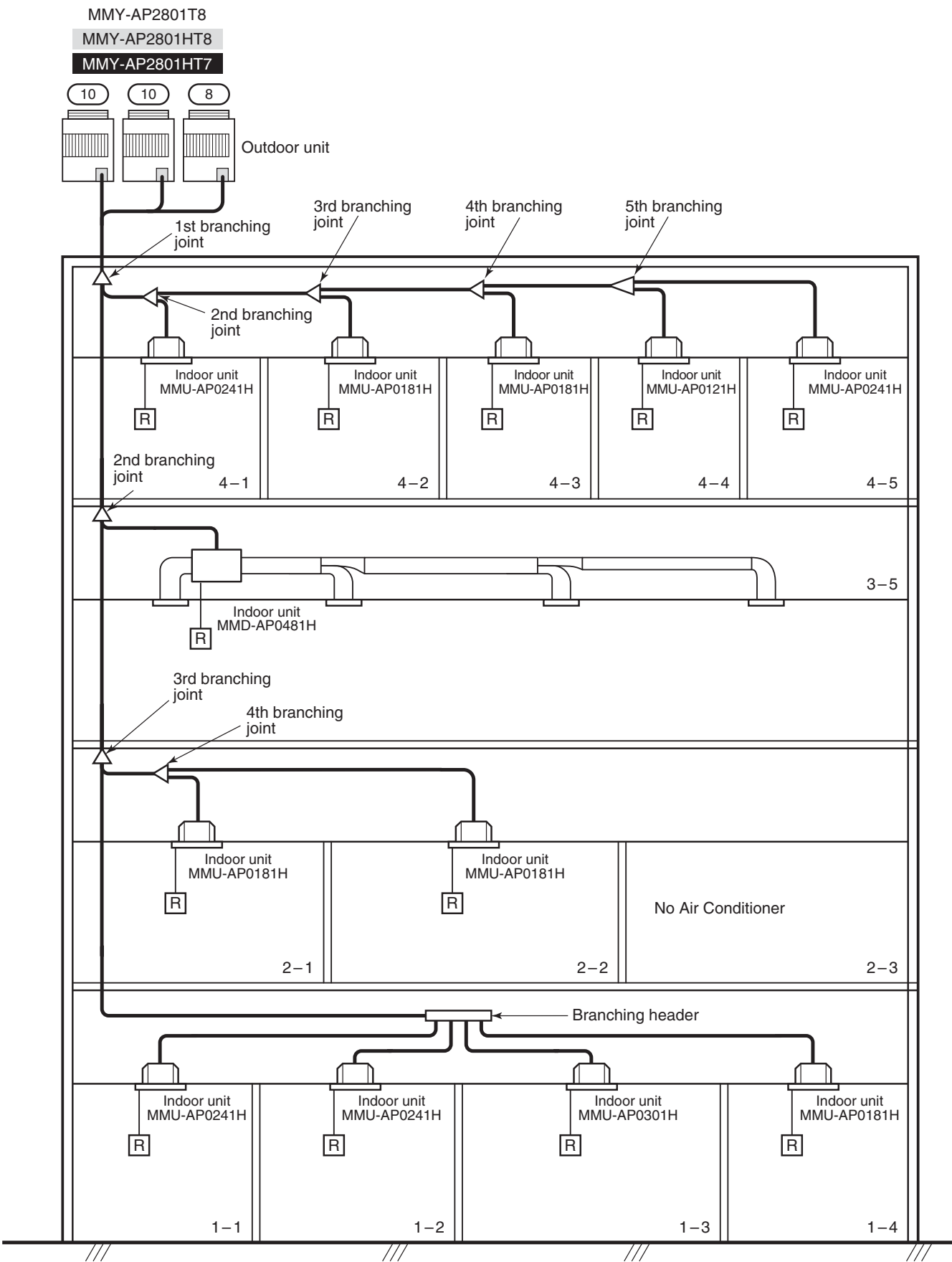


• Total load in all rooms of 4th floor



1. The total load on the 4th floor is calculated by adding the hourly cooling loads of the five rooms.
2. The maximum value of total load is used to select outdoor module.

Schematic diagram



5. REFRIGERANT PIPING DESIGN

1. Warnings on refrigerant leakage

Important

Check of Concentration Limit

The room in which the air conditioner is to be installed requires a design that in the event of refrigerant gas leaking out, its concentration will not exceed a set limit.

The refrigerant R410A which is used in the air conditioner is safe, without the toxicity or combustibility of ammonia, and is not restricted by laws to be imposed which protect the ozone layer. However, since it contains more than air, it poses the risk of suffocation if its concentration should rise excessively. Suffocation from leakage of R410A is almost non-existent. With the recent increase in the number of high concentration buildings, however, the installation of multi air conditioner systems is on the increase because of the need for effective use of floor space, individual control, energy conservation by curtailing heat and carrying power etc.

Most importantly, the multi air conditioner system is able to replenish a large amount of refrigerant compared with conventional individual air conditioners. If a single unit of the multi conditioner system is to be installed in a small room, select a suitable model and installation procedure so that if the refrigerant accidentally leaks out, its concentration does not reach the limit (and in the event of an emergency, measures can be made before injury can occur).

In a room where the concentration may exceed the limit, create an opening with adjacent rooms, or install mechanical ventilation combined with a gas leak detector.

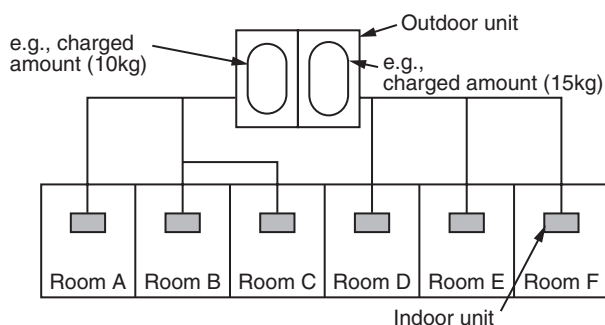
The concentration is as given below.

$$\frac{\text{Total amount of refrigerant (kg)}}{\text{Min. volume of the indoor unit installed room (m}^3\text{)}} \leq \text{Concentration limit (kg/m}^3\text{)}$$

The concentration limit of R410A which is used in multi air conditioners is 0.3kg/m³.

NOTE 1 :

If there are 2 or more refrigerating systems in a single refrigerating device, the amounts of refrigerant should be as charged in each independent device.



For the amount of charge in this example:

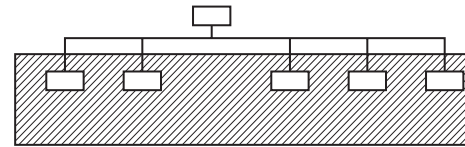
The possible amount of leaked refrigerant gas in rooms A, B and C is 10kg.

The possible amount of leaked refrigerant gas in rooms D, E and F is 15kg.

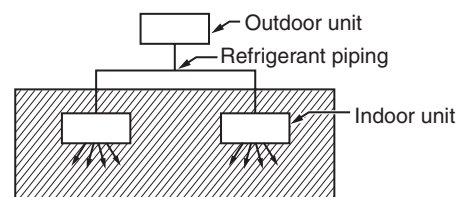
NOTE : 2

The standards for minimum room volume are as follows.

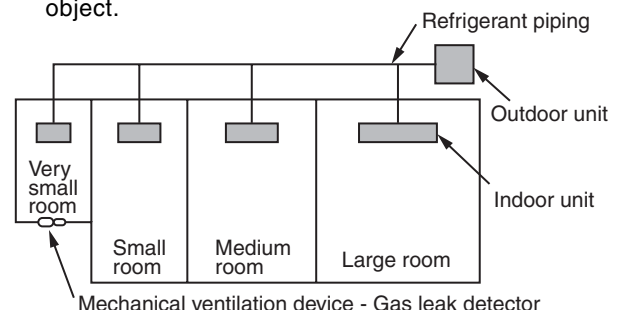
(1) No partition (shaded portion)



(2) When there is an effective opening with the adjacent room for ventilation of leaking refrigerant gas (opening without a door, or an opening 0.15% or larger than the respective floor spaces at the top or bottom of the door).

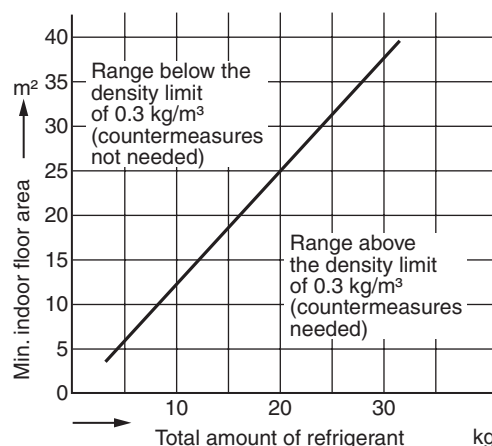


(3) If an indoor unit is installed in each partitioned room and the refrigerant tubing is interconnected, the smallest room of course becomes the object. But when a mechanical ventilation is installed interlocked with a gas leakage detector in the smallest room where the density limit is exceeded, the volume of the next smallest room becomes the object.



NOTE 3 :

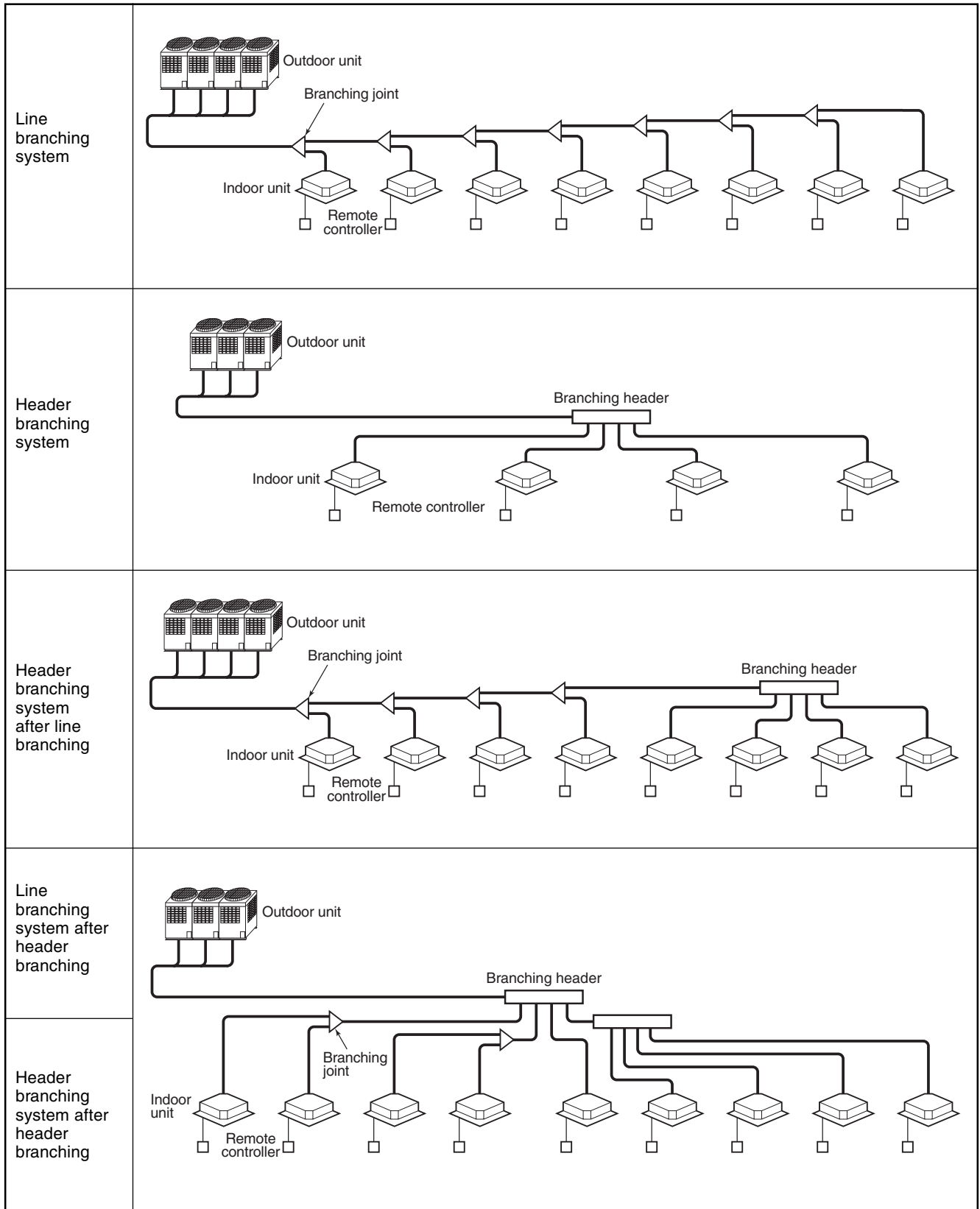
The minimum indoor floor area compared with the amount of refrigerant is roughly as follows: (When the ceiling is 2.7m high)



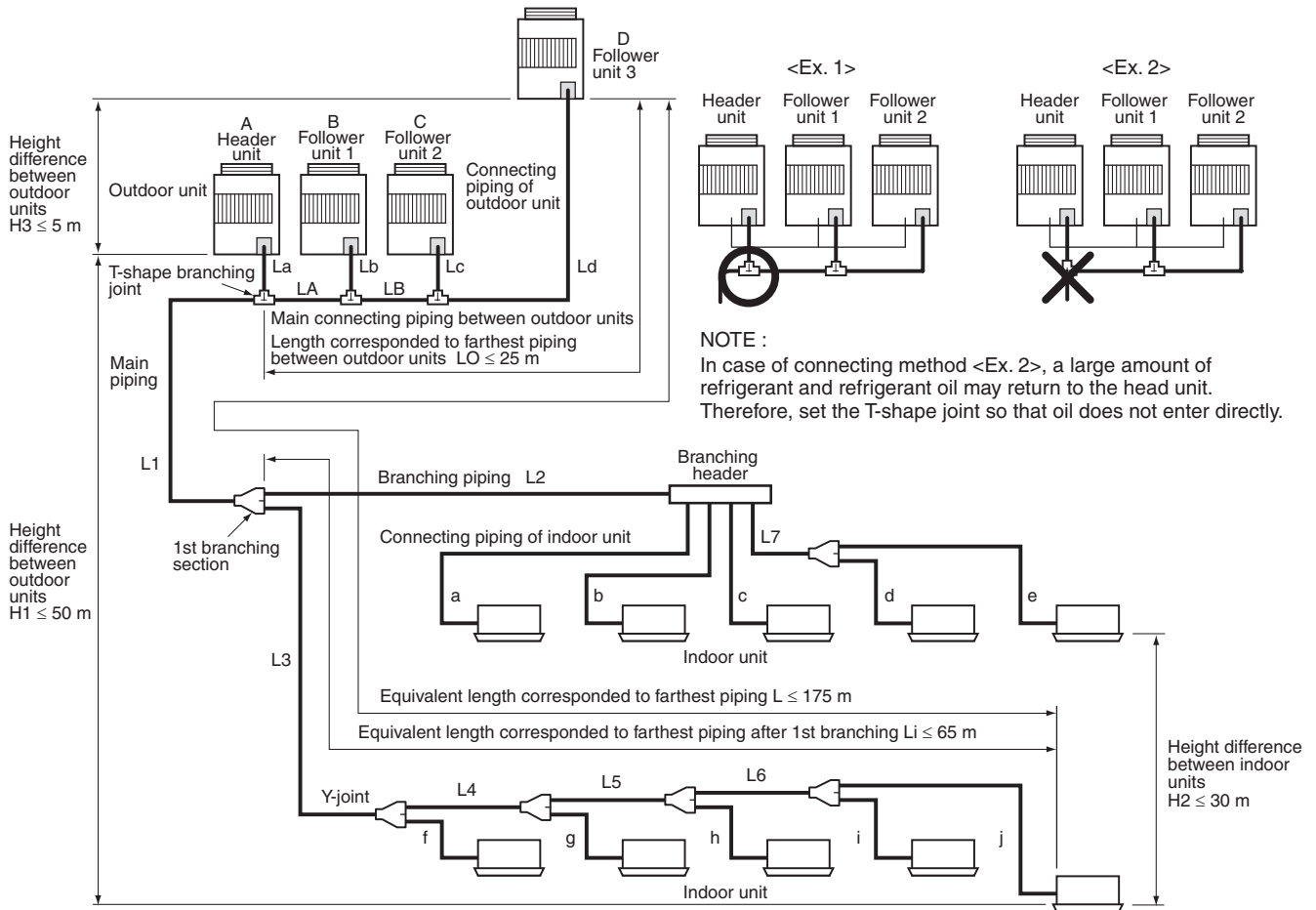
2. Free branching system

- ① Line branching system
- ② Header branching system
- ③ Header branching system after line branching
- ④ Line branching system after header branching
- ⑤ Header branching system after header branching

The above five branching systems are available to dramatically increase the flexibility of refrigerant piping design.



3. Allowable length/height difference of refrigerant piping



• System restrictions

Max. No. of combined outdoor units	4 units
Max. capacity of combined outdoor units	48 HP
Max. No. of connected indoor units	48 units
Max. capacity of combined indoor units	$H2 \leq 15$ 135% $H2 > 15$ 105%

- Note 1** Combination of outdoor units : Header unit (1 unit) + Follower units (0 to 3 units). Header unit is the outdoor unit nearest to the connected indoor units.
- Note 2** Install the outdoor units in order of capacity.
(Header unit $\geq$ Follower unit 1 $\geq$ Follower unit 2 $\geq$ Follower unit 3)
- Note 3** Refer to outdoor unit combination table in page 6.
- Note 4** Piping to indoor units shall be perpendicular to piping to the head outdoor unit as <Ex.1>. Do not connect piping to indoor units in the same direction of Head outdoor unit as <Ex.2>.

• Allowable length and height difference of refrigerant piping

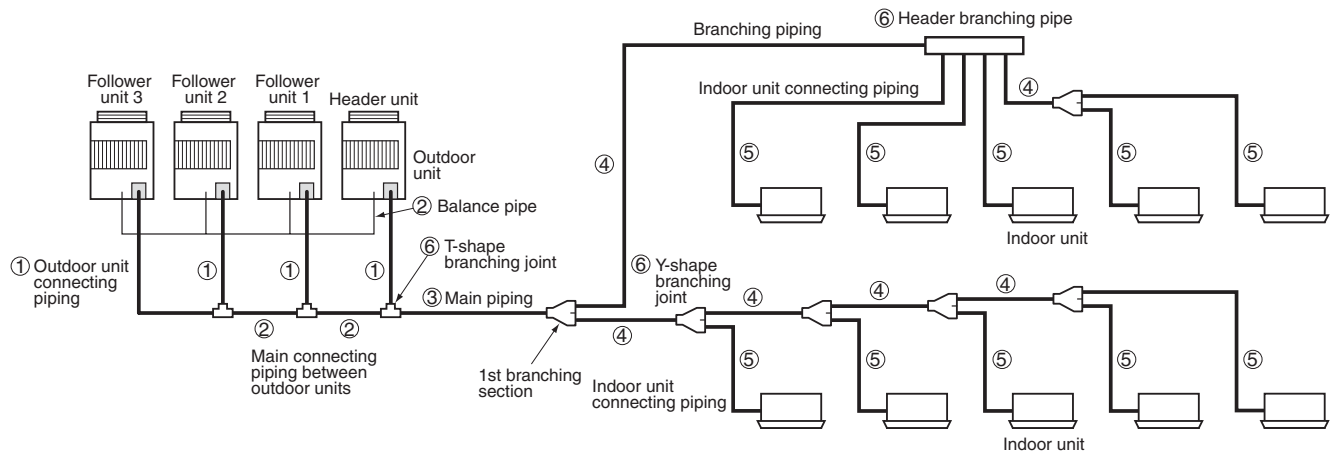
			Allowable value	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)		300 m	$LA + LB + La + Lb + Lc + Ld + L1 + L2 + L3 + L4 + L5 + L6 + L7 + a + b + c + d + e + f + g + h + i + j$
	Farthest piping length L (*)	Real length	150 m	$LA + LB + Ld + L1 + L3 + L4 + L5 + L6 + j$
		Equivalent length	175 m	
	Equivalent length of farthest piping from 1st branching L_i (*)		65 m	$L3 + L4 + L5 + L6 + j$
	Equivalent length of farthest piping between outdoor units L_O (*)		25 m	$LA + LB + Ld, (LA + Lb, LA + LB + Lc)$
	Max. equivalent length of main piping (***)		85 m	$L1$
	Max. equivalent length of outdoor unit connecting piping		10 m	$Ld, (La, Lb, Lc)$
Height difference	Max. real length of indoor unit connecting piping		30 m	$a, b, c, d, e, f, g, h, i, j$
	Height between indoor and outdoor units $H1$	Upper outdoor unit	50 m	—
		Lower outdoor unit	40 m (**)	—
	Height between indoor units $H2$		30 m	—
	Height between outdoor units $H3$		5 m	—

* (D) is outdoor unit farthest from 1st branching, and (j) is indoor unit farthest from 1st branching.

** If the height difference ($H2$) between indoor units exceeds 3m, set below 30m.

*** If the maximum capacity of combination of the outdoor units is 46 HP or more, the maximum equivalent length is restricted up to 70m.

4. Selection of refrigerant piping



① Pipe size of outdoor unit (Table 1)

Model name	MMY-	Gas side	Liquid side
MAP0501T8	MAP0501HT8	MAP0501HT7	Ø15.9
MAP0601T8	MAP0601HT8	MAP0601HT7	Ø19.1
MAP0801T8	MAP0801HT8	MAP0801HT7	Ø22.2
MAP1001T8	MAP1001HT8	MAP1001HT7	Ø22.2
MAP1201T8	MAP1201HT8	MAP1201HT7	Ø28.6

⑤ Piping of indoor unit (Table 5)

Capacity rank	Gas side	Liquid side
007 type to 012 type	Real length 15m or less	Ø 9.5
	Real length exceeds 15m	Ø12.7
015 type to 018 type		Ø12.7
024 type to 056 type		Ø15.9
072 type to 096 type		Ø22.2

② Connecting pipe size between outdoor units (Table 2)

Total capacity code of outdoor units at downstream side	Gas side	Liquid side	Balance pipe
14 to below 22	Ø28.6	Ø15.9	Ø 9.5
22 to below 26	Ø34.9	Ø15.9	
26 to below 36	Ø34.9	Ø19.1	
36 or more	Ø41.3	Ø22.2	

③ Size of main pipe (Table 3)

Total capacity code of all outdoor units *1	Gas side	Liquid side
Below 6	Ø15.9	Ø9.5
6 to below 8	Ø19.1	Ø9.5
8 to below 12	Ø22.2	Ø12.7
12 to below 14	Ø28.6	Ø12.7
14 to below 22	Ø28.6	Ø15.9
22 to below 26	Ø34.9	Ø15.9
26 to below 36	Ø34.9	Ø19.1
36 to below 46	Ø41.3	Ø22.2
46 or more	Ø41.3 *5	Ø22.2

Determine thickness of the main pipe according to capacity of the outdoor units.

⑥ Selection of branching section (Table 6)

	Total capacity code of indoor unit *1	Model name
Y-shape branching joint *2	Below 6.4	RBM-BY53E
	6.4 to below 14.2	RBM-BY103E
	14.2 to below 25.2	RBM-BY203E
	25.2 or more	RBM-BY303E
*3 Branching header	For 4 branching	Below 14.2
		14.2 to below 25.2
	For 8 branching	Below 14.2
		14.2 to below 25.2
T-shape branching joint (For connecting outdoor unit)	1 set of 3 types of T-shape joint pipes as described below: The required quantity is arranged and combined at the site. - Balance pipe (Corresponded difference Ø9.52) × 1 - Piping at liquid side (Corresponded difference Ø9.5 to Ø22.1) × 1 - Piping at gas side (Corresponded difference Ø15.9 to Ø41.3) × 1	
		RBM-BT13E

④ Pipe size between branching sections (Table 4)

Total capacity code of indoor units at downstream side *1	Gas side	Liquid side
2.8 or less	Ø12.7	Ø 9.5
2.8 to below 6.4	Ø15.9	Ø 9.5
6.4 to below 12.2	Ø22.2	Ø12.7
12.2 to below 20.2	Ø28.6	Ø15.9
20.2 to below 25.2	Ø34.9	Ø15.9
25.2 to below 35.2	Ø34.9	Ø19.1
35.2 or more	Ø41.3	Ø22.2

If the total capacity code value of indoor units exceeds that of outdoor units, apply the capacity code of outdoor units.

⑦ Minimum wall thickness for R410A application (Table 7)

Soft	Half hard or hard	OD (Inch)	OD (mm)	Minimum wall thickness (mm)
OK	OK	1/4"	6.35	0.80
OK	OK	3/8"	9.52	0.80
OK	OK	1/2"	12.70	0.80
OK	OK	5/8"	15.88	1.00
NG	OK	3/4"	19.05	1.00
NG	OK	7/8"	22.20	1.00
NG	OK	1.1/8"	28.58	1.00
NG	OK	1.3/8"	34.92	1.10
NG	OK	1.5/8"	41.28	1.25

*1 Code is determined according to the capacity rank. For details, refer to page 6 to page 9.

*2 When using Y-shape branching joint for 1st branching, select according to capacity code of outdoor unit.

*3 For 1 line after header branching, indoor units with a maximum of 6.0 capacity code in total can be connected.

*4 If the pipe size is Ø19.0 or more, use a hard type or half hard type for material of the pipe.

*5 The maximum equivalent length of the main pipe should be 70m or shorter.

5. Charging requirement with additional refrigerant

After the system has been vacuumed, replace the vacuum pump with a refrigerant cylinder and charge the system with additional refrigerant.

Calculating the amount of additional refrigerant required



Refrigerant in the system when shipped from the factory

		5HP	6HP	8HP	10HP	12HP
Refrigerant amount charged in factory	Heat pump model	8.5kg	8.5kg	12.5kg	12.5kg	12.5kg
	Cooling only model	8.0kg	8.0kg	11.0kg	11.0kg	11.0kg

When the system is charged with refrigerant at the factory, the amount of refrigerant needed for the pipes at the site is not included. Calculate the additional amount needed, and add that amount to the system.

(Calculation)

Additional refrigerant charge amount is calculated from size of liquid pipe at site and its real length.

Additional refrigerant charge amount at site =

Real length of liquid pipe × Additional refrigerant charge amount per liquid pipe 1m (Table 1) + Compensation by system HP (Table 2)

Example : Additional charge amount R (kg) = (L1 × 0.025kg/m) + (L2 × 0.055kg/m) + (L3 × 0.105kg/m) + (3.0kg)

L1 : Real total length of liquid pipe Ø6.4 (m)

L2 : Real total length of liquid pipe Ø9.5 (m)

L3 : Real total length of liquid pipe Ø12.7 (m)

Table 7-1

Pipe dia. at liquid side	Ø6.4	Ø9.5	Ø12.7	Ø15.9	Ø19.0	Ø22.2
Additional refrigerant amount/1m	0.025kg	0.055kg	0.105kg	0.160kg	0.250kg	0.350kg

Table 7-2

Combined horse power (HP)	Outdoor combination (HP)				Compensation by system HP (kg)
5	5				0.0
6	6				0.0
8	8				1.5
10	10				2.5
12	12				3.5
14	8	6			0.0
16	8	8			0.0
18	10	8			0.0
20	10	10			3.0
22	12	10			5.0
	8	8	6		0.0
24	12	12			7.0
	8	8	8		-4.0
26	10	8	8		-4.0

Combined horse power (HP)	Outdoor combination (HP)				Compensation by system HP (kg)
28	10	10	8		-2.0
30	10	10	10		0.0
32	12	10	10		1.0
	8	8	8	8	-6.0
34	12	12	10		3.0
	10	8	8	8	-6.0
36	12	12	12		4.0
	10	10	8	8	-6.0
38	10	10	10	8	-6.0
40	10	10	10	10	-5.0
42	12	10	10	10	-4.0
44	12	12	10	10	-2.0
46	12	12	12	10	0.0
48	12	12	12	12	2.0

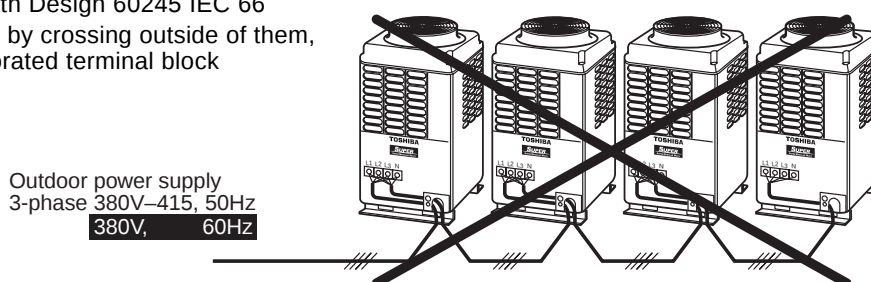
6. WIRING DESIGN

1. General

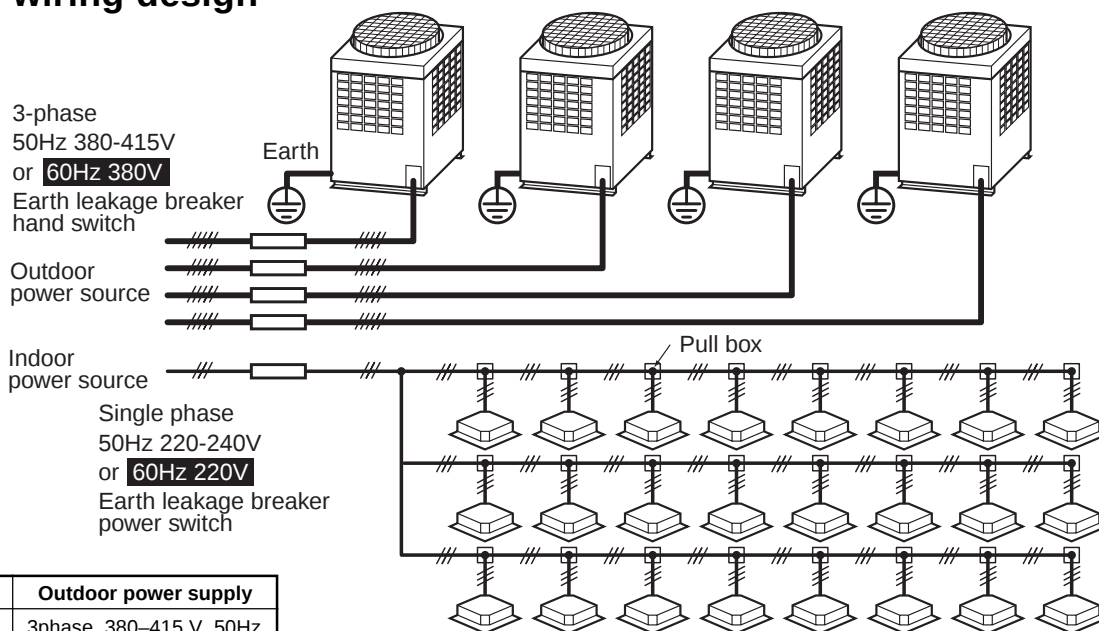
- (1) Perform wiring of the power supply in conformance with the regulations of the local electric company.
- (2) For the control wires connecting indoor units, outdoor units, and between indoor and outdoor units, use of double-core shield wires is recommended to prevent noise trouble.
- (3) Be sure to set the earth leakage breaker and the switches to the power supply section of the indoor unit.
- (4) Supply power to each outdoor unit and provide an earth leakage breaker or hand switch for each outdoor unit.
- (5) Never connect the 220–240V power to the terminal block (U1, U2, U3, U4, U5, U6) for control cables.
(Trouble is caused.)
- (6) Store wiring system for control and refrigerant piping system in the same line.
- (7) Arrange the cables so that the electric wires do not come to contact with high-temperature part of the pipe ; otherwise coating melts and an accident may be caused.
- (8) Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe will finish.

2. For outdoor unit power supply

- Select the power supply cabling and fuse of each outdoor unit from the following specifications:
Cable 5-core, in conformance with Design 60245 IEC 66
- Do not connect the outdoor units by crossing outside of them, but connect them via the incorporated terminal block (L1, L2, L3, N).



3. Electrical wiring design



Model	Outdoor power supply
MMY-AP ••• T8, HT8	3phase, 380–415 V, 50Hz
MMY-AP ••• HT7	3phase, 380 V, 60Hz

- Unit capacities and power supply wire sizes (Reference)

Model MMY-			Power supply wiring	
			Wire size	Field fuse
MAP0501T8	MAP0501HT8	MAP0501HT7	3.5 mm ² (AWG #12) Max. 26 m	20 A
MAP0601T8	MAP0601HT8	MAP0601HT7	3.5 mm ² (AWG #12) Max. 26 m	20 A
MAP0801T8	MAP0801HT8	MAP0801HT7	3.5 mm ² (AWG #10) Max. 20 m	30 A
MAP1001T8	MAP1001HT8	MAP1001HT7	5.5 mm ² (AWG #10) Max. 28 m	30 A
MAP1201T8	MAP1201HT8	MAP1201HT7	5.5 mm ² (AWG #10) Max. 27 m	30 A

- Determine the wire size for indoor unit according to the number of connected indoor units downstream.
- Observe local regulation regarding wire size selection and installation.

4. For Indoor unit power supply (Must be independent from outdoor unit power.)

Model	Item	Power supply wiring		
		Wire size		Field fuse
All models of indoor units		2.0mm ² (AWG#14) Max. 20m	3.5mm ² (AWG#12) Max. 50m	15A

NOTE :

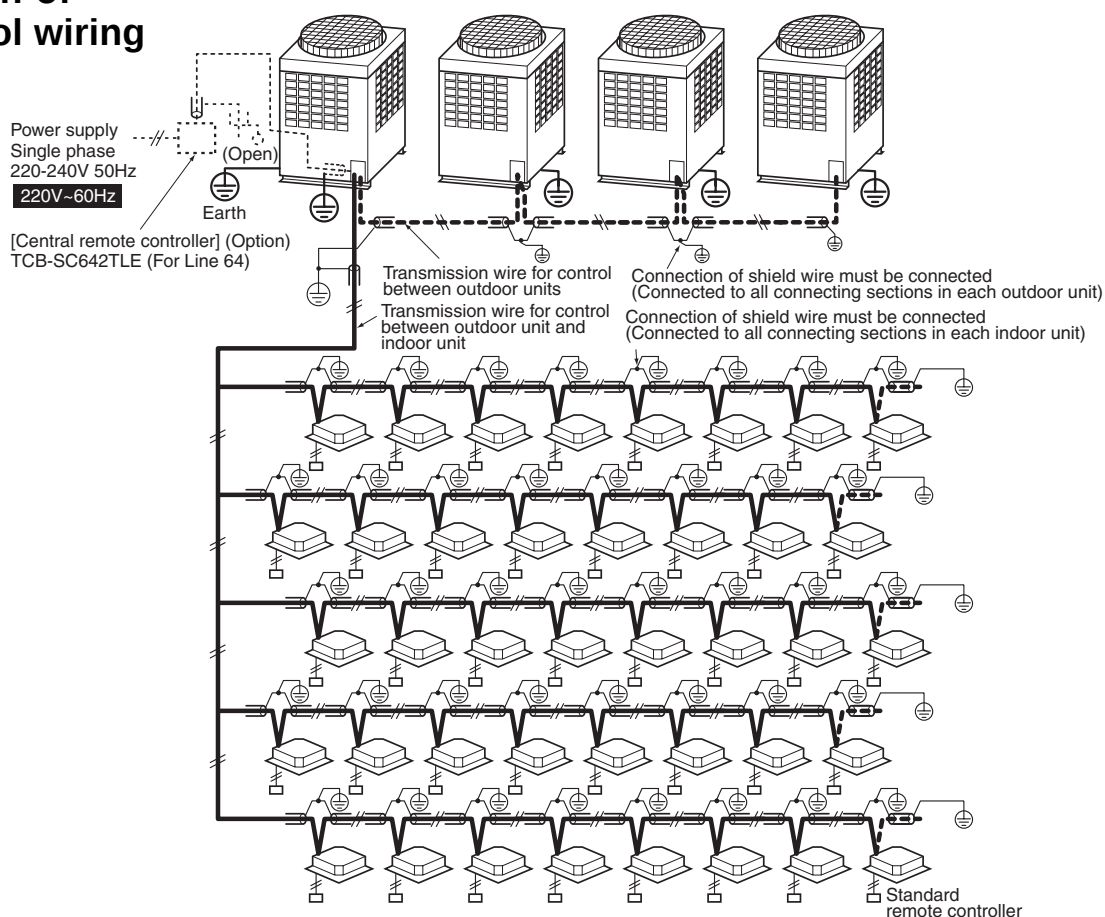
The connecting length indicated in the table represents the length from the pull box to the outdoor unit when the indoor units are connected in parallel for power, as shown in the above illustration. A voltage drop of no more than 2% is also assumed. If the connecting length will exceed the length indicated in the table, select the wire thickness in accordance with local wiring standards.



CAUTIONS

- (1) Keep the refrigerant piping system and the indoor-indoor/indoor-outdoor control wiring systems together.
- (2) When running power wires and control wires parallel to each other, either run them through separate conduits, or maintain a suitable distance between them.
(Current capacity of power wires: 10A or less for 300m, 50A or less for 500m)

5. Design of control wiring



- Wire specification, quantity, size of crossover wiring and remote controller wiring

Name	Q'ty	Size			Specification
		Up to 500m	Up to 1000m	1000 to 2000m	
Crossover wiring (indoor-indoor / indoor-outdoor / outdoor-outdoor control wiring, central control wiring)	2 cores	1.25mm ²		2.0mm ²	Shield wire
Remote controller wiring	2 cores	0.5 to 2.0mm ²	—	—	—

- (1) The crossover wiring and central control wiring use 2-core non-polarity transmission wires. Use 2-core shield wires to prevent noise trouble. In this case, close (connect) the end of shield wires, and perform the functional grounding for the end of the shield wires which are connected to both indoor and outdoor units. For the shield wires which are connected between the central remote controller and the outdoor unit, perform the functional grounding at only one end of central control wiring.
- (2) Use 2-core and non-polarity wire for remote controller. (A, B terminals)
Use 2-core and non-polarity wire for wiring of group control. (A, B terminals)

6. Control wiring Diagram

1. All control wiring is 2-core and non-polarity wire.
2. Be sure to use shield wire for the following wiring to prevent noise trouble.
 - Outdoor-outdoor / indoor-indoor / outdoor-indoor control wiring, Central control wiring.

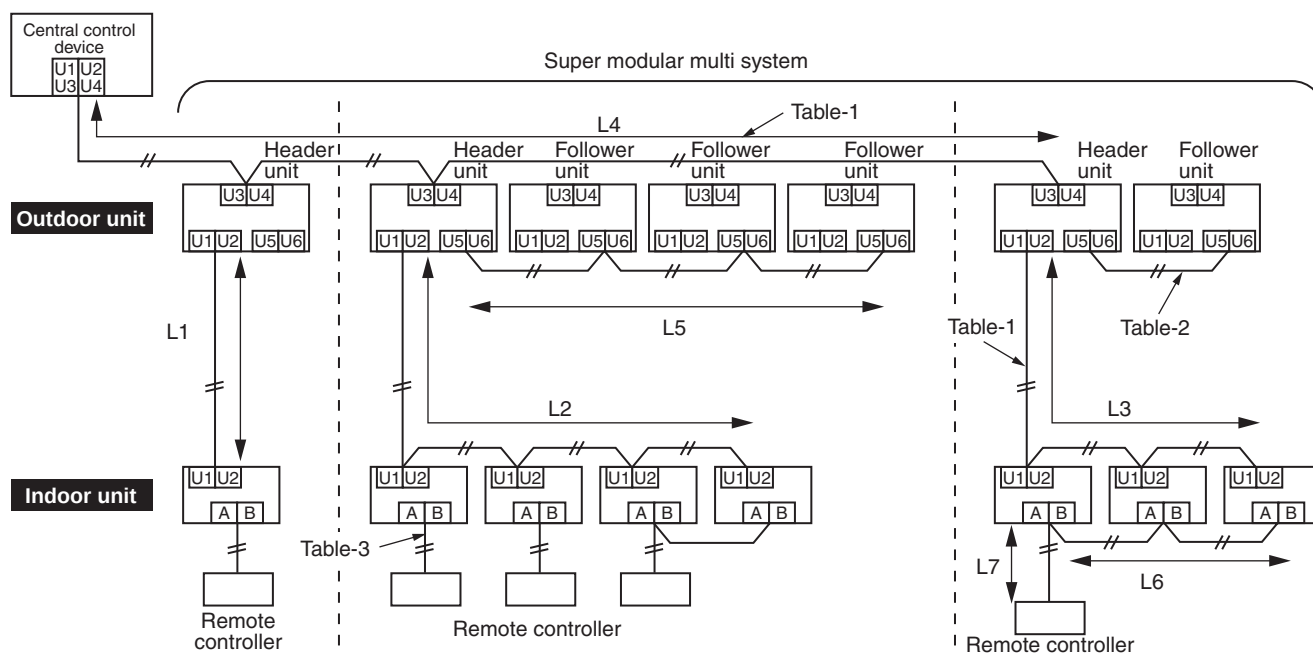


Table-1 Control wiring between indoor and outdoor units (L1, L2, L3), Central control wiring (L4)

Wiring	2-core, non-polarity
Type	Shield wire
Size	1.25 mm ² : Up to 1000 m
Length	2.0 mm ² : Up to 2000 m (*1)

Note (*1) : Total of control wiring length for all refrigerant circuits (L1 + L2 + L3 + L4)

Table-2 Control wiring between outdoor units (L5)

Wiring	2-core, non-polarity
Type	Shield wire
Size	1.25 mm ² to 2.0 mm ²
Length	Up to 100 m (L5)

Table-3 Remote controller wiring (L6, L7)

Wire	2-core
Size	0.5 mm ² to 2.0 mm ²
Length	• Up to 500 m (L6 + L7) • Up 400m in case of wireless remote controller in group control. • Up to 200m total length of control wiring between indoor units (L6)

7. Design

50Hz

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
4-way Air Discharge Cassette Type	MMU-AP0091H	230-1-50	198	264	0.060	0.20	0.25	15
	MMU-AP0121H	230-1-50	198	264	0.060	0.20	0.25	15
	MMU-AP0151H	230-1-50	198	264	0.060	0.22	0.28	15
	MMU-AP0181H	230-1-50	198	264	0.060	0.24	0.30	15
	MMU-AP0241H	230-1-50	198	264	0.060	0.28	0.35	15
	MMU-AP0271H	230-1-50	198	264	0.060	0.28	0.35	15
	MMU-AP0301H	230-1-50	198	264	0.060	0.40	0.50	15
	MMU-AP0361H	230-1-50	198	264	0.090	0.68	0.85	15
	MMU-AP0481H	230-1-50	198	264	0.090	0.93	1.16	15
2-way Air Discharge Cassette Type	MMU-AP0561H	230-1-50	198	264	0.090	0.95	1.19	15
	MMU-AP0071WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP0091WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP0121WH	230-1-50	198	264	0.053	0.36	0.45	15
	MMU-AP0151WH	230-1-50	198	264	0.039	0.37	0.46	15
	MMU-AP0181WH	230-1-50	198	264	0.039	0.37	0.46	15
	MMU-AP0241WH	230-1-50	198	264	0.053	0.53	0.66	15
	MMU-AP0271WH	230-1-50	198	264	0.053	0.53	0.66	15
	MMU-AP0301WH	230-1-50	198	264	0.053	0.54	0.68	15
1-way Air Discharge Cassette Type	MMU-AP0481WH	230-1-50	198	264	0.092	1.33	1.67	15
	MMU-AP0071YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP0091YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP0121YH	230-1-50	198	264	0.022	0.28	0.35	15
	MMU-AP0151SH	230-1-50	198	264	0.034	0.55	0.69	15
	MMU-AP0181SH	230-1-50	198	264	0.034	0.55	0.69	15
	MMU-AP0241SH	230-1-50	198	264	0.034	0.63	0.79	15
	MMU-AP0271SH	230-1-50	198	264	0.034	0.63	0.79	15
	MMU-AP0301SH	230-1-50	198	264	0.034	0.63	0.79	15
Concealed Duct Type	MMD-AP0071BH	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0091BH	230-1-50	198	264	0.120	0.33	0.41	15
	MMD-AP0121BH	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0151BH	230-1-50	198	264	0.120	0.39	0.49	15
	MMD-AP0181BH	230-1-50	198	264	0.120	0.50	0.62	15
	MMD-AP0241BH	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP0271BH	230-1-50	198	264	0.120	0.60	0.75	15
	MMD-AP0301BH	230-1-50	198	264	0.120	0.70	0.88	15
	MMD-AP0361BH	230-1-50	198	264	0.120	0.96	1.20	15
Concealed Duct High Static Pressure Type	MMD-AP0481BH	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP0561BH	230-1-50	198	264	0.120	1.13	1.41	15
	MMD-AP0181H	230-1-50	198	264	0.160	0.93	1.16	15
	MMD-AP0241H	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP0271H	230-1-50	198	264	0.160	1.55	1.94	15
	MMD-AP0361H	230-1-50	198	264	0.260	1.87	2.34	15
	MMD-AP0481H	230-1-50	198	264	0.260	2.12	2.65	15
	MMD-AP0721H	230-1-50	198	264	0.370 × 3	6.04	7.55	15
	MMD-AP0961H	230-1-50	198	264	0.370 × 3	6.35	7.94	15
Under Ceiling Type	MMC-AP0151H	230-1-50	198	264	0.030	0.33	0.41	15
	MMC-AP0181H	230-1-50	198	264	0.030	0.37	0.46	15
	MMC-AP0241H	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0271H	230-1-50	198	264	0.040	0.48	0.60	15
	MMC-AP0361H	230-1-50	198	264	0.080	0.90	1.13	15
	MMC-AP0481H	230-1-50	198	264	0.080	0.96	1.20	15
High Wall Type	MMK-AP0071H	230-1-50	198	264	0.030	0.35	0.44	15
	MMK-AP0091H	230-1-50	198	264	0.030	0.35	0.44	15
	MMK-AP0121H	230-1-50	198	264	0.030	0.35	0.44	15
	MMK-AP0151H	230-1-50	198	264	0.030	0.37	0.46	15
	MMK-AP0181H	230-1-50	198	264	0.030	0.37	0.46	15
	MMK-AP0241H	230-1-50	198	264	0.030	0.40	0.50	15
Floor Standing Cabinet Type	MML-AP0071H	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0091H	230-1-50	198	264	0.045	0.30	0.37	15
	MML-AP0121H	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0151H	230-1-50	198	264	0.045	0.49	0.62	15
	MML-AP0181H	230-1-50	198	264	0.070	0.54	0.68	15
	MML-AP0241H	230-1-50	198	264	0.070	0.54	0.68	15
Floor Standing Concealed Type	MML-AP0071BH	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0091BH	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0121BH	230-1-50	198	264	0.019	0.29	0.36	15
	MML-AP0151BH	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP0181BH	230-1-50	198	264	0.070	0.52	0.65	15
	MML-AP0241BH	230-1-50	198	264	0.070	0.53	0.66	15
Floor Standing Type	MMF-AP0151H	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0181H	230-1-50	198	264	0.037	0.77	0.96	15
	MMF-AP0241H	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0271H	230-1-50	198	264	0.063	1.01	1.27	15
	MMF-AP0361H	230-1-50	198	264	0.110	1.48	1.85	15
	MMF-AP0481H	230-1-50	198	264	0.160	1.84	2.30	15
	MMF-AP0561H	230-1-50	198	264	0.160	1.84	2.30	15

Legend MCA : Minimum Circuit Amps FLA : Full Load Amps
MOCP : Maximum Overcurrent Protection (Amps) kW : Fan Motor Rated Output (kW)

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
4-way Air Discharge Cassette Type	MMU-AP0091H	220-1-60	198	242	0.060	0.21	0.26	15
	MMU-AP0121H	220-1-60	198	242	0.060	0.21	0.26	15
	MMU-AP0151H	220-1-60	198	242	0.060	0.23	0.29	15
	MMU-AP0181H	220-1-60	198	242	0.060	0.25	0.31	15
	MMU-AP0241H	220-1-60	198	242	0.060	0.29	0.37	15
	MMU-AP0271H	220-1-60	198	242	0.060	0.29	0.37	15
	MMU-AP0301H	220-1-60	198	242	0.060	0.42	0.52	15
	MMU-AP0361H	220-1-60	198	242	0.090	0.70	0.88	15
2-way Air Discharge Cassette Type	MMU-AP0481H	220-1-60	198	242	0.090	0.98	1.22	15
	MMU-AP0561H	220-1-60	198	242	0.090	1.00	1.25	15
	MMU-AP0071WH	220-1-60	198	242	0.053	0.38	0.47	15
	MMU-AP0091WH	220-1-60	198	242	0.053	0.38	0.47	15
	MMU-AP0121WH	220-1-60	198	242	0.053	0.38	0.47	15
	MMU-AP0151WH	220-1-60	198	242	0.039	0.44	0.55	15
	MMU-AP0181WH	220-1-60	198	242	0.039	0.44	0.55	15
	MMU-AP0241WH	220-1-60	198	242	0.053	0.61	0.76	15
1-way Air Discharge Cassette Type	MMU-AP0271WH	220-1-60	198	242	0.053	0.61	0.76	15
	MMU-AP0301WH	220-1-60	198	242	0.053	0.67	0.84	15
	MMU-AP0071SH	220-1-60	198	242	0.022	0.30	0.37	15
	MMU-AP0091SH	220-1-60	198	242	0.022	0.30	0.37	15
	MMU-AP0121SH	220-1-60	198	242	0.022	0.30	0.37	15
	MMU-AP0151SH	220-1-60	198	242	0.034	0.62	0.78	15
	MMU-AP0181SH	220-1-60	198	242	0.034	0.62	0.78	15
	MMU-AP0241SH	220-1-60	198	242	0.034	0.70	0.88	15
Concealed Duct Type	MMD-AP0071BH	220-1-60	198	242	0.120	0.35	0.43	15
	MMD-AP0091BH	220-1-60	198	242	0.120	0.35	0.43	15
	MMD-AP0121BH	220-1-60	198	242	0.120	0.41	0.51	15
	MMD-AP0151BH	220-1-60	198	242	0.120	0.41	0.51	15
	MMD-AP0181BH	220-1-60	198	242	0.120	0.52	0.65	15
	MMD-AP0241BH	220-1-60	198	242	0.120	0.63	0.78	15
	MMD-AP0271BH	220-1-60	198	242	0.120	0.63	0.78	15
	MMD-AP0301BH	220-1-60	198	242	0.120	0.73	0.91	15
Concealed Duct High Static Pressure Type	MMD-AP0361BH	220-1-60	198	242	0.120	1.00	1.25	15
	MMD-AP0481BH	220-1-60	198	242	0.120	1.18	1.48	15
	MMD-AP0561BH	220-1-60	198	242	0.120	1.18	1.48	15
	MMD-AP0181H	220-1-60	198	242	0.160	1.06	1.32	15
	MMD-AP0241H	220-1-60	198	242	0.160	2.07	2.59	15
	MMD-AP0271H	220-1-60	198	242	0.160	2.07	2.59	15
	MMD-AP0361H	220-1-60	198	242	0.260	2.38	2.98	15
	MMD-AP0481H	220-1-60	198	242	0.260	2.60	3.25	15
Under Ceiling Type	MMD-AP0721H	220-1-60	198	242	0.370 × 3	8.17	10.2	15
	MMD-AP0961H	220-1-60	198	242	0.370 × 3	8.53	10.7	15
	MMC-AP0151H	220-1-60	198	242	0.030	0.35	0.43	15
	MMC-AP0181H	220-1-60	198	242	0.030	0.39	0.48	15
	MMC-AP0241H	220-1-60	198	242	0.040	0.50	0.63	15
	MMC-AP0271H	220-1-60	198	242	0.040	0.50	0.63	15
	MMC-AP0361H	220-1-60	198	242	0.080	0.94	1.18	15
	MMC-AP0481H	220-1-60	198	242	0.080	1.00	1.25	15
High Wall Type	MMK-AP0071H	220-1-60	198	242	0.030	0.37	0.46	15
	MMK-AP0091H	220-1-60	198	242	0.030	0.37	0.46	15
	MMK-AP0121H	220-1-60	198	242	0.030	0.37	0.46	15
	MMK-AP0151H	220-1-60	198	242	0.030	0.39	0.48	15
	MMK-AP0181H	220-1-60	198	242	0.030	0.39	0.48	15
Floor Standing Cabinet Type	MMK-AP0241H	220-1-60	198	242	0.030	0.40	0.50	15
	MML-AP0071H	220-1-60	198	242	0.045	0.29	0.36	15
	MML-AP0091H	220-1-60	198	242	0.045	0.29	0.36	15
	MML-AP0121H	220-1-60	198	242	0.045	0.51	0.63	15
	MML-AP0151H	220-1-60	198	242	0.045	0.51	0.63	15
Floor Standing Concealed Type	MML-AP0181H	220-1-60	198	242	0.070	0.61	0.76	15
	MML-AP0241H	220-1-60	198	242	0.070	0.61	0.76	15
	MML-AP0071BH	220-1-60	198	242	0.019	0.31	0.39	15
	MML-AP0091BH	220-1-60	198	242	0.019	0.31	0.39	15
	MML-AP0121BH	220-1-60	198	242	0.019	0.31	0.39	15
Floor Standing Type	MML-AP0151BH	220-1-60	198	242	0.070	0.53	0.66	15
	MML-AP0181BH	220-1-60	198	242	0.070	0.53	0.66	15
	MML-AP0241BH	220-1-60	198	242	0.070	0.59	0.73	15
	MMF-AP0151H	220-1-60	198	242	0.037	0.77	0.96	15
	MMF-AP0181H	220-1-60	198	242	0.037	0.77	0.96	15
	MMF-AP0241H	220-1-60	198	242	0.063	1.04	1.29	15
	MMF-AP0271H	220-1-60	198	242	0.063	1.04	1.29	15
	MMF-AP0361H	220-1-60	198	242	0.110	1.58	1.97	15
	MMF-AP0481H	220-1-60	198	242	0.160	2.01	2.52	15
	MMF-AP0561H	220-1-60	198	242	0.160	2.01	2.52	15

Legend

MCA : Minimum Circuit Amps
MOCP : Maximum Overcurrent Protection (Amps)

FLA : Full Load Amps
kW : Fan Motor Rated Output (kW)

■ Single outdoor unit

50Hz

Heat Pump Model MMY-	Cooling Only model MMY-	Nominal Voltage (V-Ph-Hz)	Voltage Range		Compressor				Fan Motor		Power Supply		
			Min	Max	RLA	LRA			kW	FLA	MCA	MOCP	ICF
MAP0501HT8	MAP0501T8	400-3-50	342	457	4.0 + 4.0				0.60	0.8	16.5	20	—
MAP0601HT8	MAP0601T8	400-3-50	342	457	4.6 + 4.6				0.60	0.8	16.5	20	—
MAP0801HT8	MAP0801T8	400-3-50	342	457	5.2 + 5.2				0.60	1.0	20.0	30	—
MAP1001HT8	MAP1001T8	400-3-50	342	457	6.5 + 6.5				0.60	1.1	22.5	30	—
MAP1201HT8	MAP1201T8	400-3-50	342	457	9.5 + 9.5				0.60	1.1	24.5	30	—

■ Combination of outdoor unit

Heat Pump Model MMY-	Cooling Only model MMY-	Nominal Voltage (V-Ph-Hz)	Voltage Range		Compressor								Fan Motor		Power Supply		
			Min	Max	Unit No.1		Unit No.2		Unit No.3		Unit No.4		kW	FLA	MCA	MOCP	ICF
AP1401HT8	AP1401T8	400-3-50	342	457	5.2 + 5.2	—	4.6 + 4.6	—	—	—	—	—	0.6 × 2	1.0 + 0.8	36.5	40	—
AP1601HT8	AP1601T8	400-3-50	342	457	5.2 + 5.2	—	5.2 + 5.2	—	—	—	—	—	0.6 × 2	1.0 + 1.0	40.0	50	—
AP1801HT8	AP1801T8	400-3-50	342	457	6.5 + 6.5	—	5.2 + 5.2	—	—	—	—	—	0.6 × 2	1.0 + 1.1	42.5	50	—
AP2001HT8	AP2001T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 6.5	—	—	—	—	—	0.6 × 2	1.1 + 1.1	45.0	60	—
AP2201HT8	AP2201T8	400-3-50	342	457	5.2 + 5.2	—	5.2 + 5.2	—	4.6 + 4.6	—	—	—	0.6 × 3	1.0 + 1.0 + 0.8	56.5	70	—
AP2211HT8	AP2211T8	400-3-50	342	457	9.5 + 9.5	—	6.5 + 6.5	—	—	—	—	—	0.6 × 2	1.1 + 1.1	47.0	60	—
AP2401HT8	AP2401T8	400-3-50	342	457	5.2 + 5.2	—	5.2 + 5.2	—	5.2 + 5.2	—	—	—	0.6 × 3	1.0 + 1.0 + 1.0	60.0	70	—
AP2411HT8	AP2411T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	—	—	—	—	0.6 × 2	1.1 + 1.1	49.0	60	—
AP2601HT8	AP2601T8	400-3-50	342	457	6.5 + 6.5	—	5.2 + 5.2	—	5.2 + 5.2	—	—	—	0.6 × 3	1.1 + 1.1 + 1.0	62.5	70	—
AP2801HT8	AP2801T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 6.5	—	5.2 + 5.2	—	—	—	0.6 × 3	1.1 + 1.1 + 1.0	65.0	80	—
AP3001HT8	AP3001T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 6.5	—	6.5 + 6.5	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	67.5	80	—
AP3201HT8	AP3201T8	400-3-50	342	457	5.2 + 5.2	—	5.2 + 5.2	—	5.2 + 5.2	—	5.2 + 5.2	—	0.6 × 4	1.0 + 1.0 + 1.0 + 1.0	80.0	90	—
AP3211HT8	AP3211T8	400-3-50	342	457	9.5 + 9.5	—	6.5 + 6.5	—	6.5 + 6.5	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	69.5	80	—
AP3401HT8	AP3401T8	400-3-50	342	457	6.5 + 6.5	—	5.2 + 5.2	—	5.2 + 5.2	—	5.2 + 5.2	—	0.6 × 4	1.1 + 1.0 + 1.0 + 1.0	82.5	100	—
AP3411HT8	AP3411T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	6.5 + 6.5	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	71.5	80	—
AP3601HT8	AP3601T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 6.5	—	5.2 + 5.2	—	5.2 + 5.2	—	0.6 × 4	1.1 + 1.1 + 1.0 + 1.0	85.0	100	—
AP3611HT8	AP3611T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	9.5 + 9.5	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	73.5	90	—
AP3801HT8	AP3801T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 9.5	—	6.5 + 6.5	—	5.2 + 5.2	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.0	87.5	100	—
AP4001HT8	AP4001T8	400-3-50	342	457	6.5 + 6.5	—	6.5 + 6.5	—	6.5 + 6.5	—	6.5 + 6.5	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	90.0	100	—
AP4201HT8	AP4201T8	400-3-50	342	457	9.5 + 9.5	—	6.5 + 6.5	—	6.5 + 6.5	—	6.5 + 6.5	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	92.0	110	—
AP4401HT8	AP4401T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	6.5 + 6.5	—	6.5 + 6.5	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	94.0	110	—
AP4601HT8	AP4601T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	9.5 + 9.5	—	6.5 + 6.5	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	96.0	110	—
AP4801HT8	AP4801T8	400-3-50	342	457	9.5 + 9.5	—	9.5 + 9.5	—	9.5 + 9.5	—	9.5 + 9.5	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	98.0	110	—

Legend

MCA : Minimum Circuit Amps
 MOCP : Maximum Overcurrent Protection (Amps)
 ICF : Maximum Instantaneous Current Flow Start
 RLA : Rated Load Amps

LRA : Locked Rotor Amps
 FLA : Full Load Amps
 kW : Fan Motor Rated Output (kW)

NOTE :

RLA is based on the following conditions.
 Indoor temperature : 27°C DB/19°C WB
 Outdoor temperature : 35°C DB

■ Single outdoor unit

Heat Pump Model MMY-	Nominal Voltage (V-Ph-Hz)	Voltage Range		Compressor			Fan Motor		Power Supply		
		Min	Max	RLA	LRA		kW	FLA	MCA	MOCP	ICF
MAP0501HT7	380-3-60	342	418	4.2 + 4.2			0.60	0.8	16.5	20	—
MAP0601HT7	380-3-60	342	418	4.8 + 4.8			0.60	0.8	16.5	20	—
MAP0801HT7	380-3-60	342	418	5.4 + 5.4			0.60	1.0	20.0	30	—
MAP1001HT7	380-3-60	342	418	6.9 + 6.9			0.60	1.1	22.5	30	—
MAP1201HT7	380-3-60	342	418	10.0 + 10.0			0.60	1.1	24.5	30	—

■ Combination of outdoor unit

Heat Pump Model MMY-	Nominal Voltage (V-Ph-Hz)	Voltage Range		Compressor								Fan Motor		Power Supply		
		Min	Max	Unit No.1		Unit No.2		Unit No.3		Unit No.4		kW	FLA	MCA	MOCP	ICF
AP1401HT7	380-3-60	342	418	5.4 + 5.4	—	4.8 + 4.8	—	—	—	—	—	0.6 × 2	1.0 + 0.8	36.5	40	—
AP1601HT7	380-3-60	342	418	5.4 + 5.2	—	5.4 + 5.4	—	—	—	—	—	0.6 × 2	1.0 + 1.0	40.0	50	—
AP1801HT7	380-3-60	342	418	6.9 + 6.9	—	5.4 + 5.4	—	—	—	—	—	0.6 × 2	1.0 + 1.1	42.5	50	—
AP2001HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 6.9	—	—	—	—	—	0.6 × 2	1.1 + 1.1	45.0	60	—
AP2201HT7	380-3-60	342	418	5.4 + 5.4	—	5.4 + 5.4	—	4.8 + 4.8	—	—	—	0.6 × 3	1.0 + 1.0 + 0.8	56.5	70	—
AP2211HT7	380-3-60	342	418	10.0 + 10.0	—	6.9 + 6.9	—	—	—	—	—	0.6 × 2	1.1 + 1.1	47.0	60	—
AP2401HT7	380-3-60	342	418	5.4 + 5.4	—	5.4 + 5.4	—	5.4 + 5.4	—	—	—	0.6 × 3	1.0 + 1.0 + 1.0	60.0	70	—
AP2411HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	—	—	—	—	0.6 × 2	1.1 + 1.1	49.0	60	—
AP2601HT7	380-3-60	342	418	6.9 + 6.9	—	5.4 + 5.4	—	5.4 + 5.4	—	—	—	0.6 × 3	1.1 + 1.1 + 1.0	62.5	70	—
AP2801HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 6.9	—	5.4 + 5.4	—	—	—	0.6 × 3	1.1 + 1.1 + 1.0	65.0	80	—
AP3001HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 6.9	—	6.9 + 6.9	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	67.5	80	—
AP3201HT7	380-3-60	342	418	5.4 + 5.4	—	5.4 + 5.4	—	5.4 + 5.4	—	5.4 + 5.4	—	0.6 × 4	1.0 + 1.0 + 1.0 + 1.0	80.0	90	—
AP3211HT7	380-3-60	342	418	10.0 + 10.0	—	6.9 + 6.9	—	6.9 + 6.9	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	69.5	80	—
AP3401HT7	380-3-60	342	418	6.9 + 6.9	—	5.4 + 5.4	—	5.4 + 5.4	—	5.4 + 5.4	—	0.6 × 4	1.1 + 1.0 + 1.0 + 1.0	82.5	100	—
AP3411HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	6.9 + 6.9	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	71.5	80	—
AP3601HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 6.9	—	5.4 + 5.4	—	5.4 + 5.4	—	0.6 × 4	1.1 + 1.1 + 1.0 + 1.0	85.0	100	—
AP3611HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	10.0 + 10.0	—	—	—	0.6 × 3	1.1 + 1.1 + 1.1	73.5	90	—
AP3801HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 9.9	—	6.9 + 6.9	—	5.4 + 5.4	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.0	87.5	100	—
AP4001HT7	380-3-60	342	418	6.9 + 6.9	—	6.9 + 6.9	—	6.9 + 6.9	—	6.9 + 6.9	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	90.0	100	—
AP4201HT7	380-3-60	342	418	10.0 + 10.0	—	6.9 + 6.9	—	6.9 + 6.9	—	6.9 + 6.9	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	92.0	110	—
AP4401HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	6.9 + 6.9	—	6.9 + 6.9	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	94.0	110	—
AP4601HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	10.0 + 10.0	—	6.9 + 6.9	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	96.0	110	—
AP4801HT7	380-3-60	342	418	10.0 + 10.0	—	10.0 + 10.0	—	10.0 + 10.0	—	10.0 + 10.0	—	0.6 × 4	1.1 + 1.1 + 1.1 + 1.1	98.0	110	—

Legend

MCA : Minimum Circuit Amps
 MOCP : Maximum Overcurrent Protection (Amps)
 ICF : Maximum Instantaneous Current Flow Start
 RLA : Rated Load Amps

LRA : Locked Rotor Amps
 FLA : Full Load Amps
 kW : Fan Motor Rated Output (kW)

NOTE :

RLA is based on the following conditions.
 Indoor temperature : 27°C DB/19°C WB
 Outdoor temperature : 35°C DB

7. CONTROLS

Enabling a range of controls to meet various system needs

As the size of the building increases so does the number of air-conditioning units required. The multiple air-conditioning system Super MMS ensures energy-saving and comfort by allowing a control of multiple units requiring different loads.

The Super MMS provides a range of functions to enable an integrated, centralized control of multiple units. Design an optimal system that best suits the application and scale of your project.

1. Control via indoor remote controller

1-1. Remote controller

Individual air-conditioning units can be controlled remotely

1-2. Group control

One remote controller can control a maximum of 8 indoor units in group

1-3. Two remote controller

The units can be controlled from two locations using two remote controllers.

1-4. Weekly timer

The units can be run on a weekly schedule using a "remote controller with weekly timer".

2. Control via the central remote controller

2-1. Central control + individual control

Up to 64 units can be controlled using the central remote controller and/or indoor remote controllers.

2-2. Weekly timer controller

The central remote controller can be connected to a weekly timer to set a weekly running schedule.

2-3. Control without indoor remote controller

The units can be operated from the central remote controller only, without the use of indoor remote controllers.

2-4. Control control with 1 by 1 model

Additionally, 1 by 1 model as Digital Inverter or Super Digital Inverter can be joined into the Super MMS central control scheme.

3. Network control

The Super MMS control system can realize flexible centralized network control facility according to customer's various requirements, for both open network building control in combination with other building apparatus like elevator, fire alarm, lighting, etc., and also for stand-alone air conditioning central control.

These central control scheme is mainly established by advanced local server platform.

3-1. Open network control

Super MMS open network facility is applicable for major building management global standards.

3-1-1. LONWORKS

The LONWORKS interface manages the Super MMS air conditioning system as a LON device to command a building computer message and to monitor the operation status.

3-1-2. BACnet

The local server serves air conditioning sub-system in a building control BACnet system.

3-2. Stand-alone central control

Simple stand-alone type exclusive air conditioning central control with less system integration work.

3-2-1. Touch screen controller

Combination of touch screen and local server enables easy operation and comfortable display.

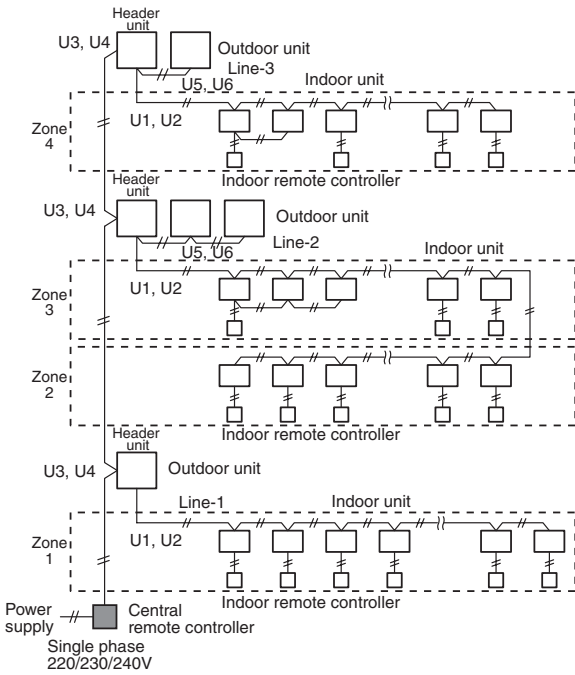
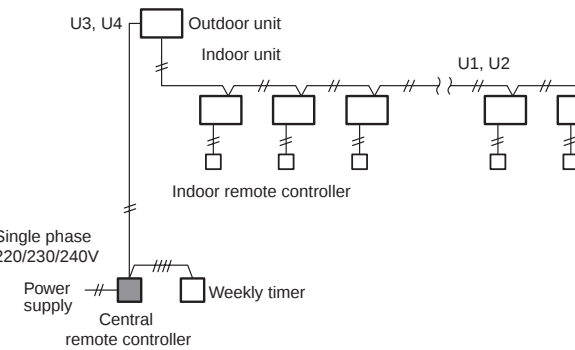
3-2-2. Windows based Plug-in central controller

The local server serves central control function only by Plug-in into a customer's computer.

1. Applications for indoor remote controller

	Basic function	System diagram	Model
1-1	Individual control (Air conditioner is individually operated at a distance.)	Main remote controller Wireless remote controller Possible up to Max. total length 500m	- Wired remote controller RBC-AMT21E - Simple remote controller RBC-AS21E - Wireless remote controller kit TCB-AX21U(W)-E RBC-AX22CE TCB-AX21E
1-2	GROUP control (One remote controller can control group of Max. 8 indoor units. Operating on the same setting)	Max. 8 indoor units Possible up to Max. total length 500m	- Wired remote controller RBC-AMT21E - Simple remote controller RBC-AS21E
1-3	Two remote control (Air conditioner is controlled by two remote controllers at two places.)	Wired system Wireless system Possible up to Max. total length 500m Wired & Wireless combination control (Either controller should be set as side controller)	- Wired remote controller RBC-AMT21E - Simple remote controller RBC-AS21E - Wireless remote controller kit TCB-AX21U(W)-E RBC-AX22CE TCB-AX21E
1-4	Control by weekly timer (Weekly schedule operation)	Weekly timer function Setting of ON-OFF 3 times per day Timer time is displayed. Designation of holiday	- Wired remote controller RBC-AMT21E + - Weekly timer RBC-EXW21E

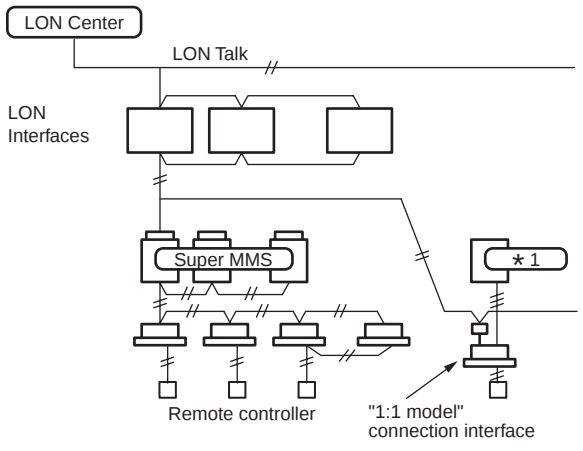
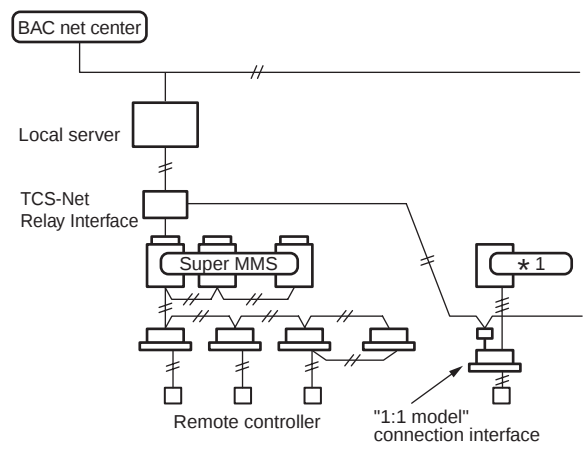
2. Application controls for central remote controller

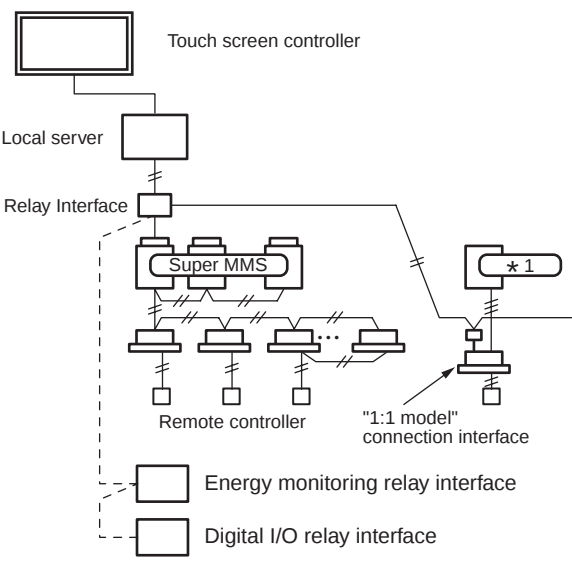
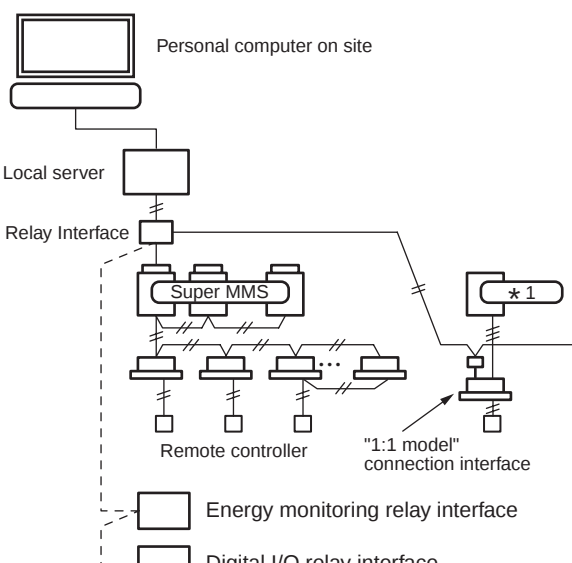
	Basic function	System diagram	Model
2-1	Central management controller for 64 units	 Function of central remote controller • Individual control up to 64 indoor units. • Individual control for max. 64 indoor units divided 1 to 4 zone. (Up to 16 indoor units for each zone.) • Up to 16 outdoor header units are connectable. • 4 type central control setting to inhibit individual operation by remote controller can be selected. • Setting for one of 1 to 4 zone is available. • Usable with other central control devices (Up to 10 central control devices in one control circuit) • Two control mode selectivity Central controller mode/Remote controller mode • Setting of simultaneous ON/OFF 3 times for each day of the week combined with weekly timer.	• Central remote controller TCB-SC642TLE <Indoor remote controller> • Wired remote controller RBC-AMT21E • Simple remote controller RBC-AS21E
2-2	Central remote controller + Weekly timer (Weekly operation schedule can be set by connecting a weekly timer to the central remote controller)		• Central remote controller TCB-SC642TLE • Weekly timer RBC-EXW21E <Indoor remote controller> • Wired remote controller RBC-AMT21E - or • Simple remote controller RBC-AS21E

	Basic function	System diagram	Model
2-3	Remote central control without indoor remote controller	Single phase 220/230/240V (Even when grouping operation is performed by connecting multiple indoor units to 1 line, the indoor remote controller is required.) Example of grouping operation Single phase 220/230/240V Single phase 220/230/240V	- Central remote controller TCB-SC642TLE <Indoor remote controller> - Wired remote controller RBC-AMT21E
2-4	Central management control with "1 : 1 model"	Power supply Central remote controller Header unit Super MMS U1, U2 Indoor unit Indoor remote controller "1:1 model" connection interface * 1	- Central remote controller TCB-SC642TLE "1 : 1 model" connection interface TCB-PCNT30TLE (RAV-SM560KRT-E, SM800KRT-E are not available) <Indoor remote controller> - Wired remote controller RBC-AMT21E - Simple remote controller RBC-AS21E

* TOSHIBA Digital Inverter System and Super Digital Inverter System

3. Application control for network

	Basic function	System diagram	Model
3-1-1	LONWORKS	 *1 TOSHIBA Digital Inverter System and Super Digital Inverter System The LONWORKS interface shall be connected between a building management computer and the Super MMS air conditioning system.	• LON Gateway TCB-IFLN**** • "1 : 1 model" connection interface TCB-PCNT30TLE (RAV-SM560KRT-E, SM800KRT-E are not available) <Indoor remote controller> • Wired remote controller RBC-AMT21E or • Simple remote controller RBC-AS21E
3-1-2	BACnet	 *1 TOSHIBA Digital Inverter System and Super Digital Inverter System The local server shall be connected under the BACnet network, and shall be connected the Super MMS air conditioning system through the interface.	• BACnet local server BMS-LSV***** • TCS-Net Relay Interface BMS-IFLSV1E • "1 : 1 model" connection interface TCB-PCNT30TLE (RAV-SM560KRT-E, SM800KRT-E are not available) <Indoor remote controller> • Wired remote controller RBC-AMT21E • Simple remote controller RBC-AS21E

	Basic function	System diagram	Model
3-2-1	Touch screen controller	 The diagram shows a Touch screen controller connected to a Local server. The Local server is connected to a Relay Interface, which is connected to a Super MMS. The Super MMS is connected to Remote controllers and a "1:1 model" connection interface. The "1:1 model" connection interface is connected to a Toshiba Digital Inverter System (*1). The Relay Interface is also connected to an Energy monitoring relay interface and a Digital I/O relay interface. *1 TOSHIBA Digital Inverter System and Super Digital Inverter System Combination of touch screen and local server.	• Touch screen controller BMS-TP5120ACE • Intelligent server BMS-LSV2E BMS-STC01E • TCS-Net Relay Interface BMS-IFLSV1E • Energy Monitoring Relay Interface BMS-IFWH3E • Digital I/O Relay Interface BMS-IFDD01E • "1 : 1 model" connection interface TCB-PCNT30TLE (RAV-SM560KRT-E, SM800KRT-E are not available) <Indoor remote controller> • Wired remote controller RBC-AMT21E • Simple remote controller RBC-AS21E
3-2-2	Windows based central controller	 The diagram shows a Personal computer on site connected to a Local server. The Local server is connected to a Relay Interface, which is connected to a Super MMS. The Super MMS is connected to Remote controllers and a "1:1 model" connection interface. The "1:1 model" connection interface is connected to a Toshiba Digital Inverter System (*1). The Relay Interface is also connected to an Energy monitoring relay interface and a Digital I/O relay interface. *1 TOSHIBA Digital Inverter System and Super Digital Inverter System The local server shall be "Plug-in" into a customer's personal computer.	• WINDOWS based central controller BMS-LSV** • TCS-Net Relay Interface BMS-IFLSV1E • Intelligent server BMS-LSV2E BMS-STC01E • Energy Monitoring Relay Interface BMS-IFWH3E • Digital I/O Relay Interface BMS-IFDD01E • "1 : 1 model" connection interface TCB-PCNT30TLE (RAV-SM560KRT-E, SM800KRT-E are not available) <Indoor remote controller> • Wired remote controller RBC-AMT21E • Simple remote controller RBC-AS21E

8. ACCESSORIES

Accessories parts for Indoor unit

- Remote controller

Indoor unit type	Accessory parts name	Model	Applicable model
4-way Air Discharge Cassette Type	Wired remote controller	RBC-AMT21E	Common parts for all type model
2-way Air Discharge Cassette Type	Central remote controller	TCB-SC642TLE	
1-way Air Discharge Cassette Type	Weekly timer	RBC-EXW21E	
Concealed Duct Type	Simple remote controller	RBC-AS21E	
Concealed Duct, High Static Pressure Type	Wire-less remote controller kit *1	TCB-AX21U (W)-E	4-way Air Discharge Cassette Type
Under Ceiling Type		RBC-AX22CE	Under Ceiling Type
High Wall Type			
Floor Standing Cabinet Type		TCB-AX21E	Universal Type (except concealed duct high static pressure)
Floor Standing Concealed Type			
Floor Standing Type			

• Panels

Indoor unit type		Accessory parts name	Model	Application model	Remarks
4-way Air Discharge Cassette Type	Required accessory	Ceiling panel	RBC-U21PG(W)-E		
	Optional	Super Long Life Filter	TCB-UF1601UE		
		High Efficiency Filter 65	TCB-UFM1601UE		
		High Efficiency Filter 90	TCB-UFH1601UE		
		Filter Frame	TCB-DF21UKE		Be necessary for first using
		Fresh air and Filter Chamber	TCB-GFC1601UE		
		Fresh air inlet Box	TCB-GB1601UE		Be used with TCB-GFC1601UE
		Auxiliary fresh air Flange	TCB-FF101URE		
		Spacer for height adjustment	TCB-SP1601UE		
		Air discharge direction kit	TCB-SP1601U-KW50E		
2-way Air Discharge Cassette Type	Required accessory	Ceiling panel	RBC-UW136PG	AP0071-0121	
			RBC-UW266PG	AP0151-0301	
			RBC-UW466PG	AP0361-0561	
1-way Air Discharge Cassette Type	Required accessory	Ceiling panel	RBC-US165PG	AP0151-0181	
			RBC-US265PG	AP0241	
			RBC-UY135PG	AP0071-0121	
Concealed Duct Type	Optional	High Efficiency Filter 65	TCB-UFM11BFCE	AP0071-0121/AP0241-0301	AP0241-AP0301 use two piece
			TCB-UFM21BFCE	AP0151-0181/AP0361-0561	AP0361-AP0581 use two piece
			TCB-UFM11BE	AP0071-0121	
			TCB-UFM21BE	AP0151-0181	
			TCB-UFM31BE	AP0241-0301	
			TCB-UFM41BE	AP0361-0561	
		High Efficiency Filter 90	TCB-UFH51BFCE	AP0071-0121/AP0241-0301	AP0241-AP0301 use two piece
			TCB-UFH61BFCE	AP0151-0181/AP0361-0561	AP0361-AP0581 use two piece
			TCB-UFH51BE	AP0071-0121	
			TCB-UFH61BE	AP0151-0181	
			TCB-UFH71BE	AP0241-0301	
			TCB-UFH81BE	AP0361-0561	
		Ceiling panel	RBC-UD281PE(W)	AP0071-0121	
			RBC-UD501PE(W)	AP0151-0181	
			RBC-UD801PE(W)	AP0241-0301	
			RBC-UD1401PE(W)	AP0361-0561	
		Suction Canvas	TCB-CA281BE	AP0071-0121	
			TCB-CA501BE	AP0151-0181	
			TCB-CA801BE	AP0241-0301	
			TCB-CA1401BE	AP0361-0561	
		Filter Chamber	TCB-FC281BPE	AP0071-0121	
			TCB-FC501BPE	AP0151-0181	
			TCB-FC801BPE	AP0241-0301	
			TCB-FC1401BPE	AP0361-0561	
		Filter kit for underside	TCB-FK281BE	AP0071-0121	
			TCB-FK501BE	AP0151-0181	
			TCB-FK801BE	AP0241-0301	
			TCB-FK1401BE	AP0361-0561	
Concealed Duct High Static Pressure Type	Optional	High Efficiency Filter 65	TCB-UFM1D-1E	AP0181-0481	AP0481 use two piece
			TCB-UFM2D-1E	AP0241-0361	Use two piece
			TCB-UFM3DE	AP0721-0961	
		High Efficiency Filter 90	TCB-UFH5D-1E	AP0181-0481	AP0481 use two piece
			TCB-UFH6D-1E	AP0241-0361	Use two piece
			TCB-UFH7DE	AP0721-0961	
		Long Life Pre Filter	TCB-PF1D-1E	AP0181-0481	AP0481 use two piece
			TCB-PF2D-1E	AP0241-0361	Use two piece
			TCB-PF3DE	AP0721-0961	
		Filter Chamber	TCB-FCY21DE	AP0181	
			TCB-FCY31DE	AP0241-0361	
			TCB-FCY51DE	AP0481	
Under Ceiling Type	Optional	Drain pump kit	TCB-FCY100DE	AP0721-0961	
			TCB-DP21DE	AP0181-0481	
			TCB-DP22DE	AP0721-0961	
			TCB-DP22CE	AP0151-0481	* Required accessory when using Drain Pump Kit
			TCB-KP12CE	AP0151-0181	
			TCB-KP22CE	AP0241-0481	

Note 1 : Concerning the Wire-less Remote Controller Kit and other optional equipments out of the table, consult your dealer about availabilities.

***1 :** For handling the Wireless Remote Controller Kit, consult your dealer about availability.

9. TECHNICAL SPECIFICATIONS

Indoor unit (50Hz specifications)



50Hz

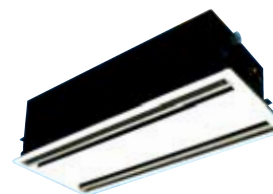
• 4-way Air Discharge Cassette Type

Model name			MMU-	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H	AP0271H	AP0301H	AP0361H	AP0481H	AP0561H
Cooling/Heating capacity (Note 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 supply			1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)									
	Running current (A)			0.17		0.19	0.21	0.24		0.35	0.59	0.81	0.83
	Power consumption (kW)			0.020		0.022	0.026	0.032		0.048	0.070	0.110	0.112
	Starting current (A)			0.30		0.33	0.36	0.42		0.59	0.87	1.23	1.26
Appearance	Main unit			Heat-insulating material attached Zinc hot dipping steel plate									
	Ceiling Panel	Model		RBC-U21PG (W)-E									
		Panel color		Moon white (Munsell/2.5GY 9.0/0.5)									
Outer dimension	Main unit	Height (mm)	256								319		
		Width (mm)	840										
		Depth (mm)	840										
	Ceiling panel	Height (mm)	35										
		Width (mm)	950										
		Depth (mm)	950										
Total weight	Main unit (kg)		20		22		23			28			
	Ceiling panel (kg)		4.5										
Heat exchanger				Finned tube									
Soundproof/Heat-insulating material				Non-flammable insulation									
Fan unit	Fan			Turbo fan									
	Standard air flow High (Mid./Low) (m³/h)		800 (730/680)		930 (830/790)	1,050 (920/800)	1,200 (920/820)		1,320 (1,110/850)	1,680 (1300/1,070)	2,040 (1,430/1,130)	2,090 (1,520/1,230)	
	Motor (W)			60							90		
Air filter				Standard filter attached (Long life filter)									
Controller				Remote controller									
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 level(Note 2) High (Mid./Low) (dB(A))			30/29/27		31/29/27	32/29/28	34/31/28		37/33/30	40/36/33	44/38/34	45/40/34	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

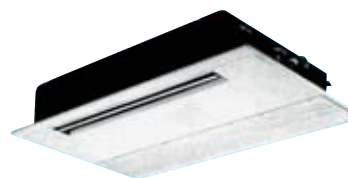
• 2-way Air Discharge Cassette Type

Model name			MMU-	AP0071WH	AP0091WH	AP0121WH	AP0151WH	AP0181WH	AP0241WH	AP0271WH	AP0301WH	AP0481WH China only
Cooling/Heating capacity			(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	14.0/16.0
Electrical characteristics	Power supply			1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)								1 phase 50Hz 220V
	Running current (A)			0.31			0.32		0.46		0.47	1.16
	Power consumption (kW)			0.070			0.072		0.105		0.106	0.250
	Power factor (%)			97					99		98	98
	Starting current (A)			0.47			0.60		0.89		0.98	1.33
Appearance	Main unit			Heat-insulating material attached Zinc hot dipping steel plate								
	Ceiling panel	Model		RBC-UW136PG			RBC-UW266PG				RBC-UW466PG	
		Panel color		Light ivory (Munsell 10Y 9/0.5)								
Outer dimension	Main unit	Height (mm)		398								406
		Width (mm)		830			1,350				1,650	
		Depth (mm)		550								620
	Ceiling panel	Height (mm)		8								
		Width (mm)		1,000			1,520				1,898	
		Depth (mm)		650								680
Total weight	Main unit (kg)			33			44		48			52
	Ceiling panel (kg)			8			11				18	
Heat exchanger				Finned tube								
Soundproof/Heat-insulating material				Non-flammable insulation								
Fan unit	Fan			Centrifugal fan								
	Standard air flow (High/Mid./Low) (m³/h)			570/510/450			780/700/600		1140/960/720		1260/1140/960	1920/1500/1050
	Motor (W)			53			39		53			92
Air filter				Standard filter attached (Long life filter)								
Controller				Remote controller								
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 level (Note 2) (High/Mid./Low) (dB(A))				34/32/30			35/33/30		38/35/33		40/37/34	45/42/39

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

• 1-way Air Discharge Cassette Type

Model name			MMU-	AP0071YH	AP0091YH	AP0121YH	AP0151SH	AP0181SH	AP0241SH
Cooling/Heating capacity (Note 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 (Note 2)	Power supply			1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)					
	Running current (A)			0.24			0.48		0.55
	Power consumption (kW)			0.053			0.103		0.115
	Power factor (%)			95			93		91
	Starting current (A)			0.6			0.8		1.1
Appearance	Main unit			Heat-insulating material attached Zinc hot dipping steel plate					
	Ceiling panel	Model		RBC-UY135PG			RBC-US165PG		RBC-US265PG
		Panel color		W : Silky shade (1Y8.5/0.5)					
Outer dimension	Main unit	Height (mm)	235			198			
		Width (mm)	850			1,000		1,200	
		Depth (mm)	400			655			
	Ceiling panel	Height (mm)	18			10			
		Width (mm)	1,050			1,220		1,420	
		Depth (mm)	470			755			
Total weight	Main unit (kg)		22			27		31	
	Ceiling panel (kg)		3.5			8		9	
Heat exchanger				Finned tube					
Soundproof/Heat-insulating material				Non-flammable insulation					
Fan unit	Fan			Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)			540/480/420			780/720/660		1,200/1,140/1,020
	Motor (W)			22			34		
Controller				Remote controller					
Room thermostat				Attached					
Air filter				Standard filter attached (Long life filter)					
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 level (Note 2) (High/Mid./Low) (dB(A))				42/39/34			42/39/35		43/41/37

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

• Concealed Duct Type

Model name			MMD-	AP0071BH	AP0091BH	AP0121BH	AP0151BH	AP0181BH	AP0241BH	AP0271BH	AP0301BH	AP0361BH	AP0481BH	AP0561BH				
Cooling/Heating capacity (Note 1)			(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0				
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)															
	Running current (A)		0.29		0.34		0.43		0.52		0.61		0.83		0.98			
	Power consumption (kW)		0.033		0.039		0.050		0.060		0.071		0.107		0.128			
	Starting current (A)		0.5		0.59		0.75		0.90		1.05		1.44		1.70			
Appearance	Main unit		Zinc hot dipping steel plate															
Outer dimension	Main unit	Height (mm)	320															
		Width (mm)	550			700			1,000			1,350						
		Depth (mm)	800															
	Suction ceiling panel	Height (mm)	9															
		Width (mm)	630			780			1,080			1,430						
		Depth (mm)	500															
Total weight	Main unit (kg)		28			32			43			55						
	Ceiling panel (kg)		3.5			4			6			7						
Heat exchanger				Finned tube														
Soundproof/Heat-insulating material				Non-flammable insulation														
Fan unit	Fan		Centrifugal fan															
	Standard air flow High (Mid./Low) (m³/h)		480 (420/340)		570 (490/400)		650 (540/480)		780 (660/540)		1,140 (990/870)		1,260 (1080/870)		1,620 (1410/1200)		1,980 (1710/1490)	
	Motor (W)		120															
	External static pressure (factory setting) (Pa)		50 (4 mmAq)															
	External static pressure (Pa)		110 (10 mmAq)															
Air filter				Standard filter attached (Long life filter)														
Controller				Remote controller														
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 level (Note 2) (High/Mid./Low) (dB(A))			30/28/26			31/29/27			32/30/28		33/31/29		34/32/29		36/34/32		38/36/32	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



50Hz

• **Concealed Duct High Static Pressure Type**

Model name		MMD-	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H	AP0721H	AP0961H	
Cooling/Heating capacity (Note 1)		(kW)	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	22.4/25.0	28.0/31.5	
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)							
	Running current		(A)	0.81	1.35	1.63	1.84	5.25	5.52	
	Power consumption		(kW)	0.184	0.299	0.368	0.414	1.200	1.260	
	Power factor		(%)	99	96	98	98	99	99	
	Starting current		(A)	1.3	3.5	4.1	4.8	13.6	14.8	
Appearance			Zinc hot dipping steel plate							
Outer dimension	Height x Width x Depth		(mm)	380 x 850 x 660			380x1,200x660	470 x 1,380 x 1,250		
Total weight			(kg)	50	52	56	67	150		
Heat exchanger			Finned tube							
Soundproof/Heat-insulating material			Non-flammable insulation							
Fan unit	Fan		Centrifugal fan							
	Standard air flow		(m³/h)	900	1,320	1,600	2,100	3,600	4,200	
	Motor		(W)	160		260		370 x 3		
	External static pressure (Factory setting)		(Pa)	137						
	External static pressure		(Pa)	68.6-137-196						
	Air flow limit Lower limit/Upper limit		(m³/h)	720/1,080	1,060/1,580	1,280/1,920	1,680/2,520	2,880/4,320	3,360/5,040	
Air filter			Option or field supply							
Controller			Remote controller							
Connecting pipe	Gas side		(mm)	Ø12.7	Ø15.9			Ø22.2		
	Liquid side		(mm)	Ø6.4	Ø9.5			Ø12.7		
	Drain port		(Nominal dia.)	25 (One side of male screw)						
Sound level (Note 2) (High/Mid./Low)			(dB(A))	37	40			49	50	

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

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



50Hz

• **Under Ceiling Type**

Model name		MMC-	AP0151H	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H
Cooling/Heating capacity (Note 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
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)					
	Running current (A)		0.29	0.32	0.42		0.78	0.84
	Power consumption (kW)		0.033	0.038	0.050		0.091	0.110
	Starting current (A)		0.43	0.48	0.62		1.17	1.25
Appearance			White (Munsell 10Y 9.3/0.4)					
Outer dimension	Height x Width x Depth (mm)		210 x 910 x 680		210 x 1,180 x 680		210 x 1,595 x 680	
Total weight (kg)			22		26		34	
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		720/600/540	780/660/540	1,110/900/840		1,650/1,380/1,200	1,800/1,560/1,320
	Motor (W)		30		40		80	
Controller			Remote controller					
Room thermostat			Attached					
Air filter			Standard filter attached (Long life filter)					
Connecting pipe	Gas side (mm)		Ø12.7		Ø15.9			
	Liquid side (mm)		Ø6.4		Ø9.5			
	Drain port (Nominal dia.)		20 (Polyvinyl chloride tube)					
Sound level (Note 2) (High/Mid./Low) (dB(A))			35/32/30	36/33/30	38/36/33		41/38/35	43/40/37

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

• High Wall Type

Model name		MMK-	AP0071H	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H
Cooling/Heating capacity (Note 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 supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)					
	Running current (A)		0.30			0.32		0.35
	Power consumption (kW)		0.035			0.037		0.040
	Starting current (A)		0.36			0.42		0.47
Appearance	Suction grille and side panel		Silky mist (Munsell 1Y 8.9/0.5)					
	Discharge grille		City gray (Munsell N6.5)					
	Bottom surface		Silky mist (Munsell 1Y 8.9/0.5)					
Outer dimension	Height x Width x Depth (mm)		368 x 895 x 210			368 x 1,055 x 210		368 x 1,430 x 210
Total weight		(kg)	18			19		25
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Cross-flow fan					
	Standard air flow (High/Mid./Low) (m³/h)		600/540/480			780/660/600		1,200/1,020/900
	Motor outlet (W)		30					
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
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 level (Note 2) (High/Mid./Low)		(dB(A))	39/34/31			42/38/35		42/38/35

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

• Floor Standing Cabinet Type

Model name		MML-	AP0071H	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H
Cooling/Heating capacity (Note 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 supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)					
	Running current (A)		0.26		0.43		0.47	
	Power consumption (kW)		0.056		0.092		0.102	
	Power factor (%)		94		93		94	
	Starting current (A)		0.60		0.80		1.10	
Appearance			Silky shade (1Y8.5/0.5)					
Outer dimension	Height x Width x Depth (mm)		630 x 950 x 230					
Total weight (kg)			37				40	40
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		480/420/360		900/780/650		1,080/930/780	
	Motor outlet (W)		45				70	
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
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 level (Note 2) (High/Mid./Low) (dB(A))			39/37/35		45/41/38		49/44/39	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



50Hz

• Floor Standing Concealed Type

Model name		MML-	AP0071BH	AP0091BH	AP0121BH	AP0151BH	AP0181BH	AP0241BH
Cooling/Heating capacity (Note 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 supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)					
	Running current (A)		0.25			0.45		0.46
	Power consumption (kW)		0.056			0.090		0.095
	Power factor (%)		97			87		90
	Starting current (A)		0.60			0.80		1.00
Appearance			Zinc hot dipping steel plate					
Outer dimension	Height x Width x Depth (mm)		600 x 745 x 220			600 x 1,045 x 220		
Total weight		(kg)	21			29		
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		460/400/300			740/600/490		950/790/640
	Motor (W)		19			70		
	Static pressure range (kPa)		0					
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
Connecting pipe	Gas side (mm)		Ø9.5			Ø12.7		Ø15.9
	Liquid side (mm)		Ø6.4					Ø9.5
	Drain port (Nominal dia.)		20 (One side of male screw)					
Sound level (Note 2) (High/Mid./Low) (dB(A))			36/34/32					42/37/33

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



50Hz

• Floor Standing Type

Model name		MMF-	AP0151H	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H	AP0561H
Cooling/Heating capacity (Note 1)		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220 – 240V) (Power exclusive for indoor is required.)						
	Running current (A)		0.67		0.88		1.29	1.60	
	Power consumption (kW)		0.150		0.190		0.280	0.350	
	Power factor (%)		97		94			95	
	Starting current (A)		0.90		1.10		1.70	2.10	
Appearance			W : Silky shade (1Y 8.5/0.5)						
Outer dimension	Height x Width x Depth (mm)		1750 × 600 × 210				1750 × 600 × 390		
Total weight		(kg)	48		49		65		
Heat exchanger			Finned tube						
Soundproof/Heat-insulating material			Non-flammable insulation						
Fan unit	Fan		Centrifugal fan						
	Standard air flow (High/Mid./Low) (m³/h)		900/780/660		1,200/1,020/840		1,920/1,680/1,380	2,160/1,860/1,560	
	Motor (W)		37		63		110	160	
Air filter			Standard filter attached (Simple filter)						
Controller			Remote controller						
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 level (Note 2) (High/Mid./Low) (dB(A))			46/43/38		49/45/40		51/48/44	54/50/46	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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

60Hz



Indoor unit (60Hz specifications)

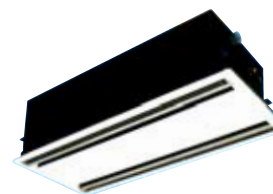
• 4-way Air Discharge Cassette Type

Model name			MMU-	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H	AP0271H	AP0301H	AP0361H	AP0481H	AP0561H
Cooling/Heating capacity (Note 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 supply			1 phase 60Hz 220V (Power exclusive for indoor is required.)									
	Running current (A)			0.18		0.20	0.22	0.26		0.37	0.61	0.85	0.87
	Power consumption (kW)			0.020		0.022	0.026	0.032		0.048	0.070	0.110	0.112
	Starting current (A)			0.30		0.33	0.36	0.42		0.59	0.87	1.23	1.26
Appearance	Main unit			Heat-insulating material attached Zinc hot dipping steel plate									
	Ceiling Panel	Model		RBC-U21PG (W) E									
		Panel color		Moon white (Munsell/2.5GY 9.0/0.5)									
Outer dimension	Main unit	Height (mm)	256								319		
		Width (mm)	840										
		Depth (mm)	840										
	Ceiling panel	Height (mm)	35										
		Width (mm)	950										
		Depth (mm)	950										
Total weight	Main unit (kg)		20		22		23			28			
	Ceiling panel (kg)		4.5										
Heat exchanger				Finned tube									
Soundproof/Heat-insulating material				Non-flammable insulation									
Fan unit	Fan			Turbo fan									
	Standard air flow High (Mid./Low) (m³/h)			800 (730/680)		930 (830/790)	1,050 (920/800)	1,200 (920/820)		1,320 (1110/850)	1,680 (1,300/1,070)	2,040 (1,430/1,130)	2,090 (1,520/1,230)
	Motor (W)			60							90		
Air filter				Standard filter attached (Long life filter)									
Controller				Remote controller									
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 level(Note 2) High (Mid./Low) (dB(A))			30/29/27		31/29/27	32/29/28	34/31/28		37/33/30	40/36/33	44/38/34	45/40/34	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

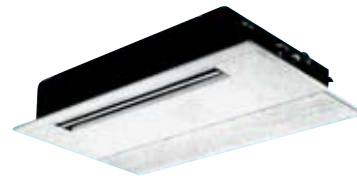
• 2-way Air Discharge Cassette Type

Model name		MMU-	AP0071WH	AP0091WH	AP0121WH	AP0151WH	AP0181WH	AP0241WH	AP0271WH	AP0301WH	
Cooling/Heating capacity			(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0
Electrical characteristics	Power supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)								
	Running current		(A)	0.33			0.38		0.53		0.58
	Power consumption		(kW)	0.070			0.076		0.115		0.123
	Power factor		(%)	97			90		99		96
	Starting current		(A)	0.46			0.59		0.87		0.96
Appearance	Main unit		Heat-insulating material attached Zinc hot dipping steel plate								
	Ceiling panel	Model	RBC-UW136PG			RBC-UW266PG					
		Panel color	Light ivory (Munsell 10Y 9/0.5)								
Outer dimension	Main unit	Height	(mm)	398							
		Width	(mm)	830			1,350				
		Depth	(mm)	550							
	Ceiling panel	Height	(mm)	8							
		Width	(mm)	1,000			1,520				
		Depth	(mm)	650							
Total weight	Main unit		(kg)	33			44		48		
	Ceiling panel		(kg)	8			11				
Heat exchanger			Finned tube								
Soundproof/Heat-insulating material			Non-flammable insulation								
Fan unit	Fan		Centrifugal fan								
	Standard air flow (m³/h) (High/Mid./Low)		570/510/450			780/700/600		1140/960/720		1260/1140/960	
	Motor		(W)	53			39		53		
Air filter			Standard filter attached (Long life filter)								
Controller			Remote controller								
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 level (Note 2) (High/Mid./Low)			(dB(A))	34/32/30			35/33/30		38/35/33		40/37/34

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• 1-way Air Discharge Cassette Type

Model name			MMU-	AP0071YH	AP0091YH	AP0121YH	AP0151SH	AP0181SH	AP0241SH
Cooling/Heating capacity (Note 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 (Note 2)	Power supply			1 phase 60Hz 220V (Power exclusive for indoor is required.)					
	Running current (A)			0.26			0.54		0.61
	Power consumption (kW)			0.056			0.115		0.130
	Power factor (%)			98			97		97
	Starting current (A)			0.60			0.80		1.10
Appearance	Main unit			Heat-insulating material attached Zinc hot dipping steel plate					
	Ceiling panel	Model			RBC-UY135PG		RBC-US165PG		RBC-US265PG
		Panel color			W : Silky shade (1Y8.5/0.5)				
Outer dimension	Main unit	Height (mm)	235			198			
		Width (mm)	850			1,000		1,200	
		Depth (mm)	400			655			
	Ceiling panel	Height (mm)	18			10			
		Width (mm)	1,050			1,220		1,420	
		Depth (mm)	470			755			
Total weight	Main unit (kg)		22			27		31	
	Ceiling panel (kg)		3.5			8		9	
Heat exchanger				Finned tube					
Soundproof/Heat-insulating material				Non-flammable insulation					
Fan unit	Fan			Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)			540/480/420			780/720/660		1,200/1,140/1,020
	Motor (W)			22			34		
Controller				Remote controller					
Room thermostat				Attached					
Air filter				Standard filter attached (Long life filter)					
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 level (Note 2) (High/Mid./Low) (dB(A))				42/39/34			42/39/35		43/41/37

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• Concealed Duct Type

Model name		MMD-	AP0071BH	AP0091BH	AP0121BH	AP0151BH	AP0181BH	AP0241BH	AP0271BH	AP0301BH	AP0361BH	AP0481BH	AP0561BH
Cooling/Heating capacity (Note 1)		(kW)	2.2/2.5	2.8/3.2	3.6/4.0	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	9.0/10.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)										
	Running current (A)		0.30		0.35		0.45	0.55		0.64	0.87	1.03	
	Power consumption (kW)		0.033		0.039		0.050	0.060		0.071	0.107	0.128	
	Starting current (A)		0.5		0.59		0.75	0.90		1.05	1.44	1.70	
Appearance	Main unit		Zinc hot dipping steel plate										
Outer dimension	Main unit	Height (mm)	320										
		Width (mm)	550			700		1,000			1,350		
		Depth (mm)	800										
	Suction ceiling panel	Height (mm)	9										
		Width (mm)	630			780		1,080			1,430		
		Depth (mm)	500										
Total weight	Main unit (kg)		28			32		43			55		
	Ceiling panel (kg)		3.5			4		6			7		
Heat exchanger			Finned tube										
Soundproof/Heat-insulating material			Non-flammable insulation										
Fan unit	Fan		Centrifugal fan										
	Standard air flow High (Mid./Low) (m³/h)		480 (420/340)		570 (490/400)	650 (540/480)	780 (660/540)	1,140 (990/870)		1,260 (1080/870)	1,620 (1410/1200)	1,980 (1710/1490)	
	Motor (W)		120										
	External static pressure (factory setting) (Pa)		50 (4 mmAq)										
	External static pressure (Pa)		110 (10 mmAq)										
Air filter			Standard filter attached (Long life filter)										
Controller			Remote controller										
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 level (Note 2) (High/Mid./Low) (dB(A))			30/28/26		31/29/27		32/30/28	33/31/29		34/32/29	36/34/32	38/36/32	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• **Concealed Duct High Static Pressure Type**

Model name		MMD-	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H	AP0721H	AP0961H	
Cooling/Heating capacity (Note 1)		(kW)	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	22.4/25.0	28.0/31.5	
Electrical characteristics	Power supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)							
	Running current		(A)	0.92	1.80	2.07	2.26	7.10	7.42	
	Power consumption		(kW)	0.198	0.385	0.450	0.490	1.540	1.610	
	Power factor		(%)	98	97	99				
	Starting current		(A)	1.30	3.40	3.90	4.35	13.00	13.60	
Appearance			Zinc hot dipping steel plate							
Outer dimension	Height x Width x Depth		(mm)	380 x 850 x 660			380x1,200x660	470 x 1,380 x 1,250		
Total weight			(kg)	50	52	56	67	150		
Heat exchanger			Finned tube							
Soundproof/Heat-insulating material			Non-flammable insulation							
Fan unit	Fan		Centrifugal fan							
	Standard air flow		(m³/h)	900	1,320	1,600	2,100	3,600	4,200	
	Motor		(W)	160		260		370 x 3		
	External static pressure (Factory setting)		(Pa)	137						
	External static pressure		(Pa)	68.6-137-196						
	Air flow limit Lower limit/Upper limit		(m³/h)	720/1,080	1,060/1,580	1,280/1,920	1,680/2,520	2,880/4,320	3,360/5,040	
Air filter			Option or field supply							
Controller			Remote controller							
Connecting pipe	Gas side		(mm)	Ø12.7	Ø15.9			Ø22.2		
	Liquid side		(mm)	Ø6.4	Ø9.5			Ø12.7		
	Drain port		(Nominal dia.)	25 (One side of male screw)						
Sound level (Note 2) (High/Mid./Low)			(dB(A))	37	40			49	50	

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

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• Under Ceiling Type

Model name		MMC-	AP0151H	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H
Cooling/Heating capacity (Note 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
Electrical characteristics	Power supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)					
	Running current (A)		0.30	0.34	0.44		0.82	0.87
	Power consumption (kW)		0.033	0.038	0.050		0.091	0.110
	Starting current (A)		0.43	0.48	0.62		1.17	1.25
Appearance			White (Munsell 10Y 9.3/0.4)					
Outer dimension	Height x Width x Depth (mm)		210 x 910 x 680		210 x 1,180 x 680		210 x 1,595 x 680	
Total weight (kg)			22		26		34	
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		720/600/540	780/660/540	1,110/900/840		1,650/1,380/1,200	1,800/1,560/1,320
	Motor (W)		30		40		80	
Controller			Remote controller					
Room thermostat			Attached					
Air filter			Standard filter attached (Long life filter)					
Connecting pipe	Gas side (mm)		Ø12.7		Ø15.9			
	Liquid side (mm)		Ø6.4		Ø9.5			
	Drain port (Nominal dia.)		20 (Polyvinyl chloride tube)					
Sound level (Note 2) (High/Mid./Low) (dB(A))			35/32/30	36/33/30	38/36/33		41/38/35	43/40/37

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• High Wall Type

Model name		MMK-	AP0071H	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H
Cooling/Heating capacity (Note 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 supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)					
	Running current (A)		0.32			0.34		0.35
	Power consumption (kW)		0.035			0.037		0.040
	Starting current (A)		0.46			0.48		0.60
Appearance	Suction grille and side panel		Silky mist (Munsell 1Y 8.9/0.5)					
	Discharge grille		City gray (Munsell N6.5)					
	Bottom surface		Silky mist (Munsell 1Y 8.9/0.5)					
Outer dimension	Height x Width x Depth (mm)		368 x 895 x 210			368 x 1,055 x 210		368 x 1,430 x 210
Total weight		(kg)	18			19		25
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Cross-flow fan					
	Standard air flow (High/Mid./Low) (m³/h)		600/540/480			780/660/600		1,200/1,020/900
	Motor outlet (W)		30					
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
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 level (Note 2) (High/Mid./Low)		(dB(A))	39/34/31			42/38/35		

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


60Hz

• Floor Standing Cabinet Type

Model name		MML-	AP0071H	AP0091H	AP0121H	AP0151H	AP0181H	AP0241H
Cooling/Heating capacity (Note 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 supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)					
	Running current (A)		0.25		0.44		0.53	
	Power consumption (kW)		0.053		0.092		0.113	
	Power factor (%)		96		95		97	
	Starting current (A)		0.60		0.80		1.10	
Appearance			Silky shade (1Y8.5/0.5)					
Outer dimension	Height x Width x Depth (mm)		630 x 950 x 230					
Total weight (kg)			37				40	
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		480/420/360		900/780/650		1,080/930/780	
	Motor outlet (W)		45				70	
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
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 level (Note 2) (High/Mid./Low) (dB(A))			39/37/35		45/41/38		49/44/39	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



60Hz

• Floor Standing Concealed Type

Model name		MML-	AP0071BH	AP0091BH	AP0121BH	AP0151BH	AP0181BH	AP0241BH
Cooling/Heating capacity (Note 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 supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)					
	Running current (A)		0.27			0.46		0.51
	Power consumption (kW)		0.058			0.096		0.110
	Power factor (%)		98			95		98
	Starting current (A)		0.60			0.80		1.00
Appearance			Zinc hot dipping steel plate					
Outer dimension	Height x Width x Depth (mm)		600 x 745 x 220			600 x 1,045 x 220		
Total weight (kg)			21			29		
Heat exchanger			Finned tube					
Soundproof/Heat-insulating material			Non-flammable insulation					
Fan unit	Fan		Centrifugal fan					
	Standard air flow (High/Mid./Low) (m³/h)		460/400/300			740/600/490		950/790/640
	Motor (W)		19			70		
	Static pressure range (kPa)		0					
Air filter			Standard filter attached (Simple filter)					
Controller			Remote controller					
Connecting pipe	Gas side (mm)		Ø9.5			Ø12.7		Ø15.9
	Liquid side (mm)		Ø6.4					Ø9.5
	Drain port (Nominal dia.)		20 (One side of male screw)					
Sound level (Note 2) (High/Mid./Low) (dB(A))			36/34/32					42/37/33

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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



60Hz

• Floor Standing Type

Model name		MMF-	AP0151H	AP0181H	AP0241H	AP0271H	AP0361H	AP0481H	AP0561H
Cooling/Heating capacity (Note 1)		(kW)	4.5/5.0	5.6/6.3	7.1/8.0	8.0/9.0	11.2/12.5	14.0/16.0	16.0/18.0
Electrical characteristics	Power supply		1 phase 60Hz 220V (Power exclusive for indoor is required.)						
	Running current (A)		0.67		0.90		1.37	1.75	
	Power consumption (kW)		0.146		0.195		0.295	0.380	
	Power factor (%)		99		98			99	
	Starting current (A)		0.90		1.10		1.80	2.30	
Appearance			W : Silky Shade (1Y 8.5/0.5)						
Outer dimension	Height x Width x Depth (mm)		1750 × 600 × 210				1750 × 600 × 390		
Total weight (kg)			48		49		65		
Heat exchanger			Finned tube						
Soundproof/Heat-insulating material			Non-flammable insulation						
Fan unit	Fan		Centrifugal fan						
	Standard air flow (High/Mid./Low) (m³/h)		900/780/660		1,200/1,020/840		1,920/1,680/1,380	2,160/1,860/1,560	
	Motor (W)		37		63		110	160	
Air filter			Standard filter attached (Simple filter)						
Controller			Remote controller						
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 level (Note 2) (High/Mid./Low) (dB(A))			46/43/38		49/45/40		51/48/44	54/50/46	

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 5 m of main piping and 2.5 m of branch piping connected with 0 meter height.

Note 2 : The sound level are measured in an anechoic chamber in accordance with JIS B8616. 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


50Hz

Outdoor unit (50Hz)

Equivalent HP			Equivalent to 5HP	Equivalent to 6HP	Equivalent to 8HP	Equivalent to 10HP	Equivalent to 12HP	
Model name	Cooling Only	MMY-	MAP0501T8	MAP0601T8	MAP0801T8	MAP1001T8	MAP1201T8	
	Heat Pump	MMY-	MAP0501HT8	MAP0601HT8	MAP0801HT8	MAP1001HT8	MAP1201HT8	
Outdoor unit type			Inverter unit					
Cooling capacity (★ 1)			(kW)	14.0	16.0	22.4	28.0	33.5
Standard heating capacity (★ 1)			(kW)	16.0	18.0	25.0	31.5	37.5
Power supply (★ 2)			3 phase 50Hz 400V (380 – 415V)					
Electrical characteristics (★ 1)	Cooling	Running current	(A)	5.85	7.28	8.62	11.55	18.30
		Power consumption	(kW)	3.65	4.64	5.67	7.68	11.92
		Power factor	(%)	90	92	95	96	94
		EER (Energy Efficiency Ratio)	(kW/kW)	3.84	3.45	3.95	3.65	2.81
		Starting current	(A)	1.0	1.0	1.0	1.0	1.0
	Heating	Running current	(A)	6.09	7.08	8.93	11.98	15.65
		Power consumption	(kW)	3.84	4.56	5.88	7.97	10.19
		Power factor	(%)	91	93	95	96	94
		EER (Energy Efficiency Ratio)	(kW/kW)	4.17	3.95	4.25	3.95	3.68
		Starting current	(A)	1.0	1.0	1.0	1.0	1.0
External dimension			(mm)	Height 1,800 x Width 990 x Depth 750				
Total weight		Cooling Only	(kg)	227		256		
		Heat Pump	(kg)	228		258		
Color			Silky shade (Munsell 1Y8.5/0.5)					
Compressor	Type		Hermetic type					
	Motor output		(kW)	1.1 × 2	1.4 × 2	2.3 × 2	3.1 × 2	4.2 × 2
Fan unit	Fan		Propeller fan					
	Motor output		(kW)	0.60				
	Air volume		(m³/h)	9,000		9,900	10,500	
Heat exchanger			Finned tube					
Refrigerant R410A (Charged refrigerant amount) (★ 3)		Cooling Only	(kg)	8.0		11		
		Heat Pump	(kg)	8.5		12.5		
High-pressure switch			(MPa)	OFF : 2.90 ON : 3.73				
Protective devices			(★ 5)					
Refrigerant piping specifications (★ 4)	Connecting port dia	Gas side	(mm)	Ø15.9	Ø19.1	Ø22.2		Ø28.6
		Liquid side	(mm)	Ø9.5		Ø12.7		
		Balance pipe	(mm)	Ø9.5				
	Connecting method	Gas side		Flare	Brazing			
		Liquid side		Flare				
		Balance pipe		Flare				
	Max. equivalent length		(m)	175				
	Max. real length		(m)	150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length)		(m)	300				
	Max. height difference		(m)	Outdoor unit is higher than indoor unit : 50				
Outdoor unit is lower than indoor unit : 40 (★ 6)								
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m					
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m and (Shield wire) 2.0mm² x 2 cores up to 2000m					
Max. No. of connected indoor units			8	10	13	16	20	
Sound level			(dB(A))	55	56	57	58	59

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

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

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

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

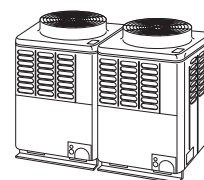
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Outdoor unit (Combination) (50Hz)

Equivalent HP			Equivalent to 14HP		Equivalent to 16HP		Equivalent to 18HP		Equivalent to 20HP			
Set Model name		Cooling Only	MMY-	AP1401T8		AP1601T8		AP1801T8		AP2001T8		
		Heat Pump	MMY-	AP1401HT8		AP1601HT8		AP1801HT8		AP2001HT8		
Outdoor unit type			Inverter									
Outdoor unit model		Cooling Only	MMY-	MAP0801T8	MAP0601T8	MAP0801T8	MAP0801T8	MAP1001T8	MAP0801T8	MAP1001T8	MAP1001T8	
		Heat Pump	MMY-	MAP0801HT8	MAP0601HT8	MAP0801HT8	MAP0801HT8	MAP1001HT8	MAP0801HT8	MAP1001HT8	MAP1001HT8	
Rated cooling capacity (* 1)			(kW)	38.4		45		50.4		56.0		
Standard heating capacity (* 1)			(kW)	43.0		50.0		56.5		63.0		
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)									
Electrical characteristics (* 1)	Cooling	Running current	(A)	17.08		18.54		21.29		24.31		
		Power consumption	(kW)	11.12		12.20		14.16		16.17		
		Power factor	(%)	94		95		96		96		
		EER (kW/kW) (Energy Efficiency Ratio)		3.45		3.69		3.56		3.46		
		Starting current	(A)	1.0		1.0		1.0		1.0		
	Heating	Running current	(A)	16.83		18.65		21.61		24.75		
		Power consumption	(kW)	10.96		12.28		14.37		16.46		
		Power factor	(%)	94		95		96		96		
		EER (kW/kW) (Energy Efficiency Ratio)		3.92		4.07		3.93		3.83		
		Starting current	(A)	1.0		1.0		1.0		1.0		
External dimension (mm)			Height 1,800 x Width 990 x Depth 750									
Total weight		Cooling Only	(kg)	256	227	256						
		Heat Pump	(kg)	258	228	258						
Color			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type	Hermetic type										
	Motor output	(kW)	2.3 × 2	1.4 × 2	2.3 × 2		3.1 × 2	2.3 × 2	3.1 × 2			
Fan unit	Fan	Propeller fan										
	Motor output	(kW)	0.6									
	Air volume	(m³/h)	9,900	9,000	9,900		10,500	9,900	10,500			
Heat exchanger			Finned tube									
Refrigerant R410A Charged amount (* 3)		Cooling Only	(kg)	11.0	8.0	11.0						
		Heat Pump	(kg)	12.5	8.5	12.5						
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73									
Protective devices			(* 5)									
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side	(mm)	Ø22.2	Ø19.1	Ø22.2						
		Liquid side	(mm)	Ø12.7	Ø9.5	Ø12.7						
		Balance side	(mm)	Ø9.5								
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivalent length		(m)	175								
	Max. real length		(m)	150 (However, if equivalent bend length is longer, equivalent length is the standard.)								
	Max. total pipe length (Real length)		(m)	300								
	Max. height difference		(m)	Outdoor unit is higher than indoor unit : 50								
Outdoor unit is lower than indoor unit : 40 (* 6)												
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m									
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m and (Shield wire) 2.0mm² x 2 cores up to 2000m									
Max. No. of connected indoor units			23		27		30		33			
Sound level (dB(A))			59.5		60		60.5		61			

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

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

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

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

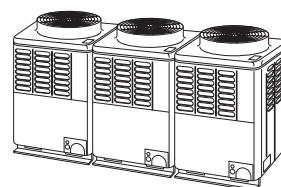
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 22HP				
Set Model name	Cooling Only	MMY-	AP2201T8			AP2211T8	
	Heat Pump	MMY-	AP2201HT8			AP2211HT8	
Outdoor unit type			Inverter				
Outdoor unit model	Cooling Only	MMY-	MAP0801T8	MAP0801T8	MAP0601T8	MAP1201T8	MAP1001T8
	Heat Pump	MMY-	MAP0801HT8	MAP0801HT8	MAP0601HT8	MAP1201HT8	MAP1001HT8
Rated cooling capacity (* 1)		(kW)	61.5				
Standard heating capacity (* 1)		(kW)	69.0				
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)				
Electrical characteristics (* 1)	Cooling	Running current (A)	26.42			31.01	
		Power consumption (kW)	17.39			20.41	
		Power factor (%)	95				
		EER (kW/kW) (Energy Efficiency Ratio)	3.54			3.01	
		Starting current (A)	1.0			1.0	
	Heating	Running current (A)	26.36			28.38	
		Power consumption (kW)	17.35			18.68	
		Power factor (%)	95				
		EER (kW/kW) (Energy Efficiency Ratio)	3.98			3.69	
		Starting current (A)	1.0			1.0	
External dimension (mm)		Height 1,800 x Width 990 x Depth 750					
Total weight	Cooling Only (kg)	256		227	256		
	Heat Pump (kg)	258		228	258		
Color			Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type	Hermetic type					
	Motor output (kW)	2.3 × 2		1.4 × 2	4.2 × 2	3.1 × 2	
Fan unit	Fan	Propeller fan					
	Motor output (kW)	0.6					
	Air volume (m³/h)	9,900		9,000	10,500		
Heat exchanger			Finned tube				
Refrigerant R410A Charged amount (* 3)	Cooling Only (kg)	11.0		8.0	11.0		
	Heat Pump (kg)	12.5		8.5	12.5		
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73					
Protective devices			(* 5)				
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2		Ø19.1	Ø28.6	Ø22.2
		Liquid side (mm)	Ø12.7		Ø9.5	Ø12.7	
		Balance side (mm)	Ø9.5				
	Connecting method	Gas side	Brazing				
		Liquid side	Flare				
		Balance side	Flare				
	Max. equivalent length (m)		175				
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length) (m)		300				
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50				
			Outdoor unit is lower than indoor unit : 40 (* 6)				
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m				
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m				
Max. No. of connected indoor units			37				
Sound level (dB(A))		61.5					

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

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

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

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

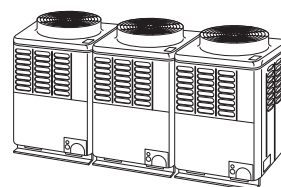
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 24HP				
Set Model name	Cooling Only	MMY-	AP2401T8			AP2411T8	
	Heat Pump	MMY-	AP2401HT8			AP2411HT8	
Outdoor unit type			Inverter				
Outdoor unit model	Cooling Only	MMY-	MAP0801T8	MAP0801T8	MAP0801T8	MAP1201T8	MAP1201T8
	Heat Pump	MMY-	MAP0801HT8	MAP0801HT8	MAP0801HT8	MAP1201HT8	MAP1201HT8
Rated cooling capacity (* 1)		(kW)	68.0				
Standard heating capacity (* 1)		(kW)	76.5				
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)				
Electrical characteristics (* 1)	Cooling	Running current (A)	27.73			38.02	
		Power consumption (kW)	18.44			25.02	
		Power factor (%)	96			95	
		EER (kW/kW) (Energy Efficiency Ratio)	3.69			2.72	
		Starting current (A)	1.0			1.0	
	Heating	Running current (A)	27.96			32.06	
		Power consumption (kW)	18.79			21.32	
		Power factor (%)	97			96	
		EER (kW/kW) (Energy Efficiency Ratio)	4.07			3.59	
		Starting current (A)	1.0			1.0	
External dimension (mm)		Height 1,800 x Width 990 x Depth 750					
Total weight	Cooling Only (kg)	256					
	Heat Pump (kg)	258					
Color		Silky shade (Munsell 1Y8.5/0.5)					
Compressor	Type	Hermetic type					
	Motor output (kW)	2.3 × 2			4.2 × 2		
Fan unit	Fan	Propeller fan					
	Motor output (kW)	0.6					
	Air volume (m³/h)	9,900			10,500		
Heat exchanger		Finned tube					
Refrigerant R410A Charged amount (* 3)	Cooling Only (kg)	11.0					
	Heat Pump (kg)	12.5					
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73					
Protective devices		(* 5)					
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2			Ø28.6	
		Liquid side (mm)	Ø12.7				
		Balance side (mm)	Ø9.5				
	Connecting method	Gas side	Brazing				
		Liquid side	Flare				
		Balance side	Flare				
	Max. equivalent length (m)		175				
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length) (m)		300				
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50				
Outdoor unit is lower than indoor unit : 40 (* 6)							
Control wiring		Shield wire 1.25mm² x 2 cores. up to 2000m					
Central remote controller		When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m					
Max. No. of connected indoor units		40					
Sound level (dB(A))		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

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

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

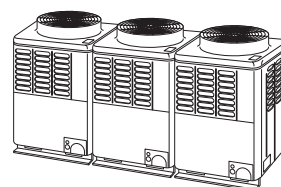
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 26HP			Equivalent to 28HP			Equivalent to 30HP		
Set Model name	Cooling Only	MMY-	AP2601T8			AP2801T8			AP3001T8		
	Heat Pump	MMY-	AP2601HT8			AP2801HT8			AP3001HT8		
Outdoor unit type			Inverter								
Outdoor unit model	Cooling Only	MMY-	MAP1001T8	MAP0801T8	MAP0801T8	MAP1001T8	MAP1001T8	MAP0801T8	MAP1001T8	MAP1001T8	MAP1001T8
	Heat Pump	MMY-	MAP1001HT8	MAP0801HT8	MAP0801HT8	MAP1001HT8	MAP1001HT8	MAP0801HT8	MAP1001HT8	MAP1001HT8	MAP1001HT8
Rated cooling capacity (* 1)		(kW)	73			78.5			84.0		
Standard heating capacity (* 1)		(kW)	81.5			88.0			95.0		
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)								
Electrical characteristics (* 1)	Cooling	Running current (A)	30.51			33.48			36.48		
		Power consumption (kW)	20.29			22.27			24.26		
		Power factor (%)	96								
		EER (kW/kW) (Energy Efficiency Ratio)	3.60			3.52			3.46		
		Starting current (A)	1.0			1.0			1.0		
	Heating	Running current (A)	31.16			33.98			36.93		
		Power consumption (kW)	20.51			22.60			24.82		
		Power factor (%)	95			96			97		
		EER (kW/kW) (Energy Efficiency Ratio)	3.97			3.89			3.83		
		Starting current (A)	1.0			1.0			1.0		
External dimension (mm)		Height 1,800 x Width 990 x Depth 750									
Total weight	Cooling Only (kg)	256									
	Heat Pump (kg)	258									
Color			Silky shade (Munsell 1Y8.5/0.5)								
Compressor	Type	Hermetic type									
	Motor output (kW)	2.3 × 2			3.1 × 2		2.3 × 2		3.1 × 2		
Fan unit	Fan	Propeller fan									
	Motor output (kW)	0.6									
	Air volume (m³/h)	10,500	9,900		10,500		9,900		10,500		
Heat exchanger			Finned tube								
Refrigerant R410A Charged amount (* 3)	Cooling Only (kg)	11.0									
	Heat Pump (kg)	12.5									
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73									
Protective devices			(* 5)								
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2								
		Liquid side (mm)	Ø12.7								
		Balance side (mm)	Ø9.5								
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivalent length (m)		175								
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)								
	Max. total pipe length (Real length) (m)		300								
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50								
			Outdoor unit is lower than indoor unit : 40 (* 6)								
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m								
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m								
Max. No. of connected indoor units			43			47			48		
Sound level (dB(A))			62			62.5			63		

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

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

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

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

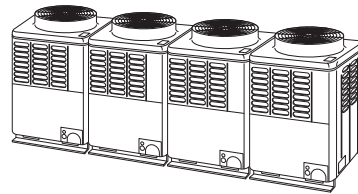
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 32HP							
Set Model name	Cooling Only	MMY-	AP3201T8				AP3211T8			
	Heat Pump	MMY-	AP3201HT8				AP3211HT8			
Outdoor unit type			Inverter							
Outdoor unit model	Cooling Only	MMY-	MAP0801T8	MAP0801T8	MAP0801T8	MAP0801T8	MAP1201T8	MAP1001T8	MAP1001T8	
	Heat Pump	MMY-	MAP0801HT8	MAP0801HT8	MAP0801HT8	MAP0801HT8	MAP1201HT8	MAP1001HT8	MAP1001HT8	
Rated cooling capacity (* 1)		(kW)	90.0							
Standard heating capacity (* 1)		(kW)	100.0							
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)							
Electrical characteristics (* 1)	Cooling	Running current (A)	37.09				43.08			
		Power consumption (kW)	24.41				28.65			
		Power factor (%)	95				96			
		EER (kW/kW) (Energy Efficiency Ratio)	3.69				3.14			
		Starting current (A)	1.0				1.0			
	Heating	Running current (A)	37.32				40.69			
		Power consumption (kW)	24.56				26.78			
		Power factor (%)	95				95			
		EER (kW/kW) (Energy Efficiency Ratio)	4.07				3.73			
		Starting current (A)	1.0				1.0			
External dimension (mm)		Height 1,800 x Width 990 x Depth 750								
Total weight	Cooling Only (kg)	256								
	Heat Pump (kg)	258								
Color			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type								
	Motor output (kW)	2.3 × 2				4.2 × 2		3.1 × 2		
Fan unit	Fan	Propeller fan								
	Motor output (kW)	0.6								
	Air volume (m³/h)	9,900				10,500				
Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (* 3)	Cooling Only (kg)	11.0								
	Heat Pump (kg)	12.5								
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73								
Protective devices			(* 5)							
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2				Ø28.6		Ø22.2	
		Liquid side (mm)	Ø12.7							
		Balance side (mm)	Ø9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length (m)		175							
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length) (m)		300							
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50							
			Outdoor unit is lower than indoor unit : 40 (* 6)							
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units			48							
Sound level (dB(A))		63								

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

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

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

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

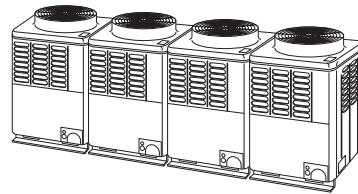
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 34HP						
Set Model name	Cooling Only	MMY-	AP3401T8				AP3411T8		
	Heat Pump	MMY-	AP3401HT8				AP3411HT8		
Outdoor unit type			Inverter						
Outdoor unit model	Cooling Only	MMY-	MAP1001T8	MAP0801T8	MAP0801T8	MAP0801T8	MAP1201T8	MAP1201T8	MAP1001T8
	Heat Pump	MMY-	MAP1001HT8	MAP0801HT8	MAP0801HT8	MAP0801HT8	MAP1201HT8	MAP1201HT8	MAP1001HT8
Rated cooling capacity (* 1)		(kW)	96.0						
Standard heating capacity (* 1)		(kW)	108.0						
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)						
Electrical characteristics (* 1)	Cooling	Running current (A)	39.89				50.26		
		Power consumption (kW)	26.53				33.08		
		Power factor (%)	96				95		
		EER (kW/kW) (Energy Efficiency Ratio)	3.62				2.90		
		Starting current (A)	1.0				1.0		
	Heating	Running current (A)	40.22				44.42		
		Power consumption (kW)	27.03				29.54		
		Power factor (%)	97				96		
		EER (kW/kW) (Energy Efficiency Ratio)	4.00				3.66		
		Starting current (A)	1.0				1.0		
External dimension (mm)		Height 1,800 x Width 990 x Depth 750							
Total weight	Cooling Only (kg)	256							
	Heat Pump (kg)	258							
Color			Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type	Hermetic type							
	Motor output (kW)	3.1 × 2	2.3 × 2			4.2 × 2		3.1 × 2	
Fan unit	Fan	Propeller fan							
	Motor output (kW)	0.6							
	Air volume (m³/h)	10,500	9,900			10,500			
Heat exchanger			Finned tube						
Refrigerant R410A	Cooling Only (kg)	11.0							
Charged amount (* 3)	Heat Pump (kg)	12.5							
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73							
Protective devices			(* 5)						
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2				Ø28.6		Ø22.2
		Liquid side (mm)	Ø12.7						
		Balance side (mm)	Ø9.5						
	Connecting method	Gas side	Brazing						
		Liquid side	Flare						
		Balance side	Flare						
	Max. equivalent length (m)		175						
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)						
	Max. total pipe length (Real length) (m)		300						
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50						
Outdoor unit is lower than indoor unit : 40 (* 6)									
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m						
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m						
Max. No. of connected indoor units			48						
Sound level (dB(A))		63.5							

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

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

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

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

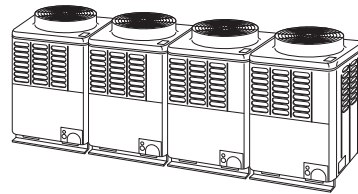
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 36HP						
Set Model name	Cooling Only	MMY-	AP3601T8				AP3611T8		
	Heat Pump	MMY-	AP3601HT8				AP3611HT8		
Outdoor unit type			Inverter						
Outdoor unit model	Cooling Only	MMY-	MAP1001T8	MAP1001T8	MAP0801T8	MAP0801T8	MAP1201T8	MAP1201T8	MAP1201T8
	Heat Pump	MMY-	MAP1001HT8	MAP1001HT8	MAP0801HT8	MAP0801HT8	MAP1201HT8	MAP1201HT8	MAP1201HT8
Rated cooling capacity (* 1)		(kW)	101.0						
Standard heating capacity (* 1)		(kW)	113.0						
Power supply (* 2)			3 phase 50Hz 400V (380 – 415V)						
Electrical characteristics (* 1)	Cooling	Running current (A)	42.67				57.06		
		Power consumption (kW)	28.38				37.16		
		Power factor (%)	96				94		
		EER (kW/kW) (Energy Efficiency Ratio)	3.56				2.72		
		Starting current (A)	1.0				1.0		
	Heating	Running current (A)	43.21				48.36		
		Power consumption (kW)	28.74				31.49		
		Power factor (%)	96				94		
		EER (kW/kW) (Energy Efficiency Ratio)	3.93				3.59		
		Starting current (A)	1.0				1.0		
External dimension (mm)		Height 1,800 x Width 990 x Depth 750							
Total weight	Cooling Only (kg)	256							
	Heat Pump (kg)	258							
Color			Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type	Hermetic type							
	Motor output (kW)	3.1 × 2		2.3 × 2		4.2 × 2			
Fan unit	Fan	Propeller fan							
	Motor output (kW)	0.6							
	Air volume (m³/h)	10,500		9,900		10,500			
Heat exchanger			Finned tube						
Refrigerant R410A Charged amount (* 3)	Cooling Only (kg)	11.0							
	Heat Pump (kg)	12.5							
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73							
Protective devices			(* 5)						
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2				Ø28.6		
		Liquid side (mm)	Ø12.7						
		Balance side (mm)	Ø9.5						
	Connecting method	Gas side	Brazing						
		Liquid side	Flare						
		Balance side	Flare						
	Max. equivalent length (m)		175						
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)						
	Max. total pipe length (Real length) (m)		300						
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50						
Outdoor unit is lower than indoor unit : 40 (* 6)									
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m						
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m						
Max. No. of connected indoor units			48						
Sound level (dB(A))		63.5				64			

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

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

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

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

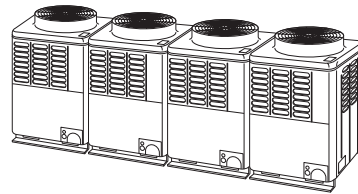
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***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 38HP				Equivalent to 40HP			
Set Model name	Cooling Only	MMY-	AP3801T8				AP4001T8			
	Heat Pump	MMY-	AP3801HT8				AP4001HT8			
Outdoor unit type			Inverter							
Outdoor unit model	Cooling Only	MMY-	MAP1001T8	MAP1001T8	MAP1001T8	MAP0801T8	MAP1001T8	MAP1001T8	MAP1001T8	MAP1001T8
	Heat Pump	MMY-	MAP1001HT8	MAP1001HT8	MAP1001HT8	MAP0801HT8	MAP1001HT8	MAP1001HT8	MAP1001HT8	MAP1001HT8
Rated cooling capacity (★ 1)		(kW)	106.5				112.0			
Standard heating capacity (★ 1)		(kW)	119.5				126.5			
Power supply (★ 2)			3 phase 50Hz 400V (380 – 415V)							
Electrical characteristics (★ 1)	Cooling	Running current (A)	45.65				48.63			
		Power consumption (kW)	30.36				32.34			
		Power factor (%)	96							
		EER (kW/kW) (Energy Efficiency Ratio)	3.51				3.46			
		Starting current (A)	1.0				1.0			
	Heating	Running current (A)	46.36				49.69			
		Power consumption (kW)	30.83				33.05			
		Power factor (%)	96							
		EER (kW/kW) (Energy Efficiency Ratio)	3.88				3.83			
		Starting current (A)	1.0				1.0			
External dimension (mm)		Height 1,800 x Width 990 x Depth 750								
Total weight	Cooling Only (kg)	256								
	Heat Pump (kg)	258								
Color			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type								
	Motor output (kW)	3.1 × 2		2.3 × 2		3.1 × 2				
Fan unit	Fan	Propeller fan								
	Motor output (kW)	0.6								
	Air volume (m³/h)	10,500		9,900		10,500				
Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (★ 3)	Cooling Only (kg)	11.0								
	Heat Pump (kg)	12.5								
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73								
Protective devices			(★ 5)							
Refrigerant pipe spec. (★ 4)	Connecting port dia.	Gas side (mm)	Ø22.2							
		Liquid side (mm)	Ø12.7							
		Balance side (mm)	Ø9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length (m)		175							
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length) (m)		300							
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50 Outdoor unit is lower than indoor unit : 40 (★ 6)							
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units			48							
Sound level (dB(A))		64								

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

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

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

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

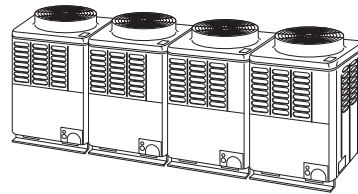
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***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 42HP				Equivalent to 44HP			
Set Model name	Cooling Only	MMY-	AP4201T8				AP4401T8			
	Heat Pump	MMY-	AP4201HT8				AP4401HT8			
Outdoor unit type			Inverter							
Outdoor unit model	Cooling Only	MMY-	MAP1201T8	MAP1001T8	MAP1001T8	MAP1001T8	MAP1201T8	MAP1201T8	MAP1001T8	MAP1001T8
	Heat Pump	MMY-	MAP1201HT8	MAP1001HT8	MAP1001HT8	MAP1001HT8	MAP1201HT8	MAP1201HT8	MAP1001HT8	MAP1001HT8
Rated cooling capacity (★ 1)		(kW)	118.0				123.5			
Standard heating capacity (★ 1)		(kW)	132.0				138.5			
Power supply (★ 2)			3 phase 50Hz 400V (380 – 415V)							
Electrical characteristics (★ 1)	Cooling	Running current (A)	55.24				62.28			
		Power consumption (kW)	36.74				40.99			
		Power factor (%)	96				95			
		EER (kW/kW) (Energy Efficiency Ratio)	3.21				3.01			
		Starting current (A)	1.0				1.0			
	Heating	Running current (A)	53.39				56.76			
		Power consumption (kW)	35.14				37.36			
		Power factor (%)	95							
		EER (kW/kW) (Energy Efficiency Ratio)	3.76				3.69			
		Starting current (A)	1.0				1.0			
External dimension (mm)		Height 1,800 x Width 990 x Depth 750								
Total weight	Cooling Only (kg)	256								
	Heat Pump (kg)	258								
Color			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type								
	Motor output (kW)	4.2 × 2	3.1 × 2			4.2 × 2		3.1 × 2		
Fan unit	Fan	Propeller fan								
	Motor output (kW)	0.6								
	Air volume (m³/h)	10,500								
Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (★ 3)	Cooling Only (kg)	11.0								
	Heat Pump (kg)	12.5								
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73								
Protective devices			(★ 5)							
Refrigerant pipe spec. (★ 4)	Connecting port dia.	Gas side (mm)	Ø28.6	Ø22.2			Ø28.6		Ø22.2	
		Liquid side (mm)	Ø12.7							
		Balance side (mm)	Ø9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length (m)		175							
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length) (m)		300							
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50 Outdoor unit is lower than indoor unit : 40 (★ 6)							
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units			48							
Sound level (dB(A))			64.5							

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

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

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

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

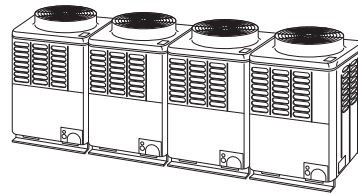
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*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


50Hz

Equivalent HP			Equivalent to 46HP				Equivalent to 48HP			
Set Model name	Cooling Only	MMY-	AP4601T8				AP4801T8			
	Heat Pump	MMY-	AP4601HT8				AP4801HT8			
Outdoor unit type			Inverter							
Outdoor unit model	Cooling Only	MMY-	MAP1201T8	MAP1201T8	MAP1201T8	MAP1001T8	MAP1201T8	MAP1201T8	MAP1201T8	MAP1201T8
	Heat Pump	MMY-	MAP1201HT8	MAP1201HT8	MAP1201HT8	MAP1001HT8	MAP1201HT8	MAP1201HT8	MAP1201HT8	MAP1201HT8
Rated cooling capacity (★ 1)		(kW)	130.0				135.0			
Standard heating capacity (★ 1)		(kW)	145.0				150.0			
Power supply (★ 2)			3 phase 50Hz 400V (380 – 415V)							
Electrical characteristics (★ 1)	Cooling	Running current (A)	69.27				75.47			
		Power consumption (kW)	45.59				49.67			
		Power factor (%)	95							
		EER (kW/kW) (Energy Efficiency Ratio)	2.85				2.72			
		Starting current (A)	1.0				1.0			
	Heating	Running current (A)	60.55				64.19			
		Power consumption (kW)	39.85				41.80			
		Power factor (%)	95				94			
		EER (kW/kW) (Energy Efficiency Ratio)	3.64				3.59			
		Starting current (A)	1.0				1.0			
External dimension (mm)		Height 1,800 x Width 990 x Depth 750								
Total weight	Cooling Only (kg)	256								
	Heat Pump (kg)	258								
Color			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type								
	Motor output (kW)	4.2 × 2				3.1 × 2		4.2 × 2		
Fan unit	Fan	Propeller fan								
	Motor output (kW)	0.6								
	Air volume (m³/h)	10,500								
Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (★ 3)	Cooling Only (kg)	11.0								
	Heat Pump (kg)	12.5								
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73								
Protective devices			(★ 5)							
Refrigerant pipe spec. (★ 4)	Connecting port dia.	Gas side (mm)	Ø28.6			Ø22.2		Ø28.6		
		Liquid side (mm)	Ø12.7							
		Balance side (mm)	Ø9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length (m)		160							
	Max. real length (m)		135 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length) (m)		300							
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50 Outdoor unit is lower than indoor unit : 40 (★ 6)							
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units			48							
Sound level (dB(A))			65							

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

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

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

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

***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


60Hz

Outdoor unit (60Hz)

Equivalent HP				Equivalent to 5HP	Equivalent to 6HP	Equivalent to 8HP	Equivalent to 10HP	Equivalent to 12HP	
Model name	Heat Pump		MMY-	MAP0501HT7	MAP0601HT7	MAP0801HT7	MAP1001HT7	MAP1201HT7	
Outdoor unit type				Inverter unit					
Cooling capacity (★ 1)				(kW)	14.0	16.0	22.4	28.0	33.5
Standard heating capacity (★ 1)				(kW)	16.0	18.0	25.0	31.5	37.5
Power supply (★ 2)				3 phase 60Hz 380V					
Electrical characteristics (★ 1)	Cooling	Running current		(A)	6.16	7.66	9.07	12.16	19.27
		Power consumption		(kW)	3.65	4.64	5.67	7.68	11.92
		Power factor		(%)	90	92	95	96	94
		EER (Energy Efficiency Ratio)		(kW/kW)	3.84	3.45	3.95	3.65	2.81
		Starting current		(A)	1.0	1.0	1.0	1.0	1.0
	Heating	Running current		(A)	6.41	7.45	9.40	12.61	16.47
		Power consumption		(kW)	3.84	4.56	5.88	7.97	10.19
		Power factor		(%)	91	93	95	96	94
		EER (Energy Efficiency Ratio)		(kW/kW)	4.17	3.95	4.25	3.95	3.68
		Starting current		(A)	1.0	1.0	1.0	1.0	1.0
External dimension				(mm)	Height 1,800 x Width 990 x Depth 750				
Total weight				(kg)	228		258		
Color				Silky shade (Munsell 1Y8.5/0.5)					
Compressor	Type			Hermetic type					
	Motor output			(kW)	1.1 × 2	1.4 × 2	2.3 × 2	3.1 × 2	4.2 × 2
Fan unit	Fan			Propeller fan					
	Motor output			(kW)	0.60				
	Air volume			(m³/h)	9,000		9,900	10,500	
Heat exchanger				Finned tube					
Refrigerant R410A (Charged refrigerant amount) (★ 3)				(kg)	R410A (8.5)		R410A (12.5)		
High-pressure switch				(MPa)	OFF : 2.95 ON : 3.73				
Protective devices				(★ 5)					
Refrigerant piping specifications (★ 4)	Connecting port dia	Gas side		(mm)	Ø15.9	Ø19.1	Ø22.2		Ø28.6
		Liquid side		(mm)	Ø9.5		Ø12.7		
		Balance pipe		(mm)	Ø9.5				
	Connecting method	Gas side			Flare	Brazing			
		Liquid side			Flare				
		Balance pipe			Flare				
	Max. equivalent length			(m)	175				
	Max. real length			(m)	150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length)			(m)	300				
	Max. height difference			(m)	Outdoor unit is higher than indoor unit : 50				
					Outdoor unit is lower than indoor unit : 40 (★ 6)				
Control wiring				Shield wire 1.25mm² x 2 cores. up to 2000m					
Central remote controller				When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 pcs. up to 1000m and (Shield wire) 2.0mm² x 2 pcs. up to 2000m					
Max. No. of connected indoor units				8	10	13	16	20	
Sound level				(dB(A))	55	56	57	58	59

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

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

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

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

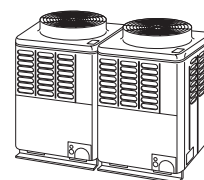
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


60Hz

Outdoor unit (Combination) (60Hz)

Equivalent HP			Equivalent to 14HP		Equivalent to 16HP		Equivalent to 18HP		Equivalent to 20HP			
Set Model name	Heat Pump	MMY-	AP1401HT7		AP1601HT7		AP1801HT7		AP2001HT7			
Outdoor unit type			Inverter									
Outdoor unit model	Heat Pump	MMY-	MAP0801HT7	MAP0601HT7	MAP0801HT7	MAP0801HT7	MAP1001HT7	MAP0801HT7	MAP1001HT7	MAP1001HT7		
Rated cooling capacity (* 1)			(kW)		38.4		45		50.4		56.0	
Standard heating capacity (* 1)			(kW)		43.0		50.5		56.5		63.0	
Power supply (* 2)			3 phase 60Hz 380V									
Electrical characteristics (* 1)	Cooling	Running current (A)	17.97		19.51		22.41		25.59			
		Power consumption (kW)	11.12		12.20		14.16		16.17			
		Power factor (%)	94		95		96		96			
		EER (kW/kW) (Energy Efficiency Ratio)	3.45		3.69		3.56		3.46			
		Starting current (A)	1.0		1.0		1.0		1.0			
	Heating	Running current (A)	17.72		19.64		22.74		26.05			
		Power consumption (kW)	10.96		12.28		14.37		16.46			
		Power factor (%)	94		95		96		96			
		EER (kW/kW) (Energy Efficiency Ratio)	3.92		4.07		3.93		3.83			
		Starting current (A)	1.0		1.0		1.0		1.0			
External dimension (mm)			Height 1,800 x Width 990 x Depth 750									
Total weight (kg)			258	228	258							
Color			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type		Hermetic type									
	Motor output (kW)		2.3 × 2	1.4 × 2	2.3 × 2		3.1 × 2	2.3 × 2	3.1 × 2			
Fan unit	Fan		Propeller fan									
	Motor output (kW)		0.6									
	Air volume (m³/h)		9,900	9,000	9,900		10,500	9,900	10,500			
Heat exchanger			Finned tube									
Refrigerant R410A Charged amount (* 3) (kg)			12.5	8.5	12.5							
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73									
Protective devices			(* 5)									
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2	Ø19.1	Ø22.2							
		Liquid side (mm)	Ø12.7	Ø9.5	Ø12.7							
		Balance side (mm)	Ø9.5									
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivalent length (m)		175									
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)									
	Max. total pipe length (Real length) (m)		300									
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50									
Outdoor unit is lower than indoor unit : 40 (* 6)												
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m									
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m and (Shield wire) 2.0mm² x 2 cores up to 2000m									
Max. No. of connected indoor units			23		27		30		33			
Sound level (dB(A))			59.5		60		60.5		61			

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

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

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

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

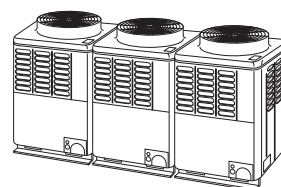
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.



60Hz

Equivalent HP			Equivalent to 22HP				
Set Model name	Heat Pump	MMY-	AP2201HT7			AP2211HT7	
Outdoor unit type			Inverter				
Outdoor unit model	Heat Pump	MMY-	MAP0801HT7	MAP0801HT7	MAP0601HT7	MAP1201HT7	MAP1001HT7
Rated cooling capacity (* 1)		(kW)	61.5				
Standard heating capacity (* 1)		(kW)	69.0				
Power supply (* 2)			3 phase 60Hz 380V				
Electrical characteristics (* 1)	Cooling	Running current (A)	27.81			32.64	
		Power consumption (kW)	17.39			20.41	
		Power factor (%)	95				
		EER (kW/kW) (Energy Efficiency Ratio)	3.54			3.01	
	Heating	Starting current (A)	1.0			1.0	
		Running current (A)	27.75			29.88	
		Power consumption (kW)	17.35			18.68	
		Power factor (%)	95				
		EER (kW/kW) (Energy Efficiency Ratio)	3.98			3.69	
Starting current (A)		1.0			1.0		
External dimension (mm)		Height 1,800 x Width 990 x Depth 750					
Total weight (kg)		258		228	258		
Color			Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type	Hermetic type					
	Motor output (kW)	2.3 × 2		1.4 × 2	4.2 × 2	3.1 × 2	
Fan unit	Fan	Propeller fan					
	Motor output (kW)	0.6					
	Air volume (m³/h)	9,900		9,000	10,500		
Heat exchanger			Finned tube				
Refrigerant R410A Charged amount (* 3)		(kg)	12.5		8.5	12.5	
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73				
Protective devices			(* 5)				
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2		Ø19.1	Ø28.6	Ø22.2
		Liquid side (mm)	Ø12.7		Ø9.5	Ø12.7	
		Balance side (mm)	Ø9.5				
	Connecting method	Gas side	Brazing				
		Liquid side	Flare				
		Balance side	Flare				
	Max. equivalent length (m)		175				
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length) (m)		300				
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50				
Outdoor unit is lower than indoor unit : 40 (* 6)							
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m				
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m				
Max. No. of connected indoor units			37				
Sound level (dB(A))			61.5				

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

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

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

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

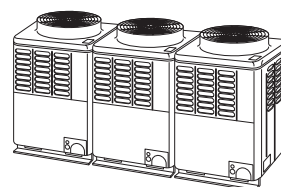
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 24HP				
Set Model name	Heat Pump	MMY-	AP2401HT7			AP2411HT7	
Outdoor unit type			Inverter				
Outdoor unit model	Heat Pump	MMY-	MAP0801HT7	MAP0801HT7	MAP0801HT7	MAP1201HT7	MAP1201HT7
Rated cooling capacity (* 1)		(kW)	68.0				
Standard heating capacity (* 1)		(kW)	76.5				
Power supply (* 2)			3 phase 60Hz 380V				
Electrical characteristics (* 1)	Cooling	Running current (A)	29.19			40.02	
		Power consumption (kW)	18.44			25.02	
		Power factor (%)	96			95	
		EER (kW/kW) (Energy Efficiency Ratio)	3.69			2.72	
		Starting current (A)	1.0			1.0	
	Heating	Running current (A)	29.43			33.74	
		Power consumption (kW)	18.79			21.32	
		Power factor (%)	97			96	
		EER (kW/kW) (Energy Efficiency Ratio)	4.07			3.59	
Starting current (A)		1.0			1.0		
External dimension (mm)		Height 1,800 x Width 990 x Depth 750					
Total weight (kg)		258					
Color			Silky shade (Munsell 1Y8.5/0.5)				
Compressor	Type	Hermetic type					
	Motor output (kW)	2.3 x 2			4.2 x 2		
Fan unit	Fan	Propeller fan					
	Motor output (kW)	0.6					
	Air volume (m³/h)	9,900			10.500		
Heat exchanger			Finned tube				
Refrigerant R410A Charged amount (* 3)		(kg)	12.5				
High-pressure switch (MPa)		OFF : 2.90 ON : 3.73					
Protective devices			(* 5)				
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2			Ø28.6	
		Liquid side (mm)	Ø12.7				
		Balance side (mm)	Ø9.5				
	Connecting method	Gas side	Brazing				
		Liquid side	Flare				
		Balance side	Flare				
	Max. equivalent length (m)		175				
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)				
	Max. total pipe length (Real length) (m)		300				
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50 Outdoor unit is lower than indoor unit : 40 (* 6)				
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m				
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m				
Max. No. of connected indoor units			40				
Sound level (dB(A))		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

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

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

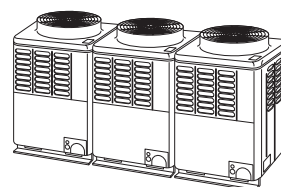
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 26HP			Equivalent to 28HP			Equivalent to 30HP			
Set Model name		Heat Pump	MMY-	AP2601HT7			AP2801HT7			AP3001HT7		
Outdoor unit type			Inverter									
Outdoor unit model		Heat Pump	MMY-	MAP1001HT7	MAP0801HT7	MAP0801HT7	MAP1001HT7	MAP1001HT7	MAP0801HT7	MAP1001HT7	MAP1001HT7	
Rated cooling capacity (* 1)			(kW)	73			78.5			84.0		
Standard heating capacity (* 1)			(kW)	81.5			88.0			95.0		
Power supply (* 2)			3 phase 60Hz 380V									
Electrical characteristics (* 1)	Cooling	Running current	(A)	32.11			35.25			38.40		
		Power consumption	(kW)	20.29			22.27			24.26		
		Power factor	(%)	96								
		EER (kW/kW) (Energy Efficiency Ratio)		3.60			3.52			3.46		
		Starting current	(A)	1.0			1.0			1.0		
	Heating	Running current	(A)	32.80			35.77			38.88		
		Power consumption	(kW)	20.51			22.60			24.82		
		Power factor	(%)	95			96			97		
		EER (kW/kW) (Energy Efficiency Ratio)		3.97			3.89			3.83		
Starting current		(A)	1.0			1.0			1.0			
External dimension (mm)			Height 1,800 x Width 990 x Depth 750									
Total weight (kg)			258									
Color			Silky shade (Munsell 1Y8.5/0.5)									
Compressor	Type		Hermetic type									
	Motor output (kW)		2.3 × 2			3.1 × 2		2.3 × 2		3.1 × 2		
Fan unit	Fan		Propeller fan									
	Motor output (kW)		0.6									
	Air volume (m³/h)		10,500	9,900		10,500		9,900		10,500		
Heat exchanger			Finned tube									
Refrigerant R410A Charged amount (* 3) (kg)			12.5									
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73									
Protective devices			(* 5)									
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2									
		Liquid side (mm)	Ø12.7									
		Balance side (mm)	Ø9.5									
	Connecting method	Gas side	Brazing									
		Liquid side	Flare									
		Balance side	Flare									
	Max. equivalent length (m)		175									
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)									
	Max. total pipe length (Real length) (m)		300									
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50									
Outdoor unit is lower than indoor unit : 40 (* 6)												
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m									
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m									
Max. No. of connected indoor units			43			47			48			
Sound level (dB(A))			62			62.5			63			

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

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

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

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

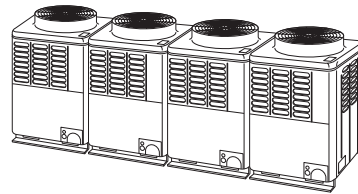
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 32HP							
Set Model name		Heat Pump	MMY-	AP3201HT7				AP3211HT7		
Outdoor unit type			Inverter							
Outdoor unit model		Heat Pump	MMY-	MAP0801HT7	MAP0801HT7	MAP0801HT7	MAP0801HT7	MAP1201HT7	MAP1001HT7	MAP1001HT7
Rated cooling capacity (★ 1)			(kW)	90.0						
Standard heating capacity (★ 1)			(kW)	100.0						
Power supply (★ 2)			3 phase 60Hz 380V							
Electrical characteristics (★ 1)	Cooling	Running current	(A)	39.04				45.34		
		Power consumption	(kW)	24.41				28.65		
		Power factor	(%)	95				96		
		EER (kW/kW) (Energy Efficiency Ratio)		3.69				3.14		
		Starting current	(A)	1.0				1.0		
	Heating	Running current	(A)	39.28				42.83		
		Power consumption	(kW)	24.56				26.78		
		Power factor	(%)	95				95		
		EER (kW/kW) (Energy Efficiency Ratio)		4.07				3.73		
		Starting current	(A)	1.0				1.0		
External dimension (mm)			Height 1,800 x Width 990 x Depth 750							
Total weight (kg)			258							
Color			Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type								
	Motor output	(kW)	2.3 × 2				4.2 × 2	3.1 × 2		
Fan unit	Fan	Propeller fan								
	Motor output	(kW)	0.6							
	Air volume	(m³/h)	9,900				10,500			
Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (★ 3)			(kg)	12.5						
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73							
Protective devices			(★ 5)							
Refrigerant pipe spec. (★ 4)	Connecting port dia.	Gas side	(mm)	Ø22.2				Ø28.6	Ø22.2	
		Liquid side	(mm)	Ø12.7						
		Balance side	(mm)	Ø9.5						
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length		(m)	175						
	Max. real length		(m)	150 (However, if equivalent bend length is longer, equivalent length is the standard.)						
	Max. total pipe length (Real length)		(m)	300						
	Max. height difference		(m)	Outdoor unit is higher than indoor unit : 50						
Outdoor unit is lower than indoor unit : 40 (★6)										
Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units			48							
Sound level (dB(A))			63							

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

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

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

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

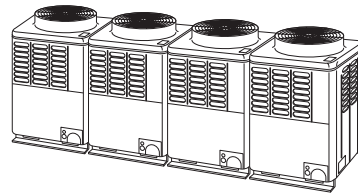
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 34HP								
Set Model name		Heat Pump	MMY-	AP3401HT7				AP3411HT7			
Outdoor unit type				Inverter							
Outdoor unit model		Heat Pump	MMY-	MAP1001HT7	MAP0801HT7	MAP0801HT7	MAP0801HT7	MAP1201HT7	MAP1201HT7	MAP1001HT7	
Rated cooling capacity (★ 1)			(kW)	96.0							
Standard heating capacity (★ 1)			(kW)	108.0							
Power supply (★ 2)				3 phase 60Hz 380V							
Electrical characteristics (★ 1)	Cooling	Running current	(A)	41.99				52.91			
		Power consumption	(kW)	26.53				33.08			
		Power factor	(%)	96				95			
		EER (kW/kW) (Energy Efficiency Ratio)		3.62				2.90			
		Starting current	(A)	1.0				1.0			
	Heating	Running current	(A)	42.34				46.75			
		Power consumption	(kW)	27.03				29.54			
		Power factor	(%)	97				96			
		EER (kW/kW) (Energy Efficiency Ratio)		4.00				3.66			
		Starting current	(A)	1.0				1.0			
External dimension			(mm)	Height 1,800 x Width 990 x Depth 750							
Total weight			(kg)	258							
Color				Silky shade (Munsell 1Y8.5/0.5)							
Compressor	Type	Hermetic type									
	Motor output	(kW)	3.1 × 2	2.3 × 2			4.2 × 2		3.1 × 2		
Fan unit	Fan	Propeller fan									
	Motor output	(kW)	0.6								
	Air volume	(m³/h)	10,500	9,900			10,500				
Heat exchanger				Finned tube							
Refrigerant R410A Charged amount (★ 3)			(kg)	12.5							
High-pressure switch			(MPa)	OFF : 2.90 ON : 3.73							
Protective devices				(★ 5)							
Refrigerant pipe spec. (★ 4)	Connecting port dia.	Gas side	(mm)	Ø22.2			Ø28.6		Ø22.2		
		Liquid side	(mm)	Ø12.7							
		Balance side	(mm)	Ø9.5							
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivalent length		(m)	175							
	Max. real length		(m)	150 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length)		(m)	300							
	Max. height difference		(m)	Outdoor unit is higher than indoor unit : 50							
Outdoor unit is lower than indoor unit : 40 (★ 6)											
Control wiring				Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller				When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m							
Max. No. of connected indoor units				48							
Sound level (dB(A))				63.5							

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

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

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

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

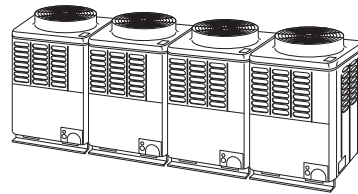
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 36HP							
Set Model name		Heat Pump	MMY-	AP3601HT7				AP3611HT7		
Outdoor unit type				Inverter						
Outdoor unit model		Heat Pump	MMY-	MAP1001HT7	MAP1001HT7	MAP0801HT7	MAP0801HT7	MAP1201HT7	MAP1201HT7	MAP1201HT7
Rated cooling capacity (* 1)			(kW)	101.0						
Standard heating capacity (* 1)			(kW)	113.0						
Power supply (* 2)				3 phase 60Hz 380V						
Electrical characteristics (* 1)	Cooling	Running current	(A)	44.92				60.06		
		Power consumption	(kW)	28.38				37.16		
		Power factor	(%)	96				94		
		EER (kW/kW) (Energy Efficiency Ratio)		3.56				2.72		
		Starting current	(A)	1.0				1.0		
	Heating	Running current	(A)	45.49				50.90		
		Power consumption	(kW)	28.74				31.49		
		Power factor	(%)	96				94		
		EER (kW/kW) (Energy Efficiency Ratio)		3.93				3.59		
		Starting current	(A)	1.0				1.0		
External dimension (mm)			Height 1,800 x Width 990 x Depth 750							
Total weight (kg)			258							
Color				Silky shade (Munsell 1Y8.5/0.5)						
Compressor	Type	Hermetic type								
	Motor output (kW)	3.1 × 2		2.3 × 2			4.2 × 2			
Fan unit	Fan	Propeller fan								
	Motor output (kW)	0.6								
	Air volume (m³/h)	10,500		9,900			10,500			
Heat exchanger				Finned tube						
Refrigerant R410A Charged amount (* 3)			(kg)	12.5						
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73							
Protective devices				(* 5)						
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2				Ø28.6			
		Liquid side (mm)	Ø12.7							
		Balance side (mm)	Ø9.5							
	Connecting method	Gas side	Brazing							
		Liquid side	Flare							
		Balance side	Flare							
	Max. equivalent length (m)		175							
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)							
	Max. total pipe length (Real length) (m)		300							
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50							
Outdoor unit is lower than indoor unit : 40 (* 6)										
Control wiring				Shield wire 1.25mm² x 2 cores. up to 2000m						
Central remote controller				When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m						
Max. No. of connected indoor units				48						
Sound level (dB(A))			63.5				64			

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

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

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

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

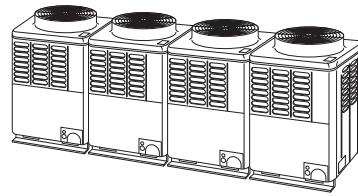
*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

*6 : 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 38HP				Equivalent to 40HP				
Set Model name		Heat Pump	MMY-	AP3801HT7				AP4001HT7			
Outdoor unit type			Inverter								
Outdoor unit model		Heat Pump	MMY-	MAP1001HT7	MAP1001HT7	MAP1001HT7	MAP0801HT7	MAP1001HT7	MAP1001HT7	MAP1001HT7	MAP1001HT7
Rated cooling capacity (* 1)			(kW)	106.5				112.0			
Standard heating capacity (* 1)			(kW)	119.5				126.5			
Power supply (* 2)			3 phase 60Hz 380V								
Electrical characteristics (* 1)	Cooling	Running current	(A)	48.05				51.18			
		Power consumption	(kW)	30.36				32.34			
		Power factor	(%)	96							
		EER (kW/kW) (Energy Efficiency Ratio)	3.51				3.46				
		Starting current	(A)	1.0				+0			
	Heating	Running current	(A)	48.79				52.31			
		Power consumption	(kW)	30.83				33.05			
		Power factor	(%)	96							
		EER (kW/kW) (Energy Efficiency Ratio)	3.88				3.83				
		Starting current	(A)	1.0				1.0			
External dimension (mm)			Height 1,800 x Width 990 x Depth 750								
Total weight (kg)			258								
Color			Silky shade (Munsell 1Y8.5/0.5)								
Compressor	Type		Hermetic type								
	Motor output (kW)		3.1 × 2		2.3 × 2		3.1 × 2				
Fan unit	Fan		Propeller fan								
	Motor output (kW)		0.6								
	Air volume (m³/h)		10,500		9,900		10,500				
	Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (* 3) (kg)			12.5								
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73								
Protective devices			(* 5)								
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø22.2								
		Liquid side (mm)	Ø12.7								
		Balance side (mm)	Ø9.5								
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivalent length (m)		175								
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)								
	Max. total pipe length (Real length) (m)		300								
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50								
			Outdoor unit is lower than indoor unit : 40 (* 6)								
	Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m								
Max. No. of connected indoor units			48								
Sound level (dB(A))			64								

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

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

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

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

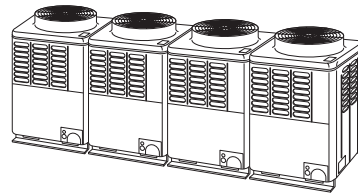
***3 :** The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

***4 :** The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

System safety protection

***5 :** Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

***6 :** 30m when the height difference between indoor units exceeds 3m.


60Hz

Equivalent HP			Equivalent to 42HP				Equivalent to 44HP				
Set Model name	Heat Pump	MMY-	AP4201HT7				AP4401HT7				
Outdoor unit type			Inverter								
Outdoor unit model	Heat Pump	MMY-	MAP1201HT7	MAP1001HT7	MAP1001HT7	MAP1001HT7	MAP1201HT7	MAP1201HT7	MAP1001HT7	MAP1001HT7	
Rated cooling capacity (* 1)		(kW)	118.0				123.5				
Standard heating capacity (* 1)		(kW)	132.0				138.0				
Power supply (* 2)			3 phase 60Hz 380V								
Electrical characteristics (* 1)	Cooling	Running current (A)	58.15				60.56				
		Power consumption (kW)	36.74				40.99				
		Power factor (%)	96				95				
		EER (kW/kW) (Energy Efficiency Ratio)	3.21				3.01				
		Starting current (A)	1.0				1.0				
	Heating	Running current (A)	56.20				59.75				
		Power consumption (kW)	35.14				37.36				
		Power factor (%)	95								
		EER (kW/kW) (Energy Efficiency Ratio)	3.76				3.69				
		Starting current (A)	1.0				1.0				
External dimension (mm)		Height 1,800 x Width 990 x Depth 750									
Total weight (kg)		258									
Color			Silky shade (Munsell 1Y8.5/0.5)								
Compressor	Type		Hermetic type								
	Motor output (kW)	4.2 × 2	3.1 × 2			4.2 × 2		3.1 × 2			
Fan unit	Fan		Propeller fan								
	Motor output (kW)	0.6									
	Air volume (m³/h)		10,500								
	Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (* 3)		(kg)	12.5								
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73								
Protective devices			(* 5)								
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø28.6	Ø22.2			Ø28.6		Ø22.2		
		Liquid side (mm)	Ø12.7								
		Balance side (mm)	Ø9.5								
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivalent length (m)		175								
	Max. real length (m)		150 (However, if equivalent bend length is longer, equivalent length is the standard.)								
	Max. total pipe length (Real length) (m)		300								
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50								
			Outdoor unit is lower than indoor unit : 40 (* 6)								
	Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m								
Max. No. of connected indoor units			48								
Sound level (dB(A))			64.5								

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

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

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

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

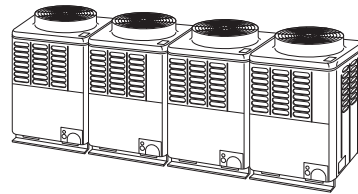
***3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.**

***4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.**

System safety protection

***5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.**

***6 : 30m when the height difference between indoor units exceeds 3m.**


60Hz

Equivalent HP			Equivalent to 46HP				Equivalent to 48HP				
Set Model name		Heat Pump	MMY-	AP4601HT7				AP4801HT7			
Outdoor unit type			Inverter								
Outdoor unit model		Heat Pump	MMY-	MAP1201HT7	MAP1201HT7	MAP1201HT7	MAP1001HT7	MAP1201HT7	MAP1201HT7	MAP1201HT7	MAP1201HT7
Rated cooling capacity (* 1)			(kW)	130.0				135.0			
Standard heating capacity (* 1)			(kW)	145.0				150.0			
Power supply (* 2)			3 phase 60Hz 380V								
Electrical characteristics (* 1)	Cooling	Running current	(A)	72.92				79.44			
		Power consumption	(kW)	45.59				49.67			
		Power factor	(%)	95							
		EER (kW/kW) (Energy Efficiency Ratio)	2.85				2.72				
		Starting current	(A)	1.0				1.0			
	Heating	Running current	(A)	63.73				67.56			
		Power consumption	(kW)	39.85				41.80			
		Power factor	(%)	95				94			
		EER (kW/kW) (Energy Efficiency Ratio)	3.64				3.59				
		Starting current	(A)	1.0				1.0			
External dimension (mm)			Height 1,800 x Width 990 x Depth 750								
Total weight (kg)			258								
Color			Silky shade (Munsell 1Y8.5/0.5)								
Compressor	Type		Hermetic type								
	Motor output (kW)		4.2 × 2		3.1 × 2		4.2 × 2				
Fan unit	Fan		Propeller fan								
	Motor output (kW)		0.6								
	Air volume (m³/h)		10,500								
	Heat exchanger			Finned tube							
Refrigerant R410A Charged amount (* 3) (kg)			12.5								
High-pressure switch (MPa)			OFF : 2.90 ON : 3.73								
Protective devices			(* 5)								
Refrigerant pipe spec. (* 4)	Connecting port dia.	Gas side (mm)	Ø28.6			Ø22.2		Ø28.6			
		Liquid side (mm)	Ø12.7								
		Balance side (mm)	Ø9.5								
	Connecting method	Gas side	Brazing								
		Liquid side	Flare								
		Balance side	Flare								
	Max. equivalent length (m)		160								
	Max. real length (m)		135 (However, if equivalent bend length is longer, equivalent length is the standard.)								
	Max. total pipe length (Real length) (m)		300								
	Max. height difference (m)		Outdoor unit is higher than indoor unit : 50								
			Outdoor unit is lower than indoor unit : 40 (* 6)								
	Control wiring			Shield wire 1.25mm² x 2 cores. up to 2000m							
Central remote controller			When connecting to outdoor unit : (Shield wire) 1.25mm² x 2 cores up to 1000m, and (Shield wire) 2.0mm² x 2 cores up to 2000m								
Max. No. of connected indoor units			48								
Sound level (dB(A))			65								

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

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

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

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

*3 : The amount does not consider extra piping lengths. Refrigerant must be added on site in accordance with the actual piping length.

*4 : The maximum total piping length indicates the sum of one-way piping lengths on the liquid side or gas side.

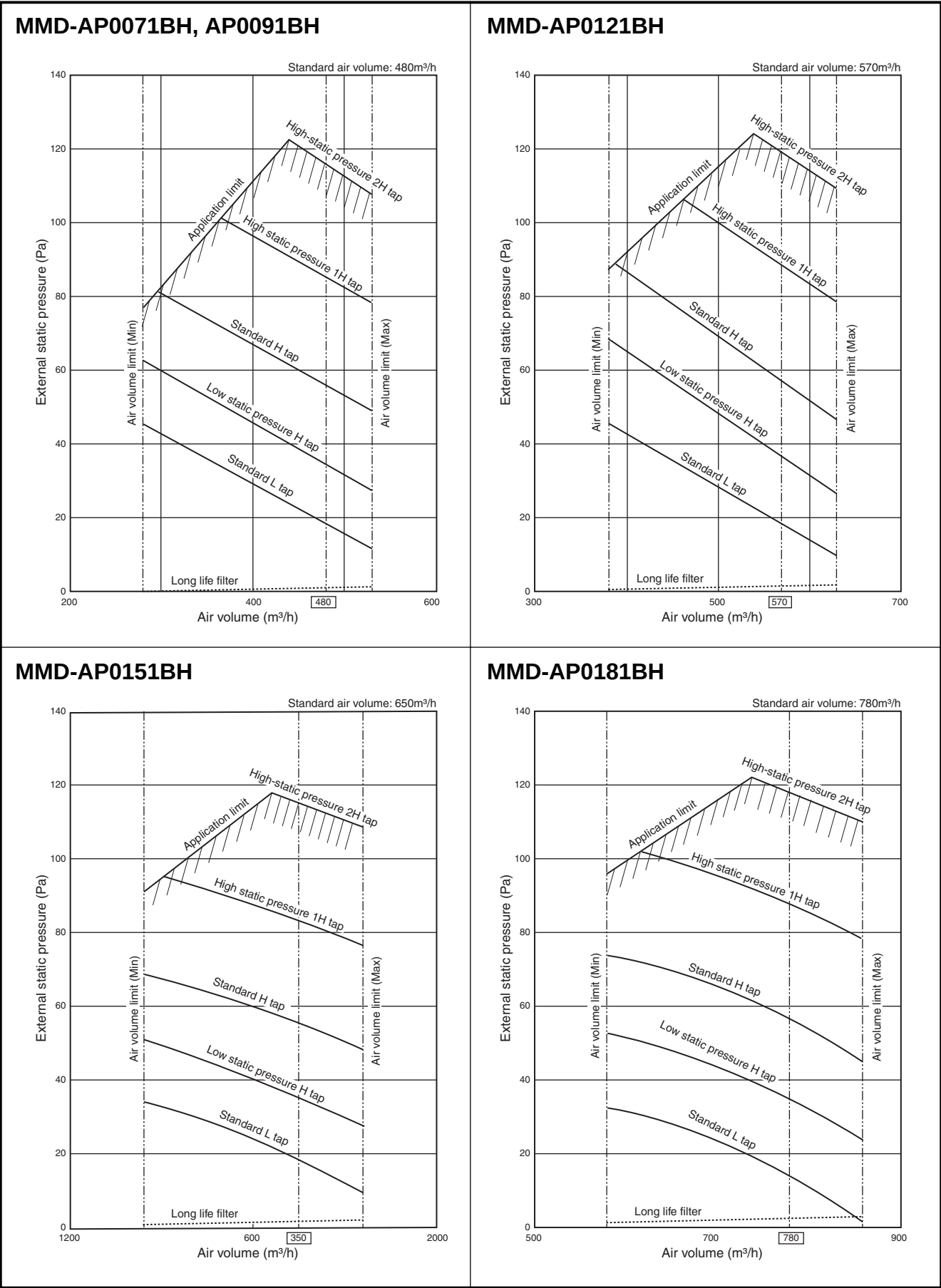
System safety protection

*5 : Discharge temp. sensor, Suction temp. sensor, Compressor case thermostat, High-pressure switch, Over-current sensor, High-pressure sensor, Low pressure sensor, Over-current relay.

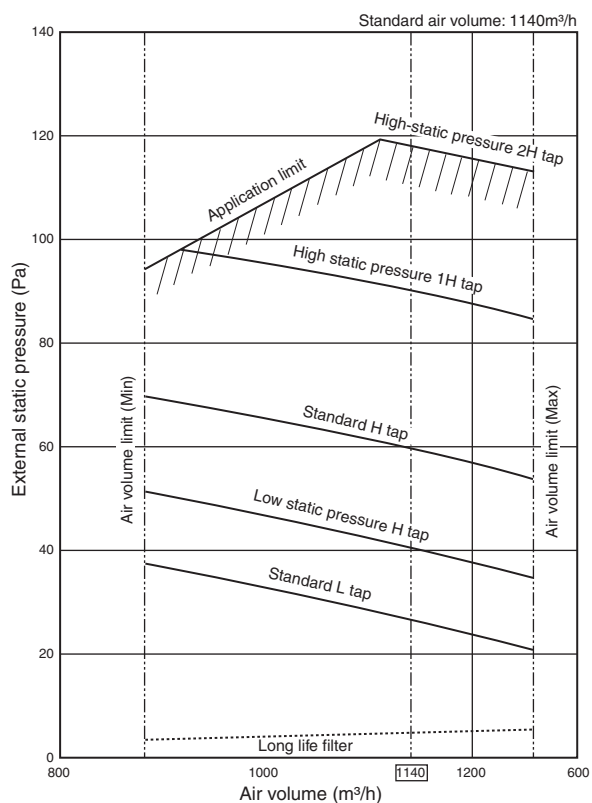
*6 : 30m when the height difference between indoor units exceeds 3m.

10. FAN CHARACTERISTICS

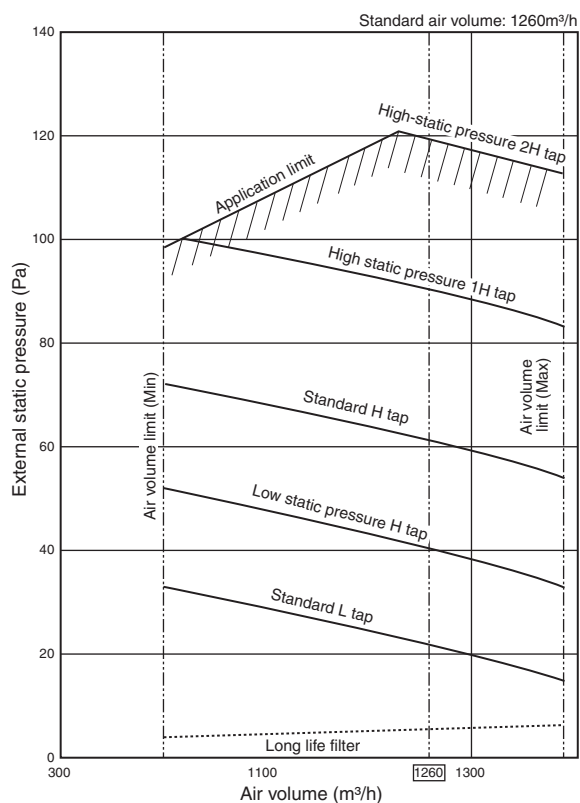
- In case of square duct flange of discharge section



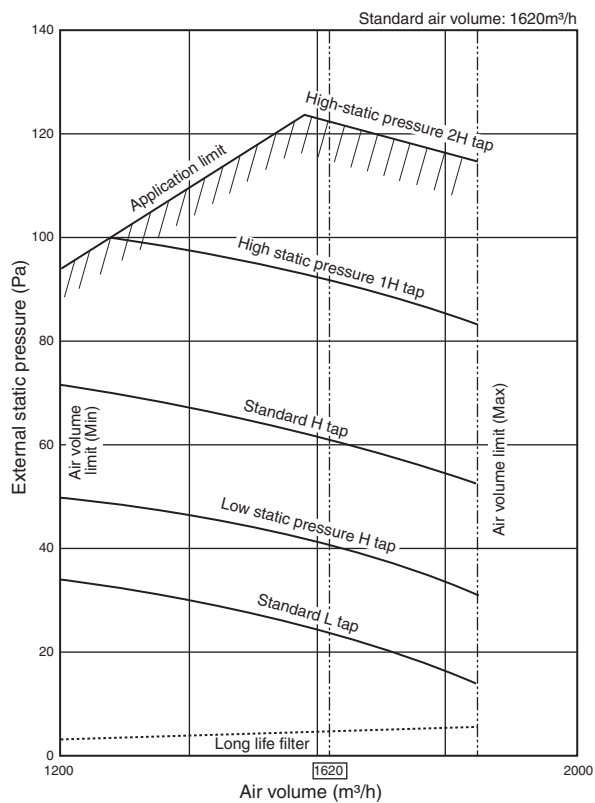
MMD-AP0241BH, AP0271BH



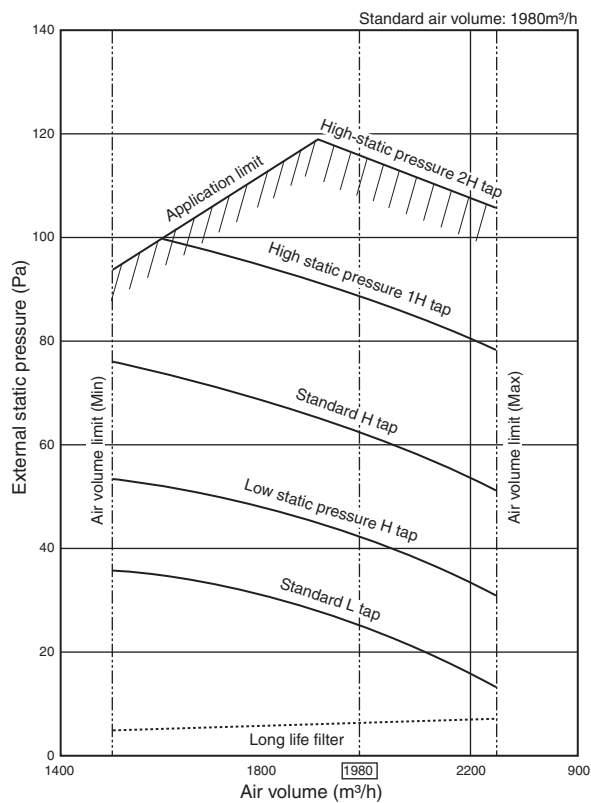
MMD-AP0301BH



MMD-AP0361BH

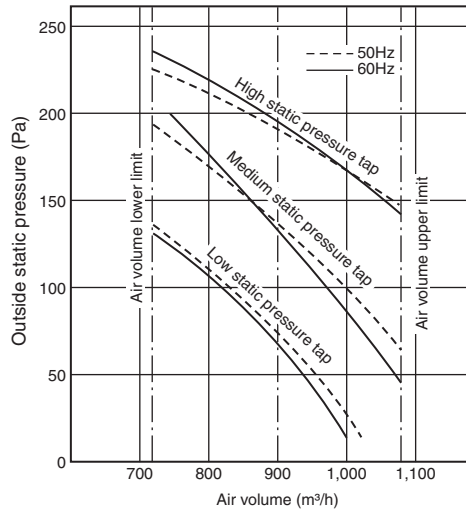
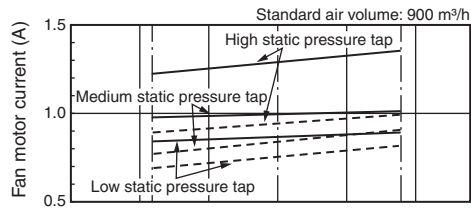


MMD-AP0481BH, AP0561BH

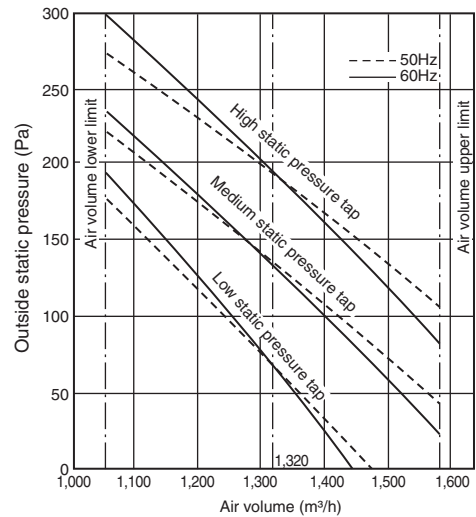
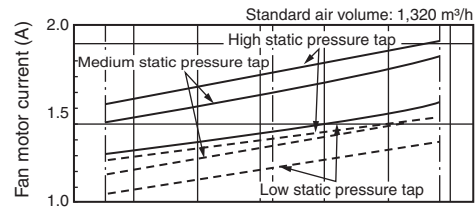


- **Concealed Duct High Static Pressure type**

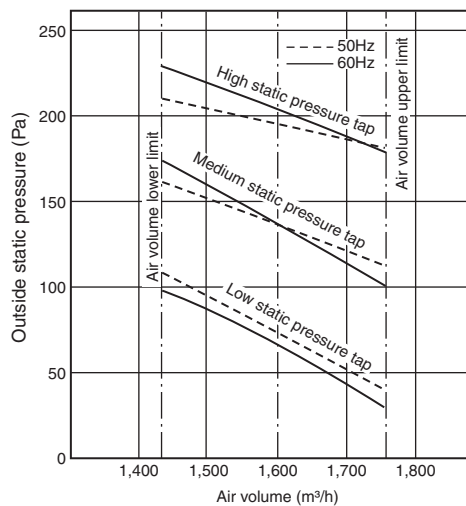
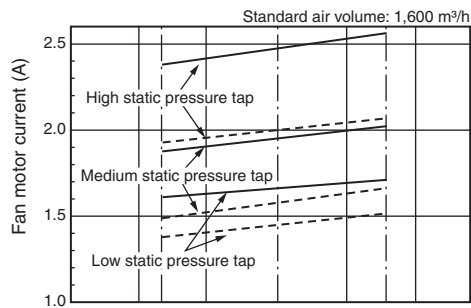
MMD-AP0181H



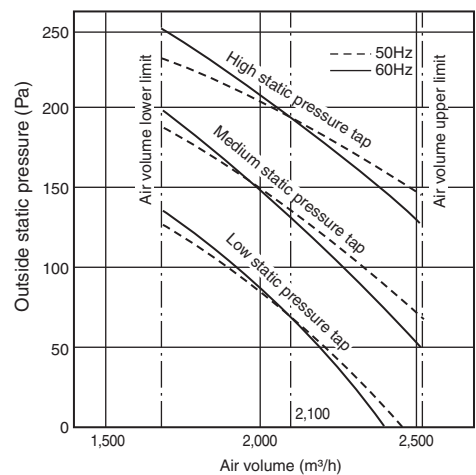
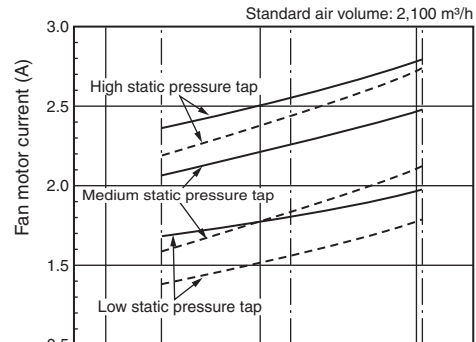
MMD-AP0241H, AP0271H



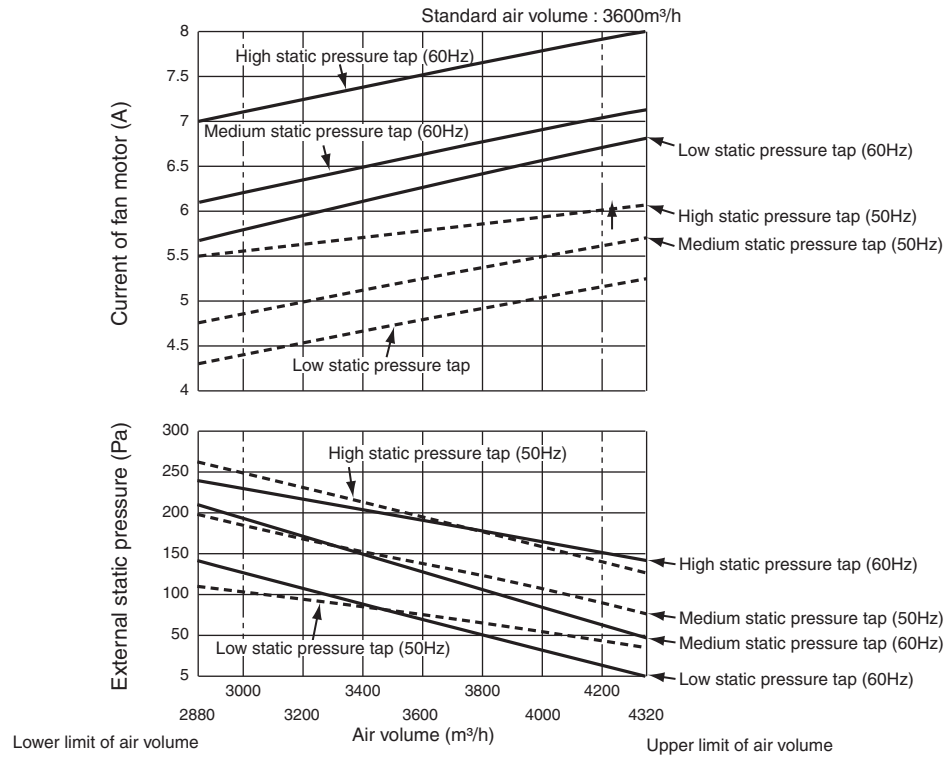
MMD-AP0361H



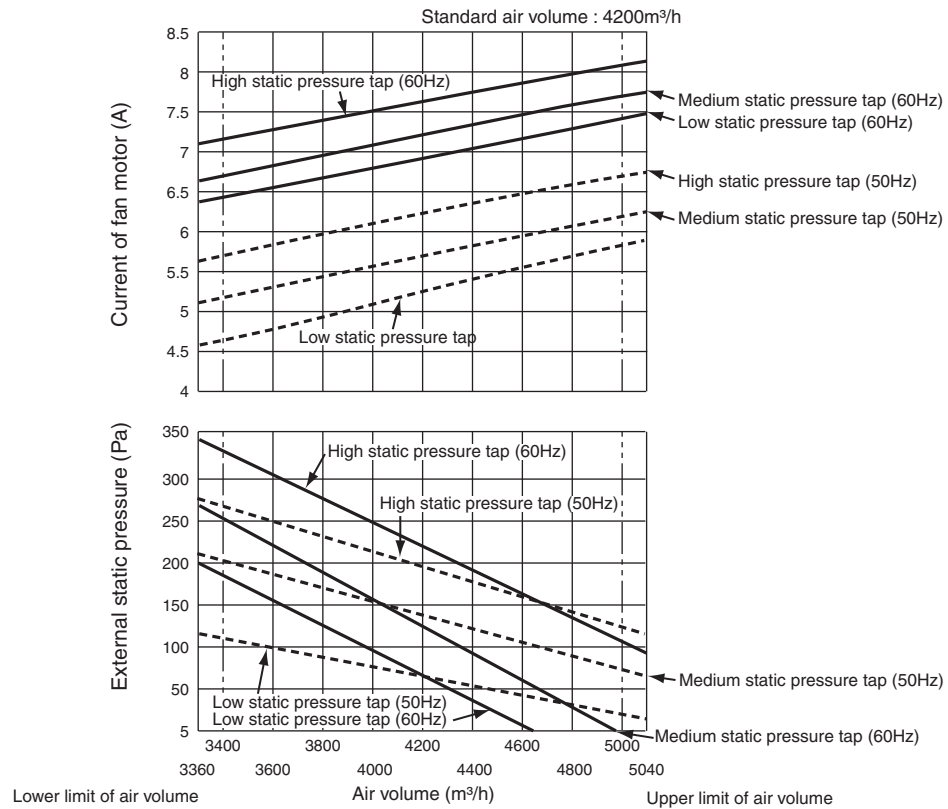
MMD-AP0481H



MMD-AP0721H



MMD-AP0961H



REQUIREMENT

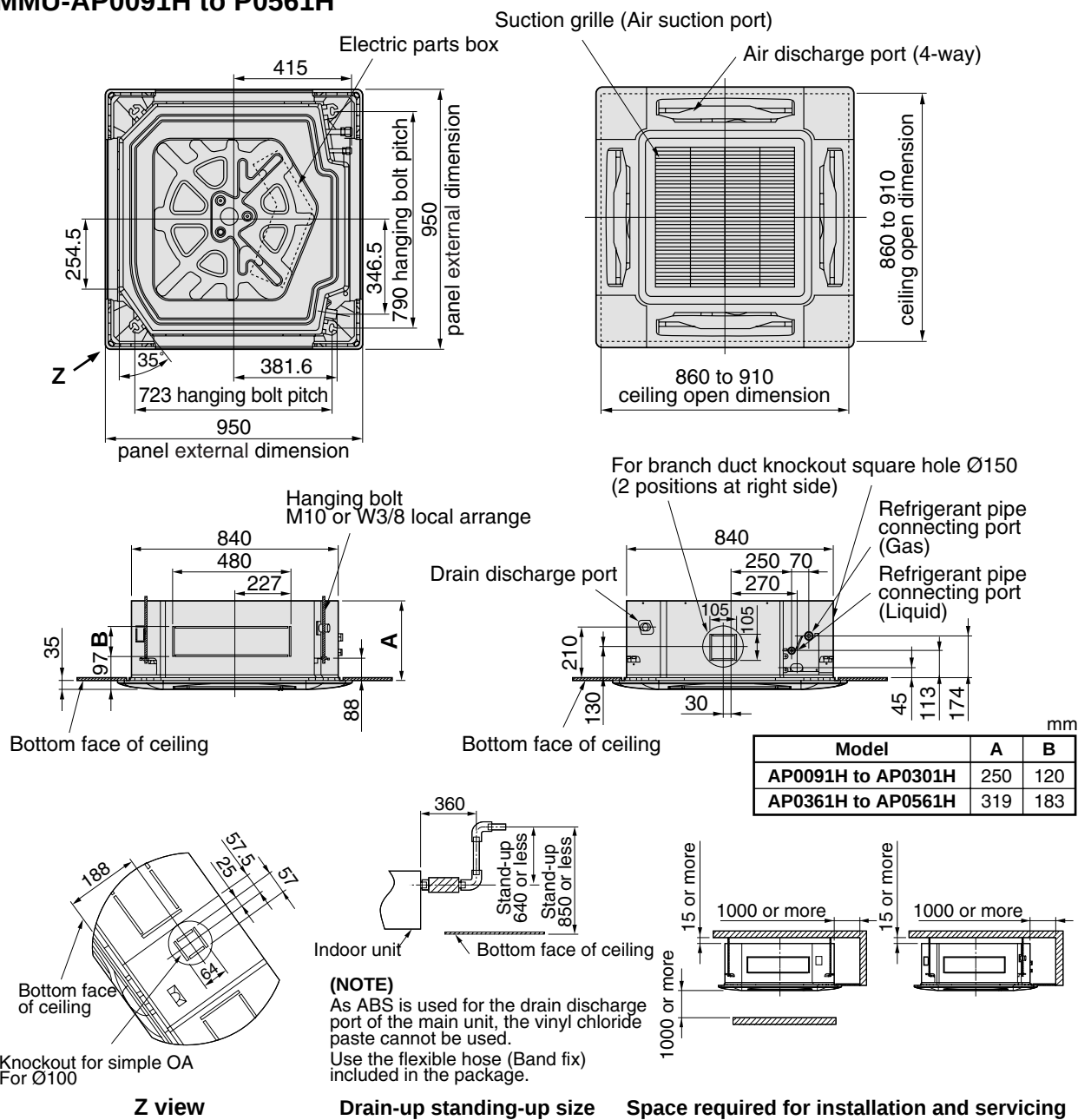
Add a air volume damper to the air supply duct, and adjust the air volume in the range from 80% to 120% of the standard air volume.

11. DIMENSIONAL DRAWINGS

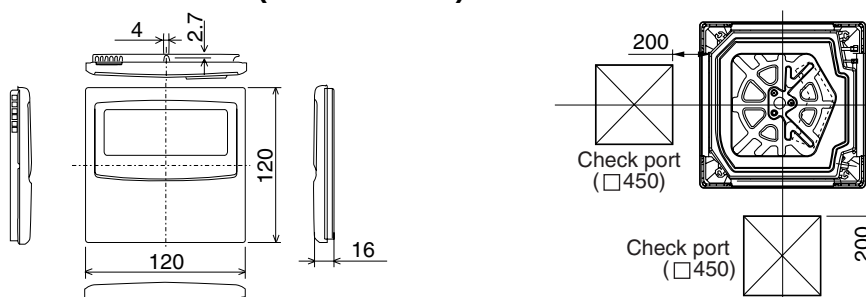
Indoor unit

• 4-way Air Discharge Cassette Type

MMU-AP0091H to P0561H

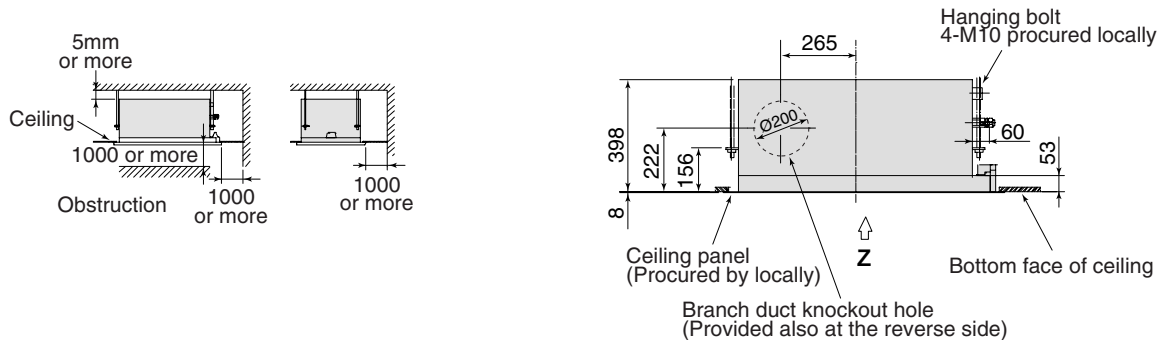
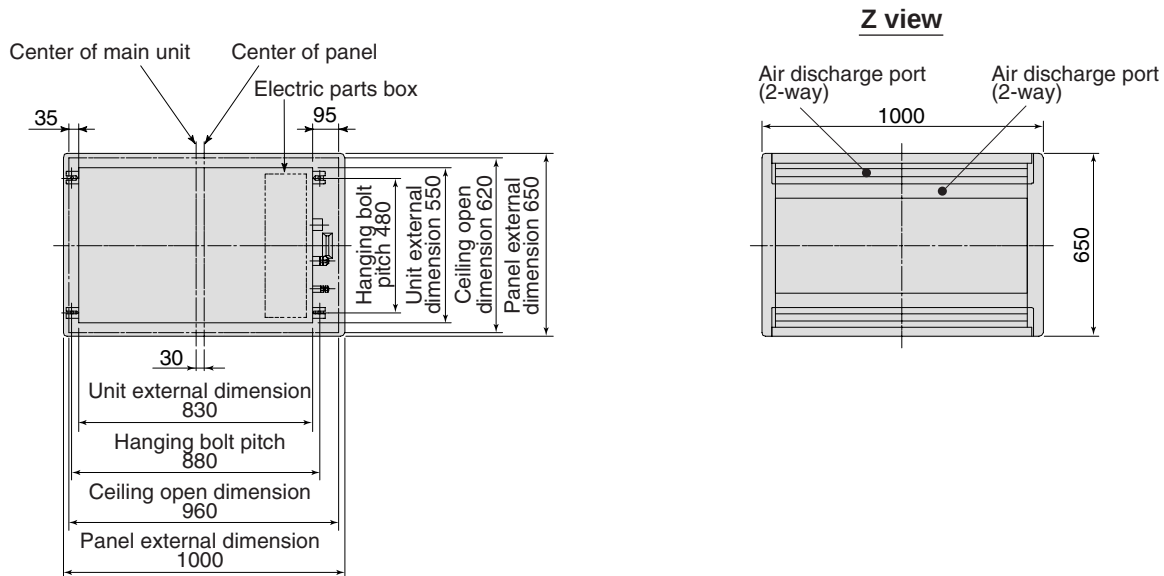


• Wired remote controller (RBC-AMT21E)

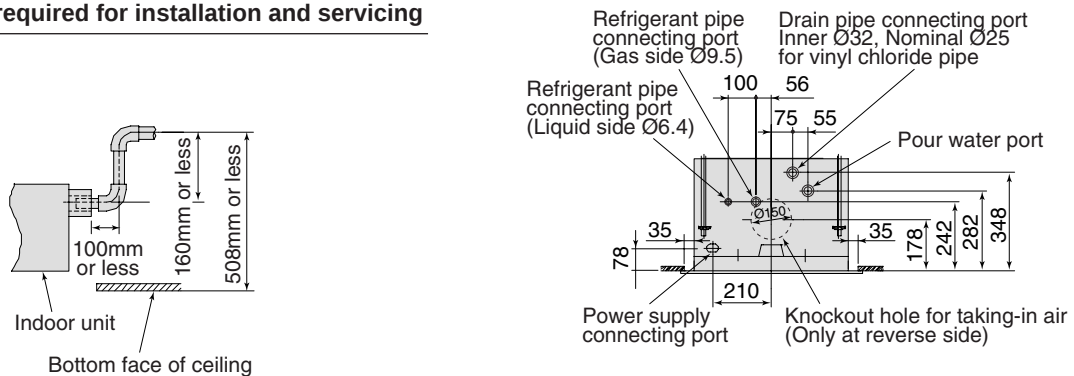


• 2-way Air Discharge Cassette Type

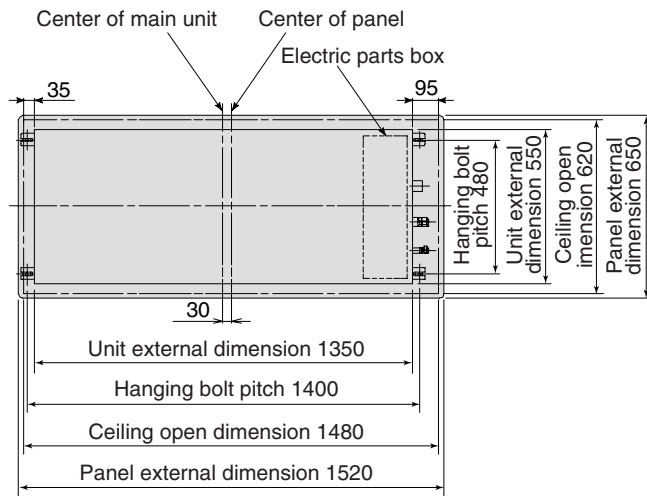
MMU-AP0071WH, AP0091WH, AP0121WH



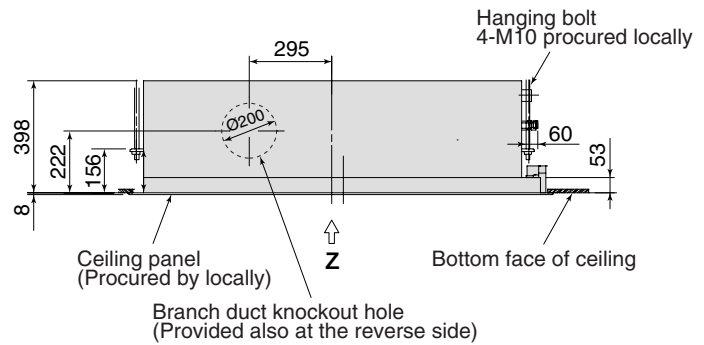
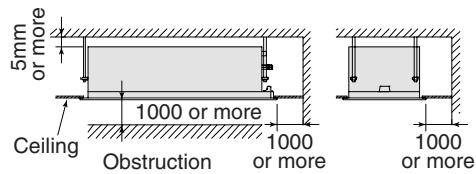
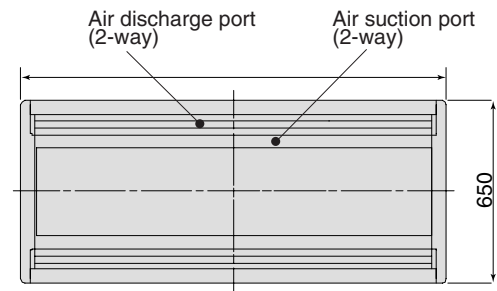
Space required for installation and servicing



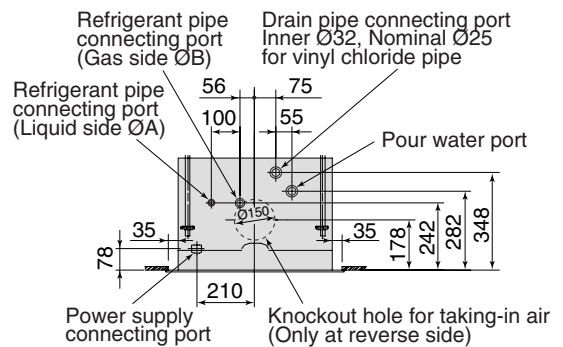
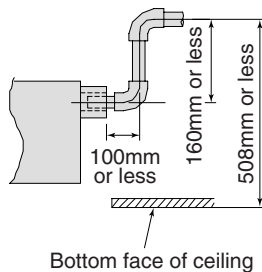
MMU-AP0151WH, AP0181WH, AP0241WH, AP0271WH. AP0301WH



Z view

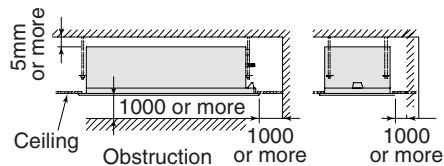
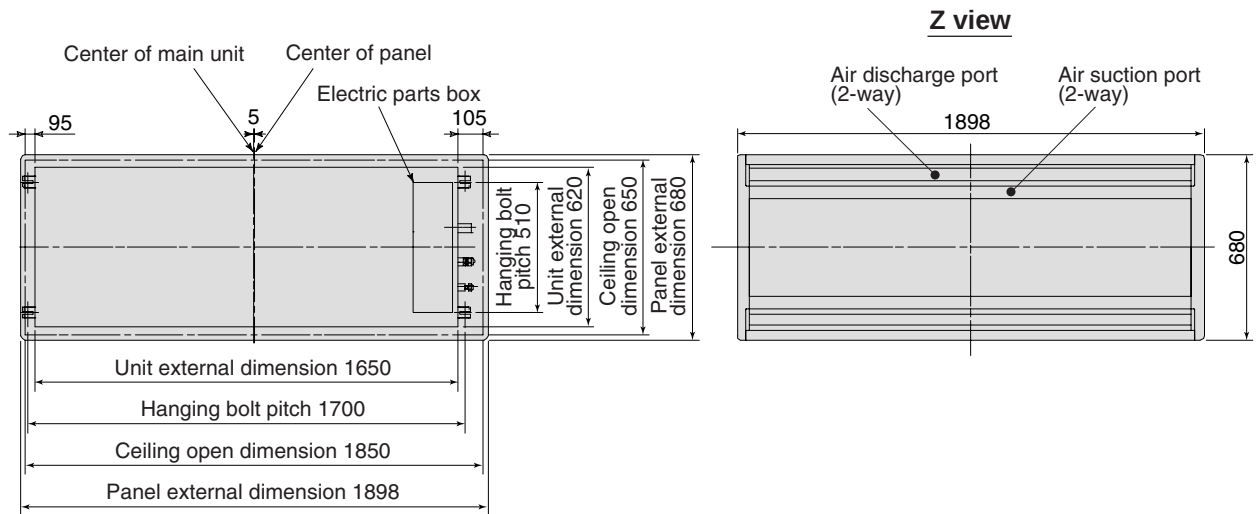


Space required for installation and servicing

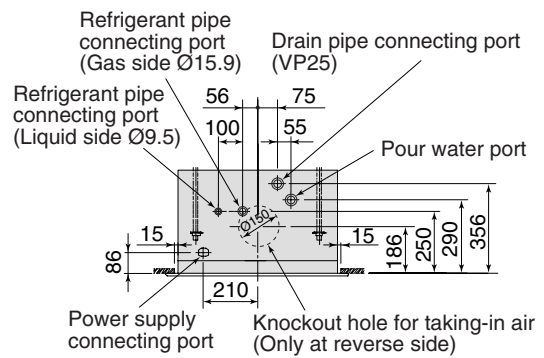
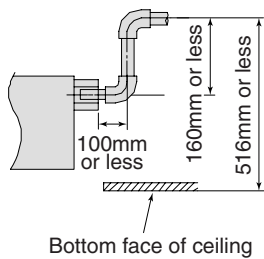
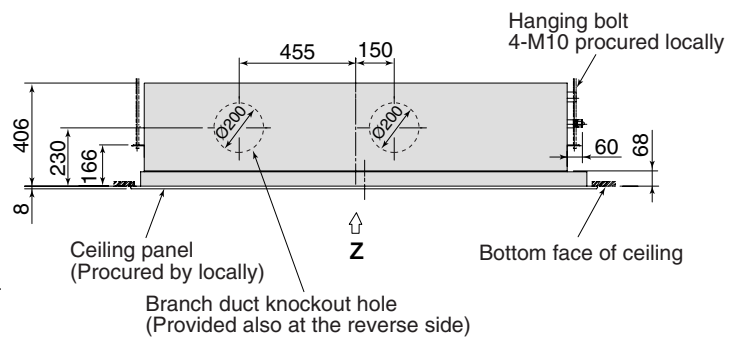


Model	A	B
MMU-AP0151WH to AP0181WH	Ø6.4	Ø12.7
MMU-AP0241WH to AP0301WH	Ø9.5	Ø15.9

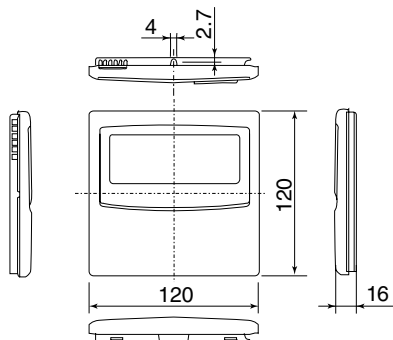
MMU-AP0481WH



Space required for installation and servicing

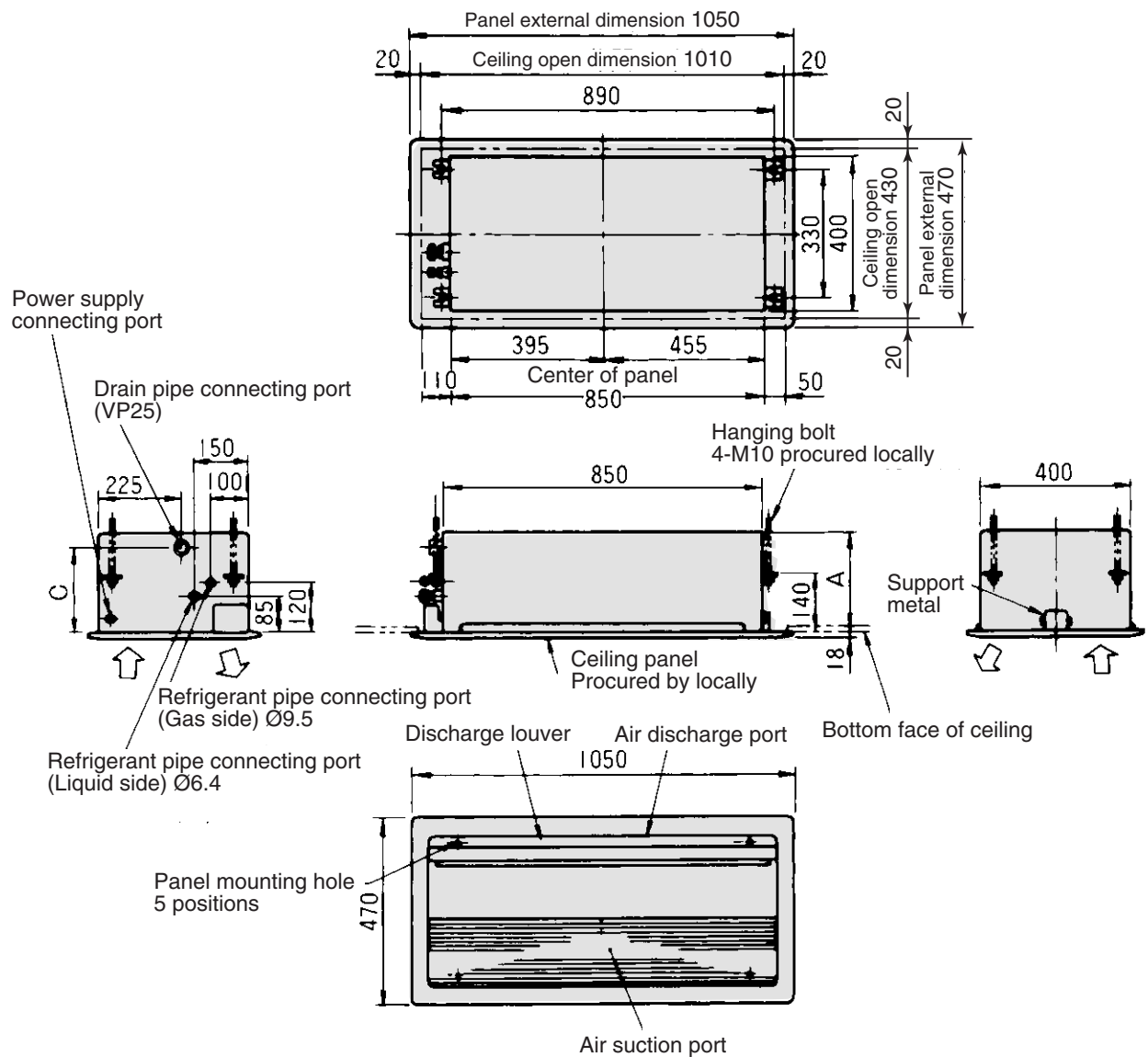


• Wired remote controller (RBC-AMT21E)



- 1-way Air Discharge Cassette Type

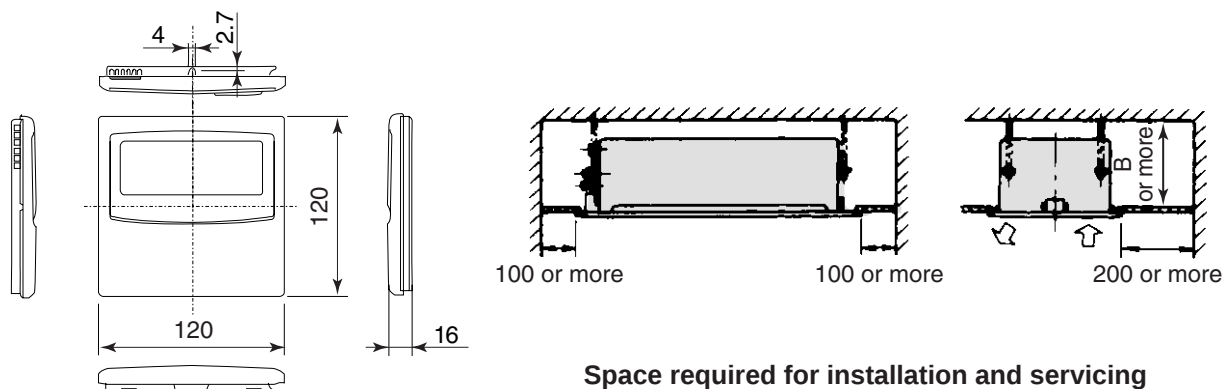
MMU-AP0071YH, AP0091YH, AP0121YH



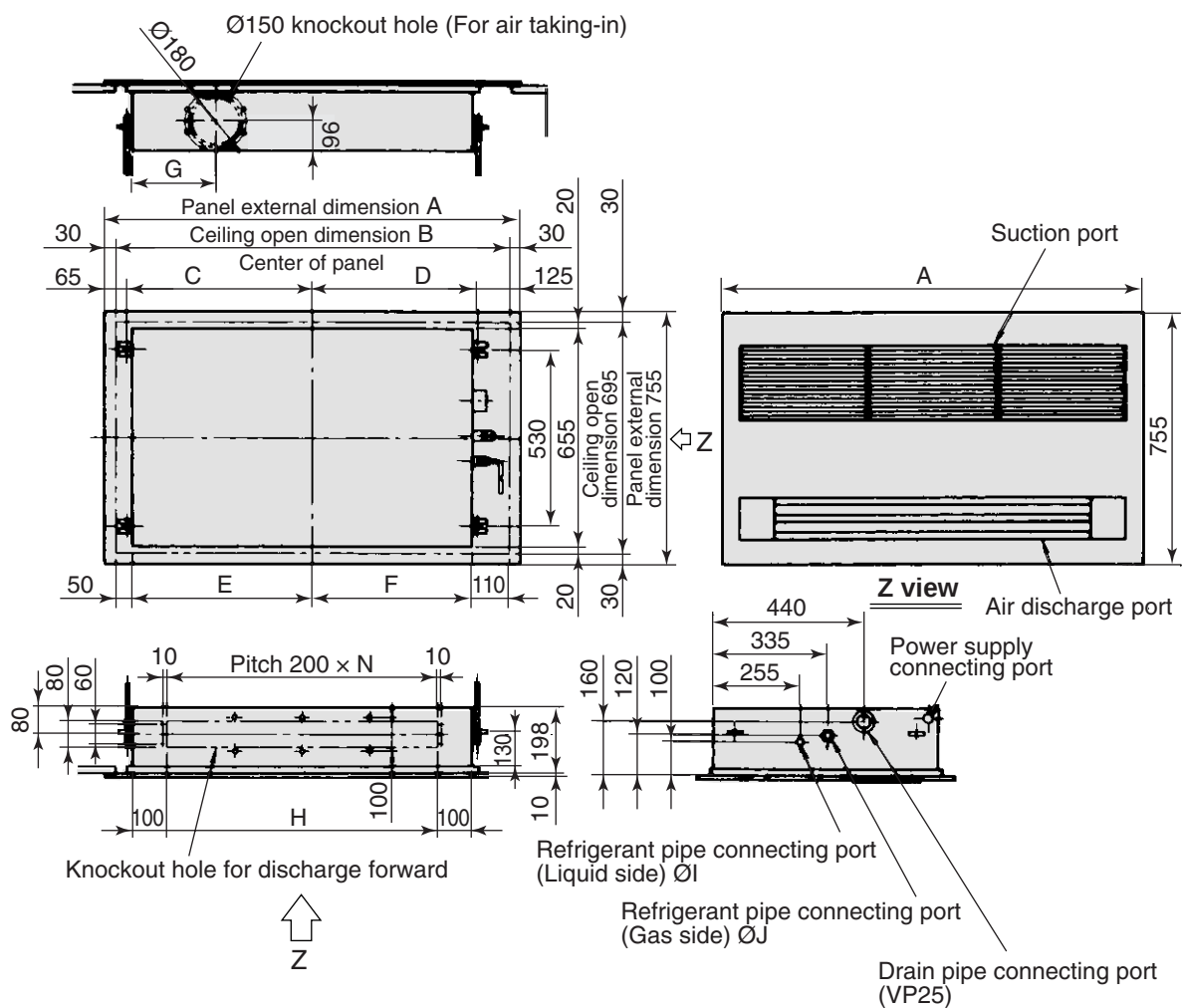
- Wired remote controller (RBC-AMT21E)

Dimensions

Model	MMU-	A	B	C
AP0071YH, AP0091YH, AP0121YH		235	245	200



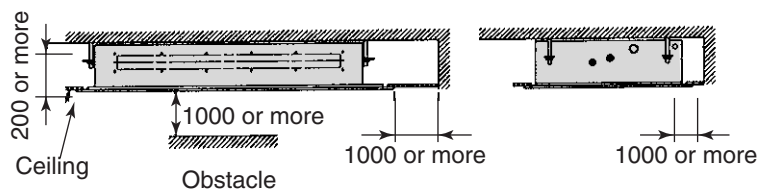
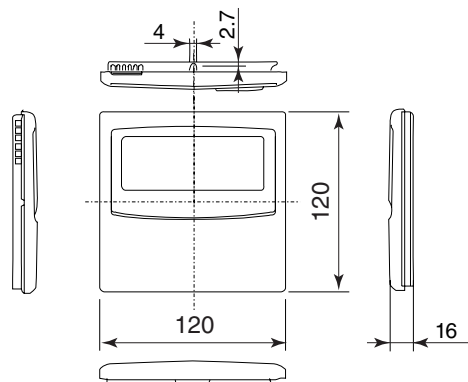
MMU-AP0151SH, AP0181SH, AP0241SH



Dimensions

Model MMU-	A	B	C	D	E	F	G	H	I	J	N
AP0151SH,AP0181SH	1220	1160	545	485	530	470	254	800	6.4	12.7	4
AP0241SH	1420	1360	645	585	630	570	460	1000	9.5	15.9	5

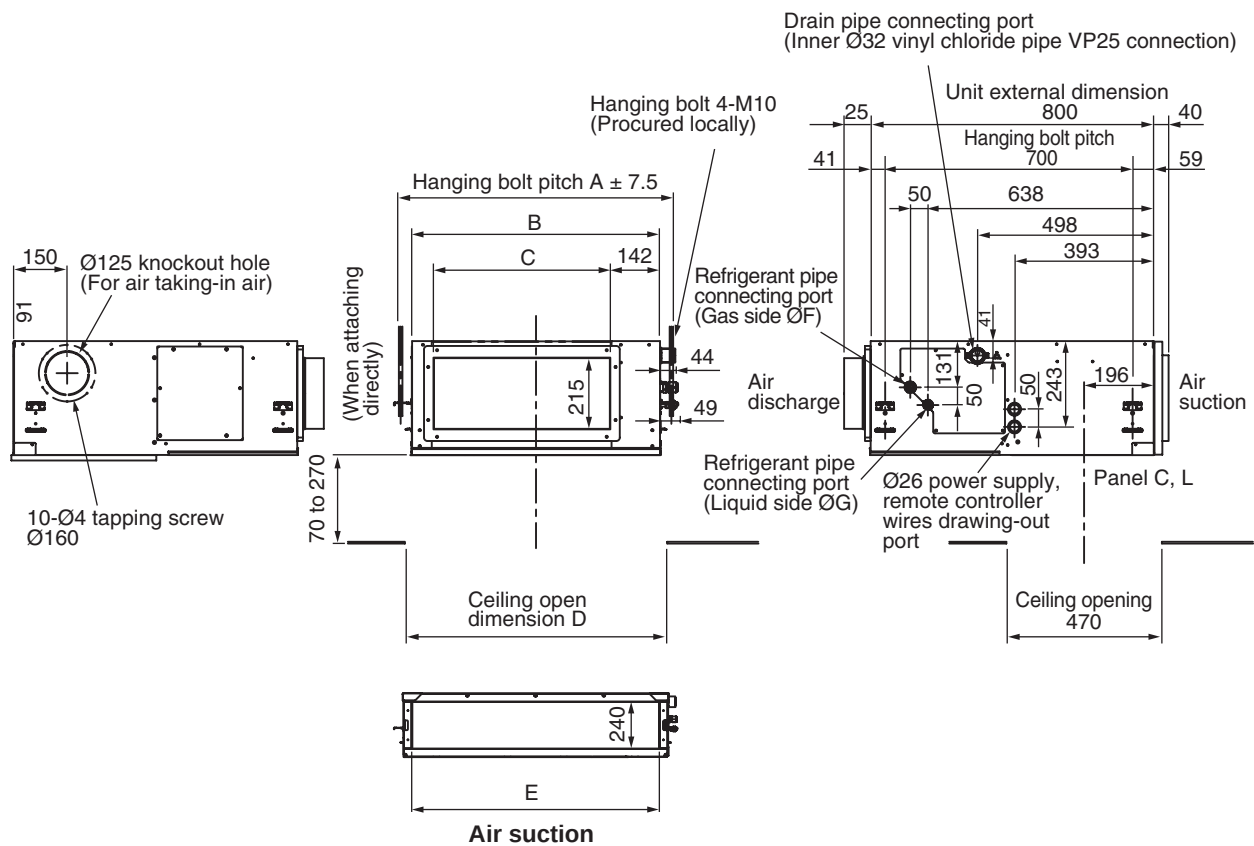
- **Wired remote controller (RBC-AMT21E)**



Space required for installation and servicing

• Concealed Duct Standard Type

MMD-AP0071BH, AP0091BH, AP0121BH, AP0151BH, AP0181BH, AP0241BH, AP0271BH, AP0301BH, AP0361BH, AP0481BH, AP0561BH



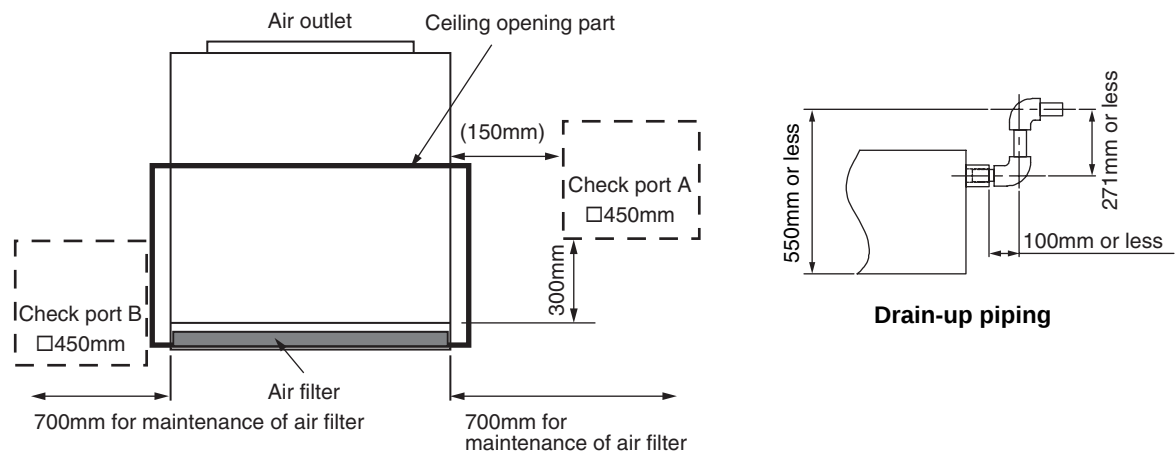
Model	MMD-	A	B	C	D	D	E	F	G
AP0071BH, AP0091BH, AP0121BH		616	550	350	600	600	470	9.5	6.4
AP0151BH, AP0181BH		766	700	500	750	750	620	12.7	9.4
AP0241BH, AP0271BH, AP0301BH		1066	1000	800	1050	1050	920	15.9	9.5
AP0361BH, AP0481BH, AP0561BH		1416	1350	1150	1400	1400	1270	15.9	9.5

(Note)

Two of high efficiency filter and deodorant filter cannot be applied.

(Note)

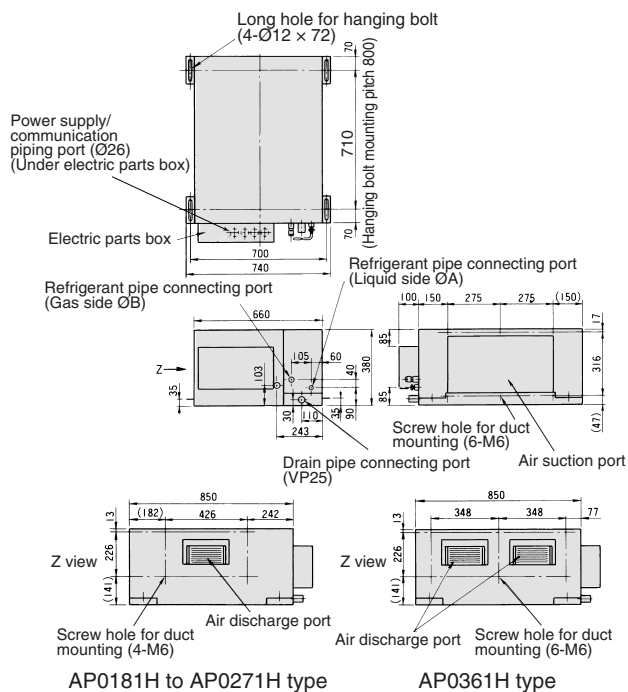
Be sure to place a check port A at the position indicated in the following figure for maintenance of the equipment.



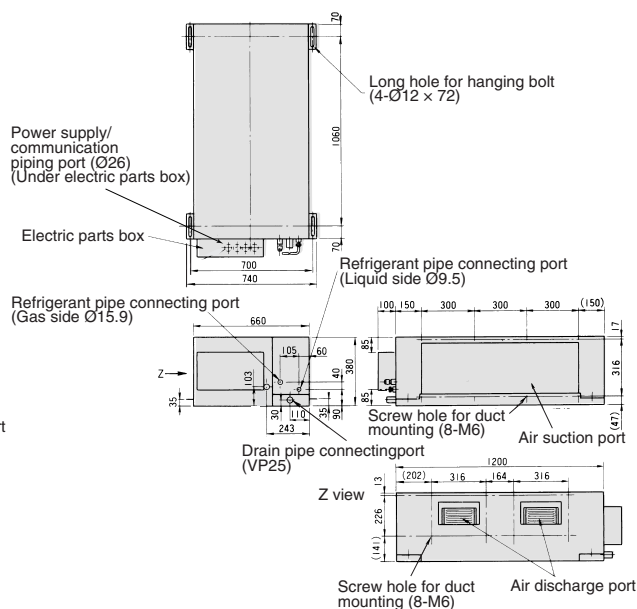
• Concealed Duct High Static Pressure Type

MMD-AP0181H, AP0241H, AP0271H, AP0361H, AP0481H, AP0721H, AP0961H

MMD-AP0181H to AP0361H

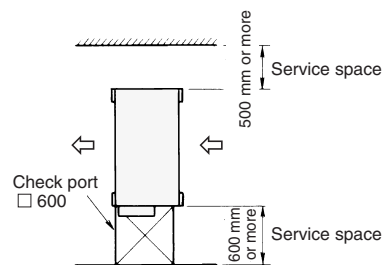


MMD-AP0481H



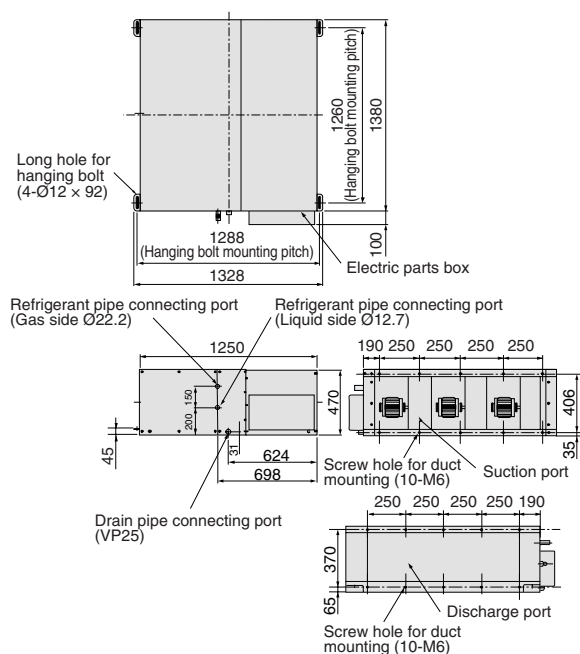
Model	MMD-	A	B
AP0181H		6.4	12.7
AP0241H, AP0271H, AP0361H, AP0481H		9.5	15.9

Space required for installation and servicing *1

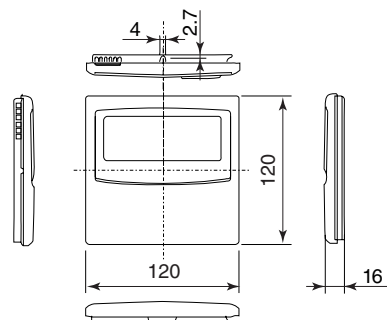


*1 Service spaces for MMD-AP0721H and AP0961H are different from those in the above figure. For inquiries please contact us separately.

MMD-AP0721H, AP0961H

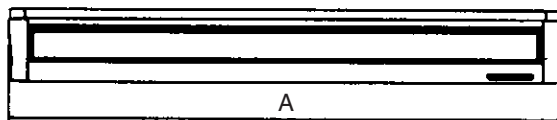
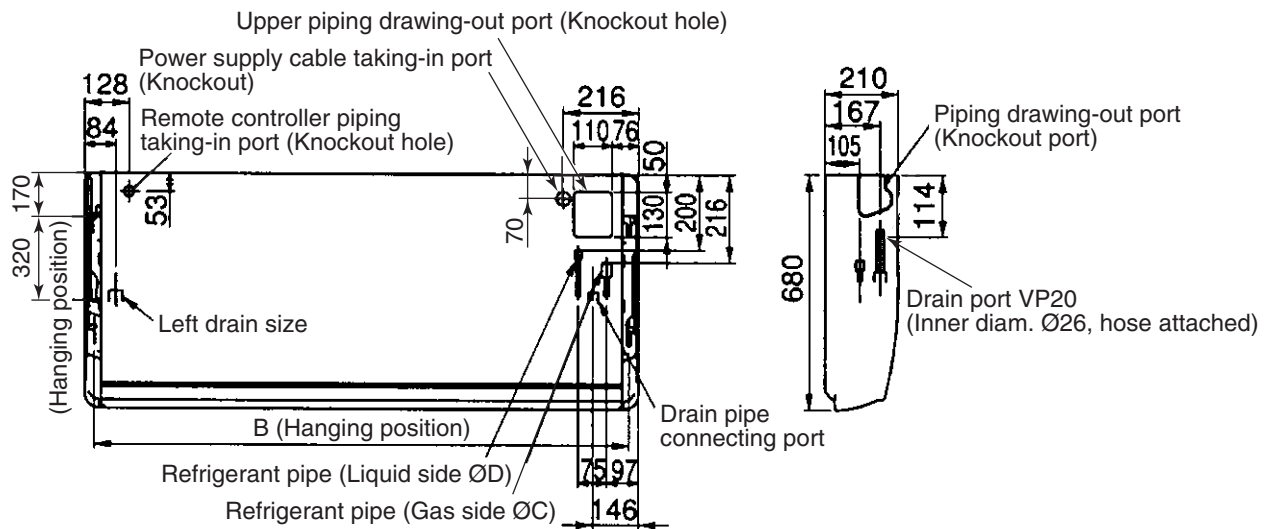


• Wired remote controller (RBC-AMT21E)

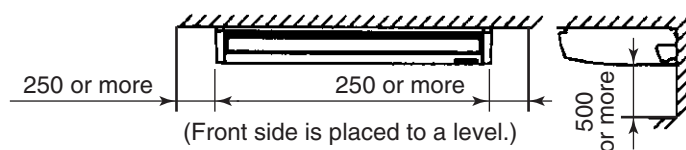
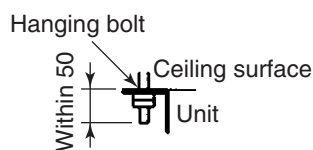
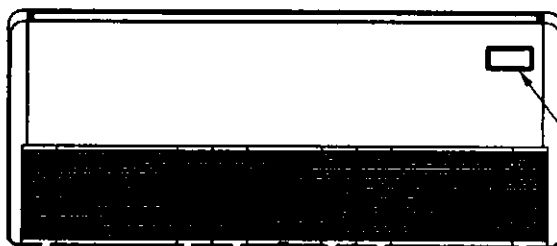


• Under Ceiling Type

MMC-AP0151H, AP0181H, AP0241H, AP0271H, AP0361H, AP0481H

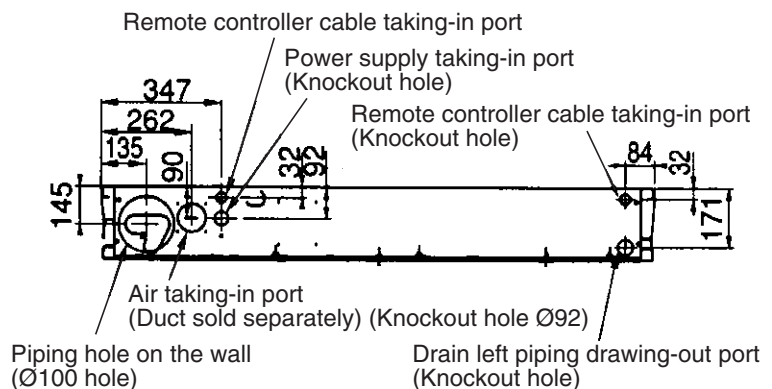
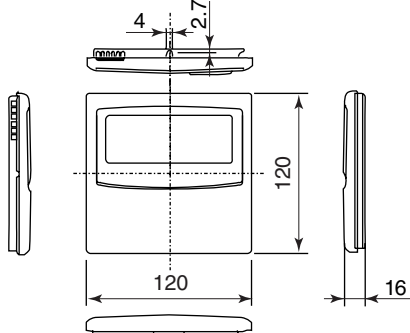


Model	MMC-	A	B	C	D
AP0151H, AP0181H		910	855	12.7	6.4
AP0241H to AP0271H		1180	1125	15.9	9.5
AP0361H, AP0481H		1595	1540	15.9	9.5



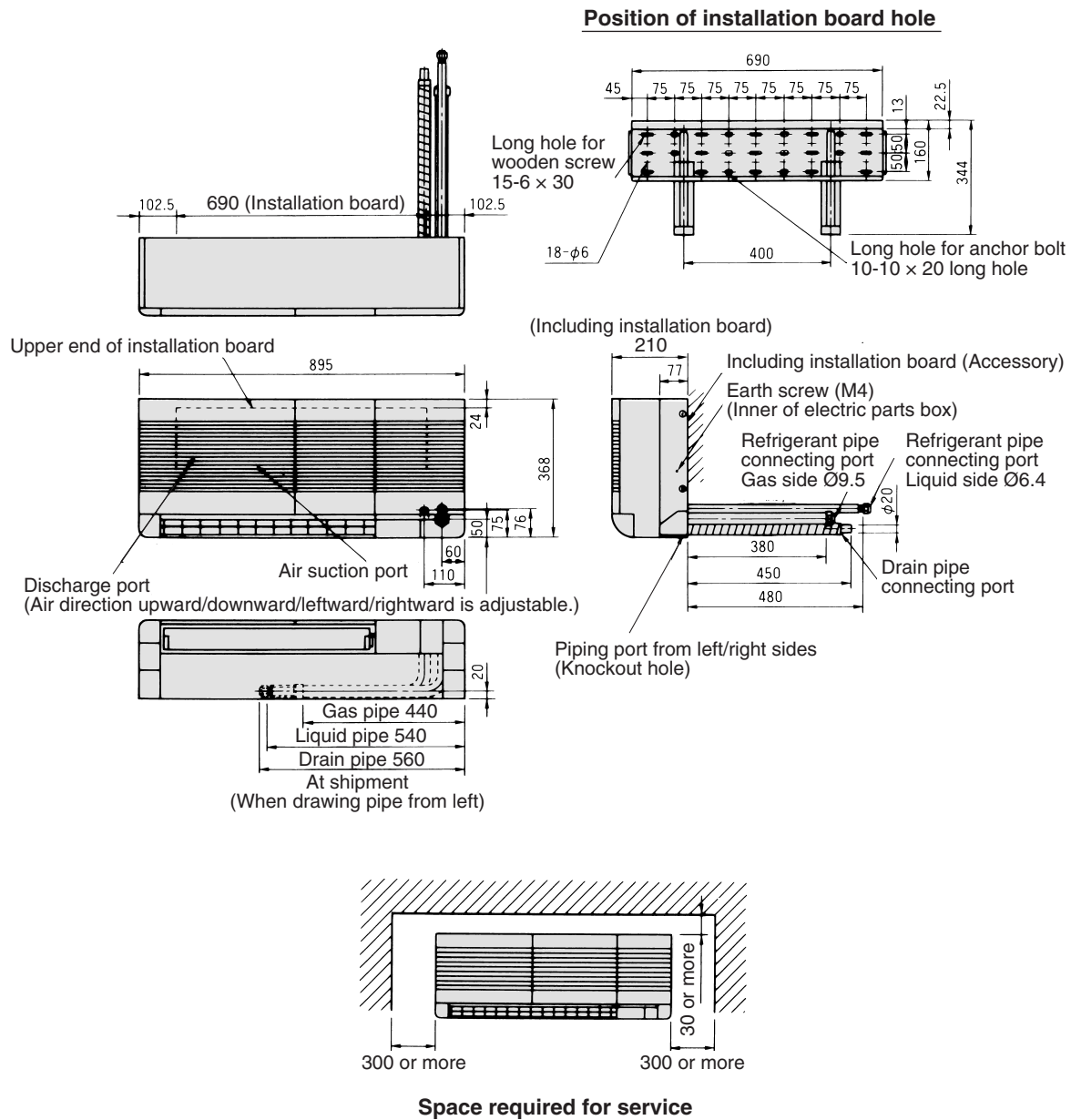
Space required for installation and servicing

• Wired remote controller (RBC-AMT21E)

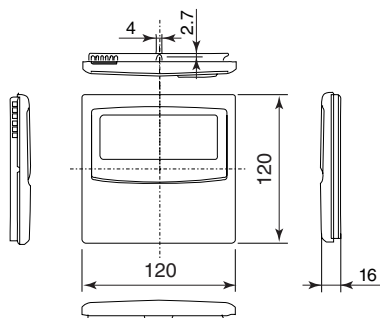


- High Wall Type

MMK-AP0071H, AP0091H, AP0121H

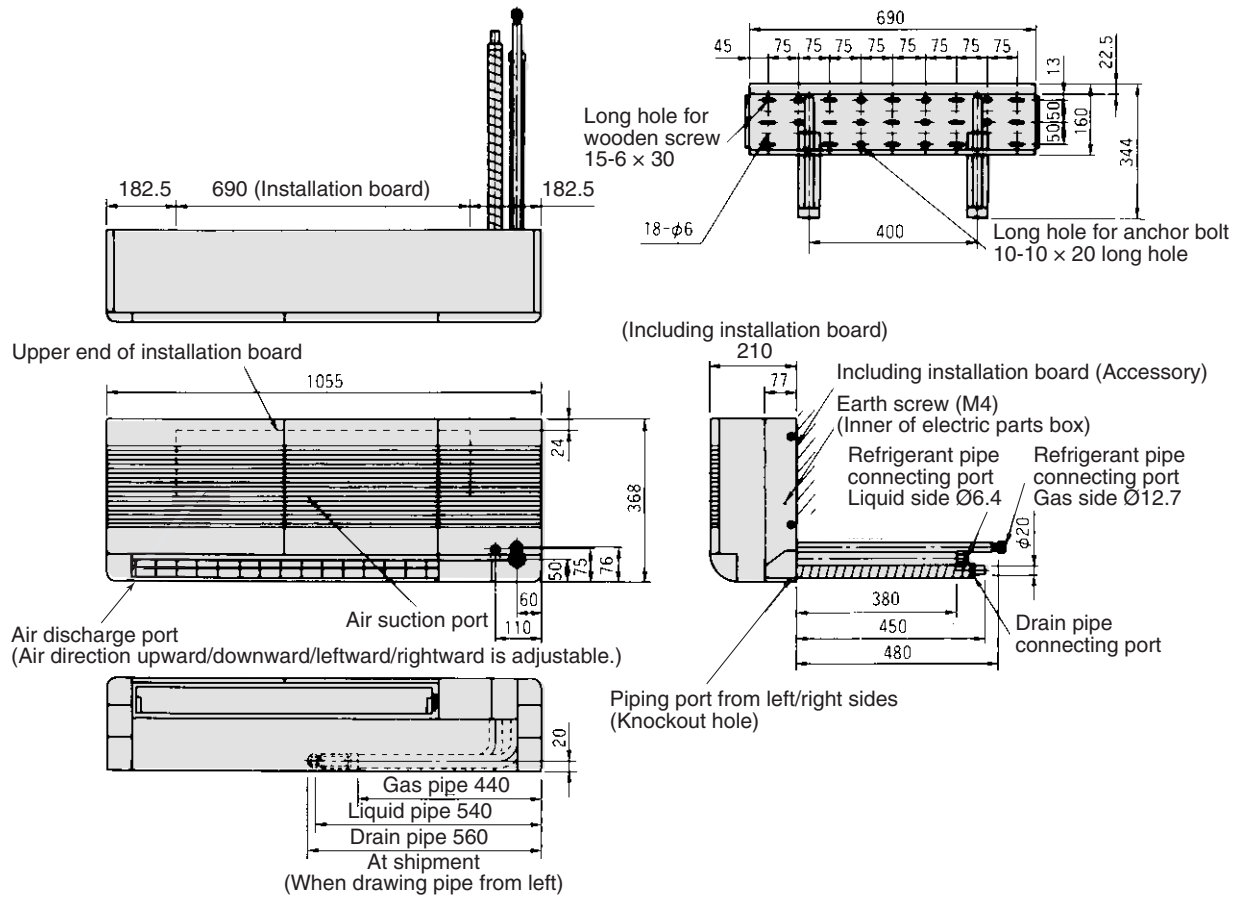


- Wired remote controller (RBC-AMT21E)



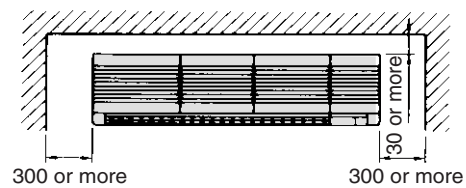
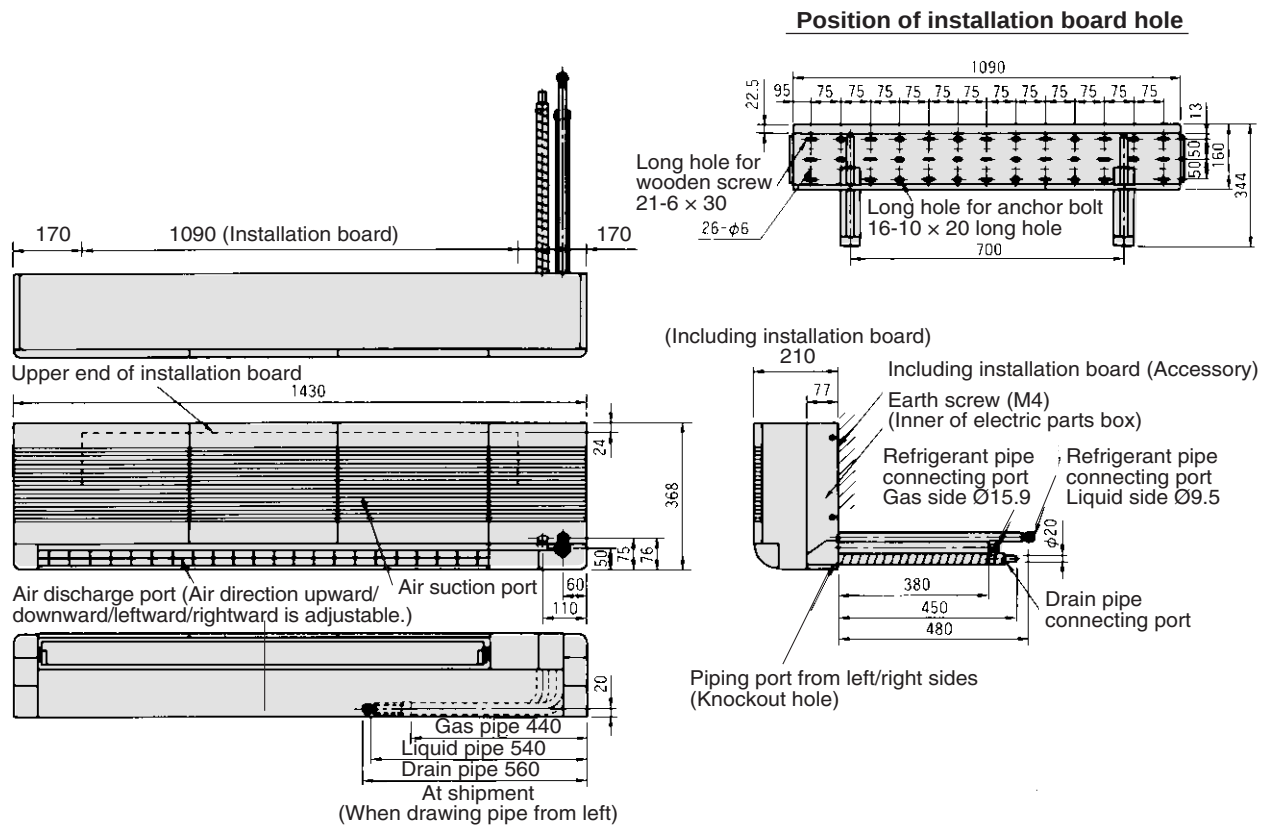
MMK-AP0151H, AP0181H

Position of installation board hole



Space required for service

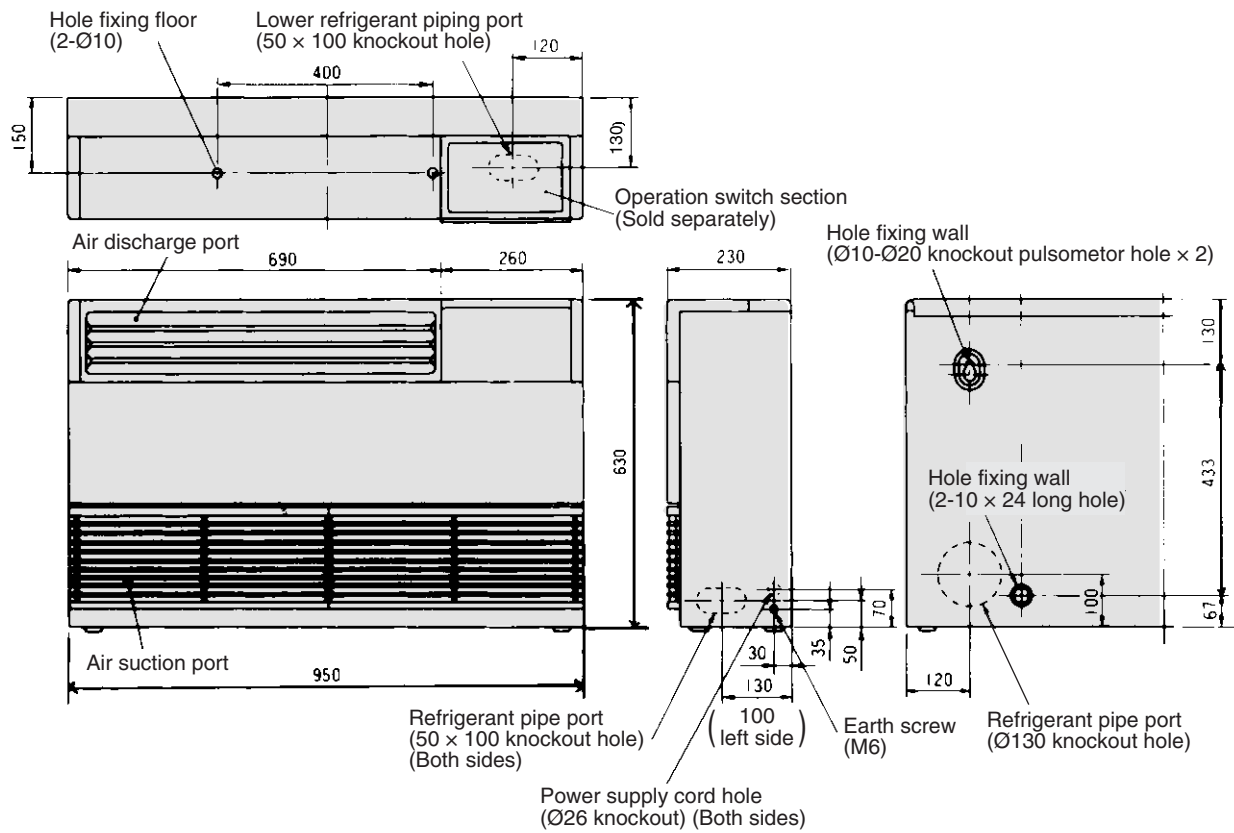
MMK-AP0241H



Space required for service

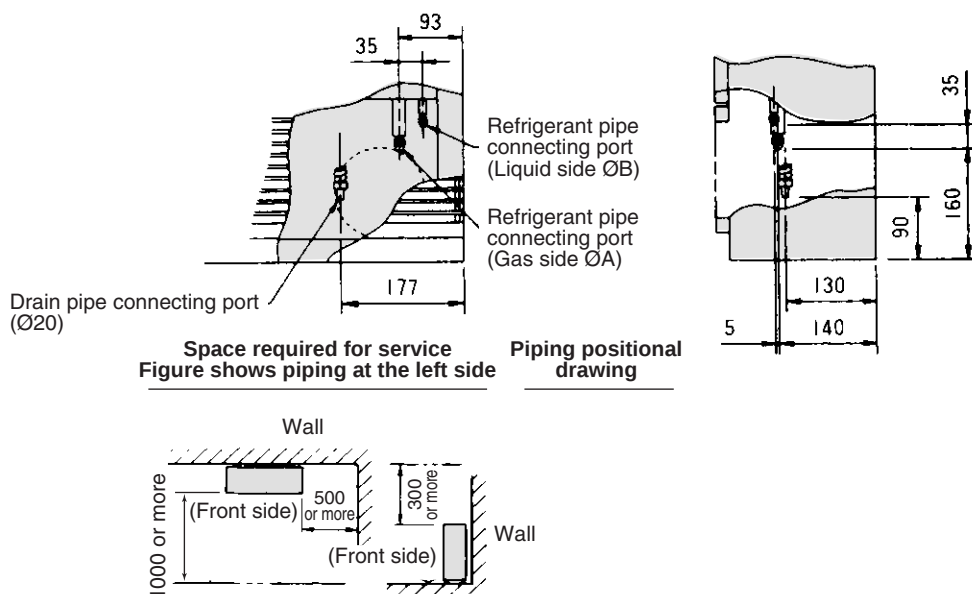
- Floor Standing Cabinet Type

MML-AP0071H, AP0091H, AP0121H, AP0151H, AP0181H, AP0241H



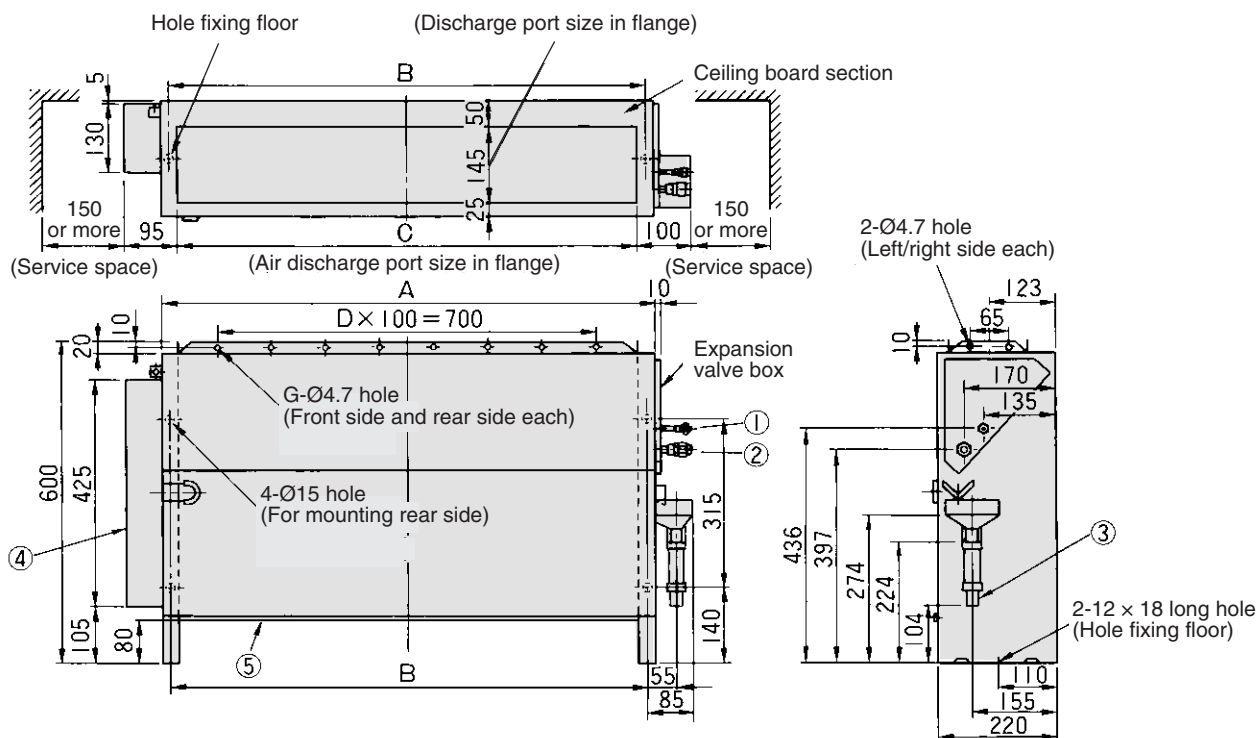
Dimensions

Model MML-	A	B
AP0071H, AP0091H, AP0121H	Ø9.5	Ø6.4
AP0151H, AP0181H	Ø12.7	Ø6.4
AP0241H	Ø15.9	Ø9.5



• Floor Standing Concealed Type

MML-AP0071BH, AP0091BH, AP0121BH, AP0151BH, AP0181BH, AP0241BH

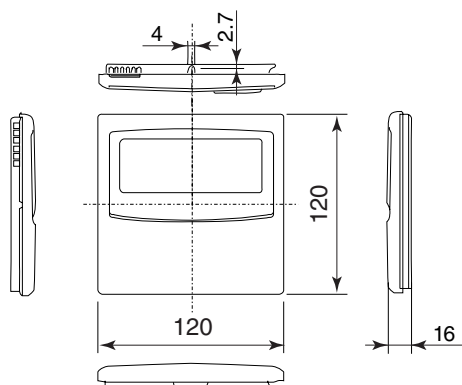


No.	Name
①	Pipe connecting port at liquid side (ØE)
②	Pipe connecting port at gas side (ØF)
③	Drain pipe connecting port (20A)
④	Electric parts box (Earth terminal is provided in inner side.)
⑤	Air filter

Dimensions

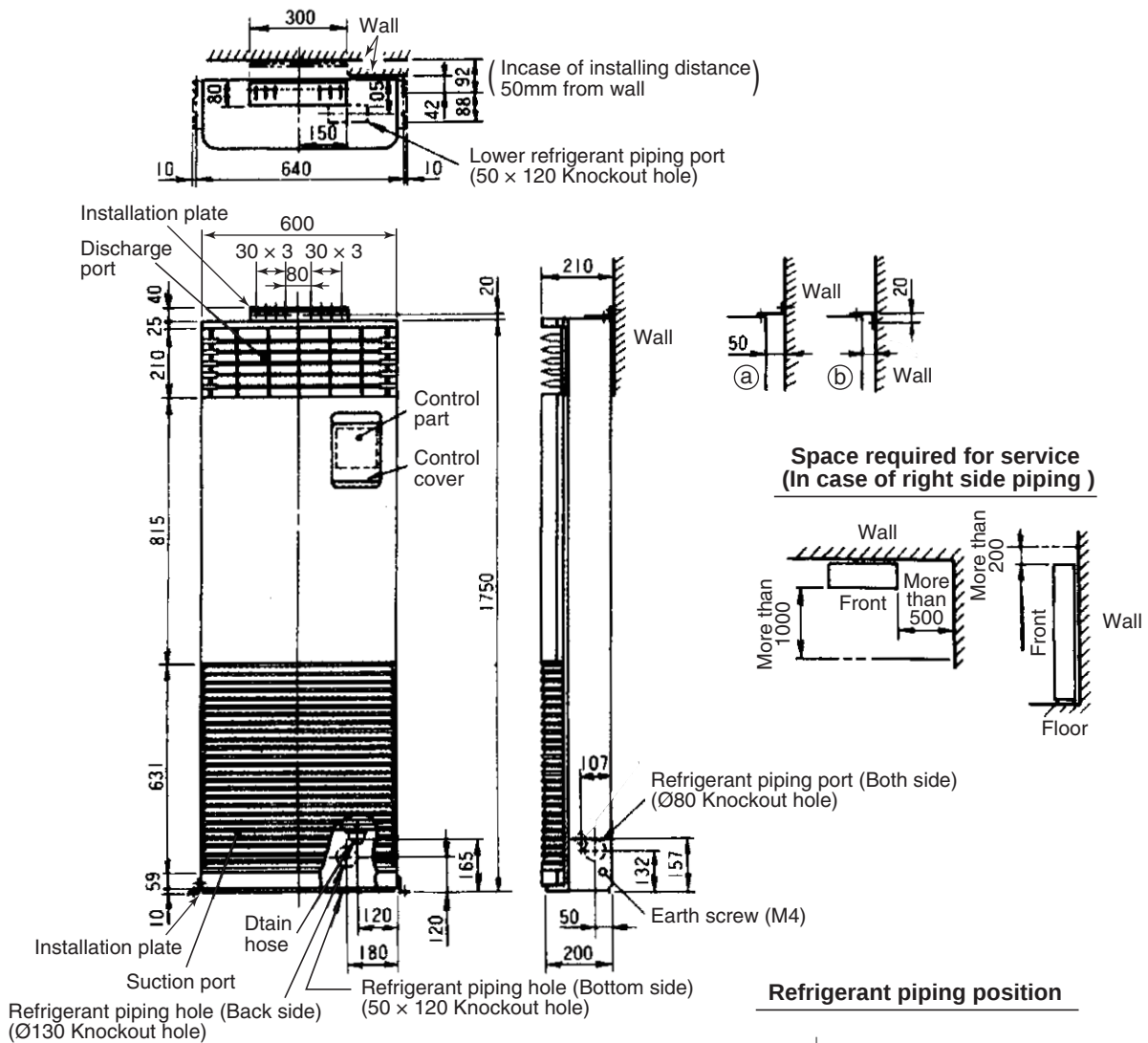
Model MML-	A	B	C	D	E	F	G
AP0071BH, AP0091BH, AP0121BH	610	580	550	4	6.4	9.5	5
AP0151BH, AP0181BH	910	880	850	7	12.7		8
AP0241BH					9.5	15.9	

• Wired remote controller (RBC-AMT21E)



• Floor Standing Type

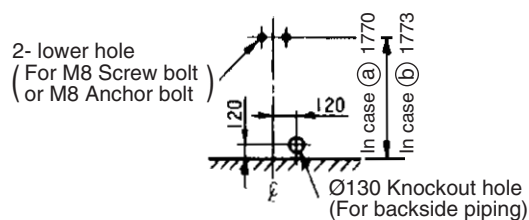
MMF-AP0151H, AP0181H, AP0241H, AP0271H



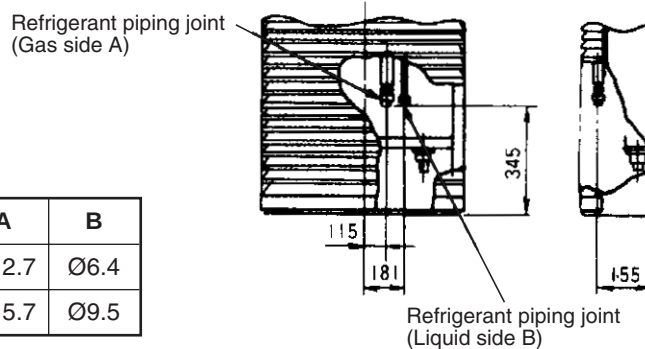
Dimensions

Model	A	B
MMF-AP0151H, AP0181H	Ø12.7	Ø6.4
MMF-AP0241H, AP0271H	Ø15.7	Ø9.5

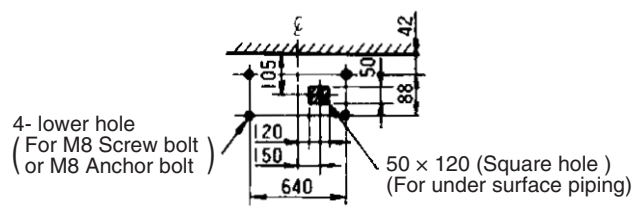
Details of hole for back side piping



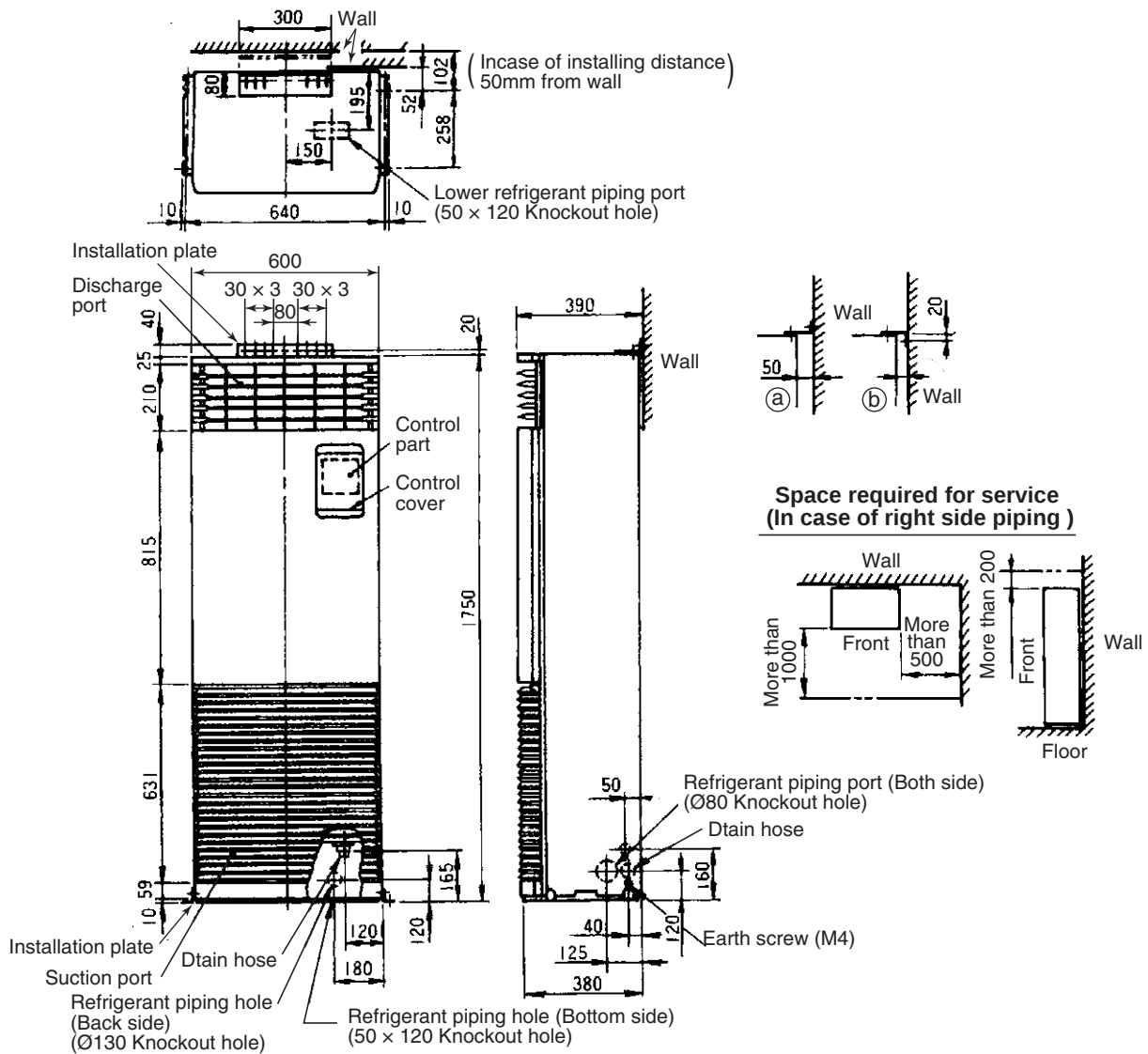
Refrigerant piping position



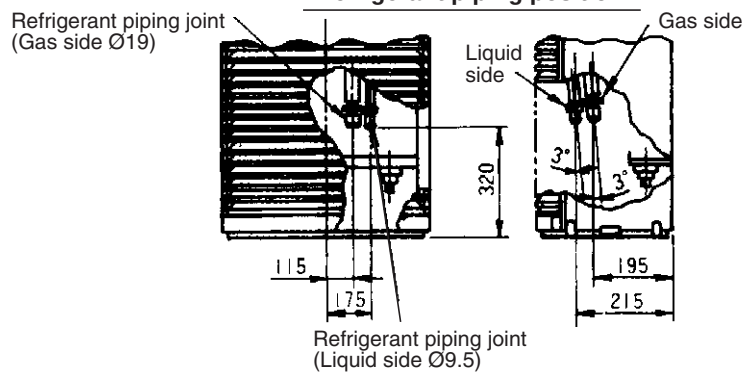
Details of hole for lower side piping



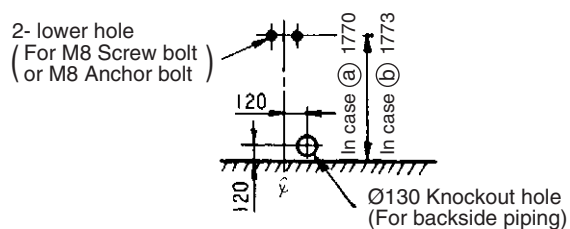
MMF-AP0361H, AP0481H, AP0561H



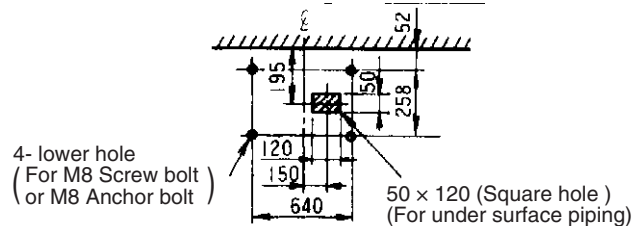
Refrigerant piping position



Details of hole for back side piping



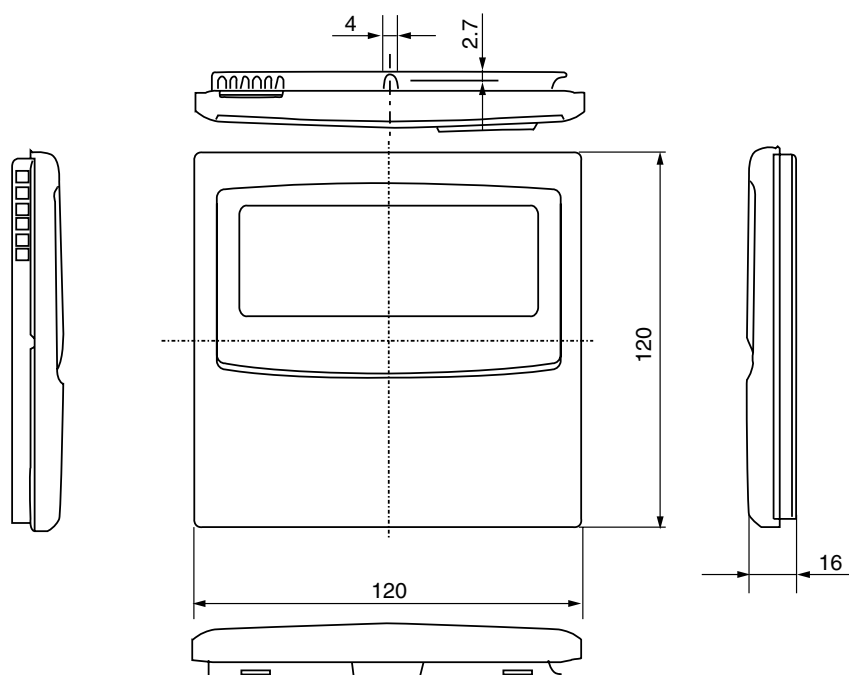
Details of hole for lower side piping



Remote controller

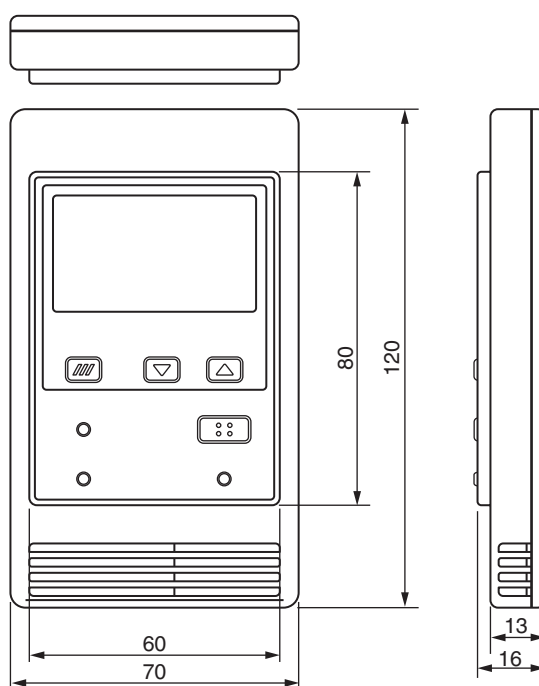
- Wired remote controller

RBC-AMT21E



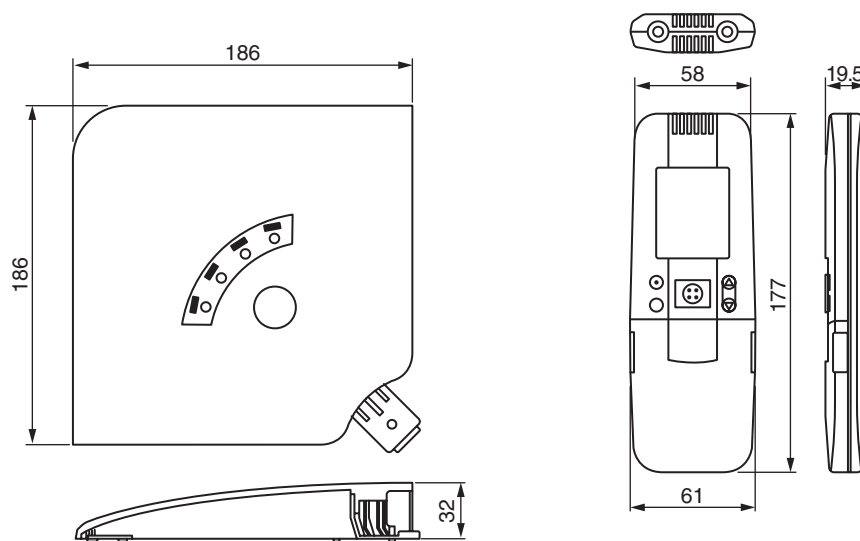
- Simple remote controller

RBC-AS21E



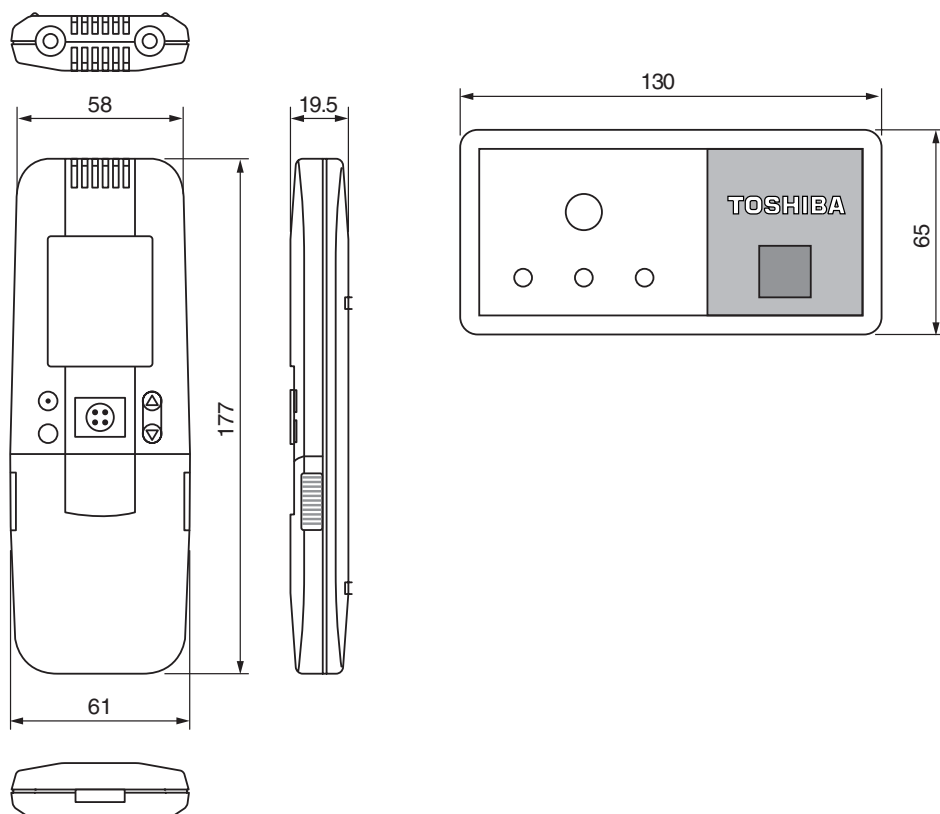
- **Wireless remote controller**

TCB-AX21U (W)-E

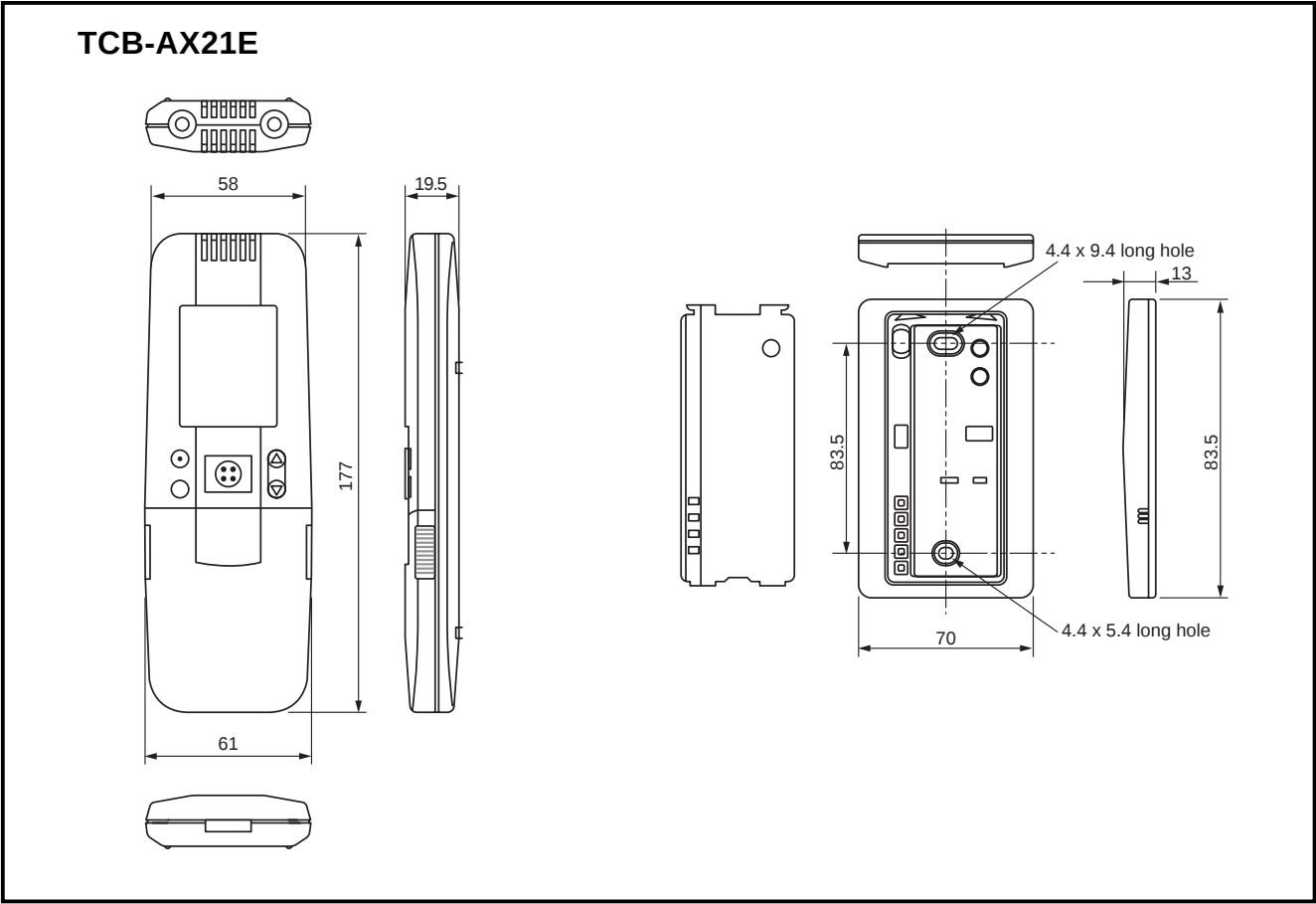


- **Wireless remote controller kit**

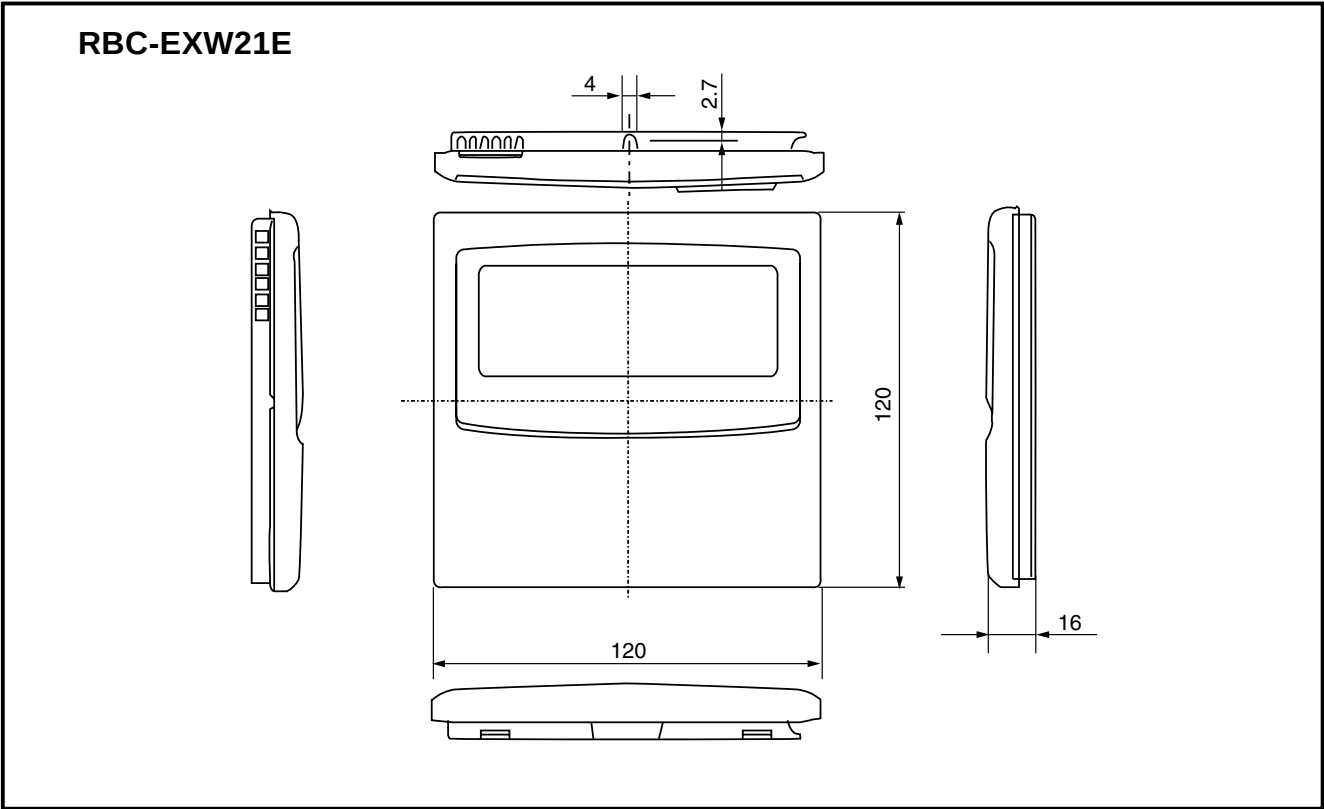
RBC-AX22CE



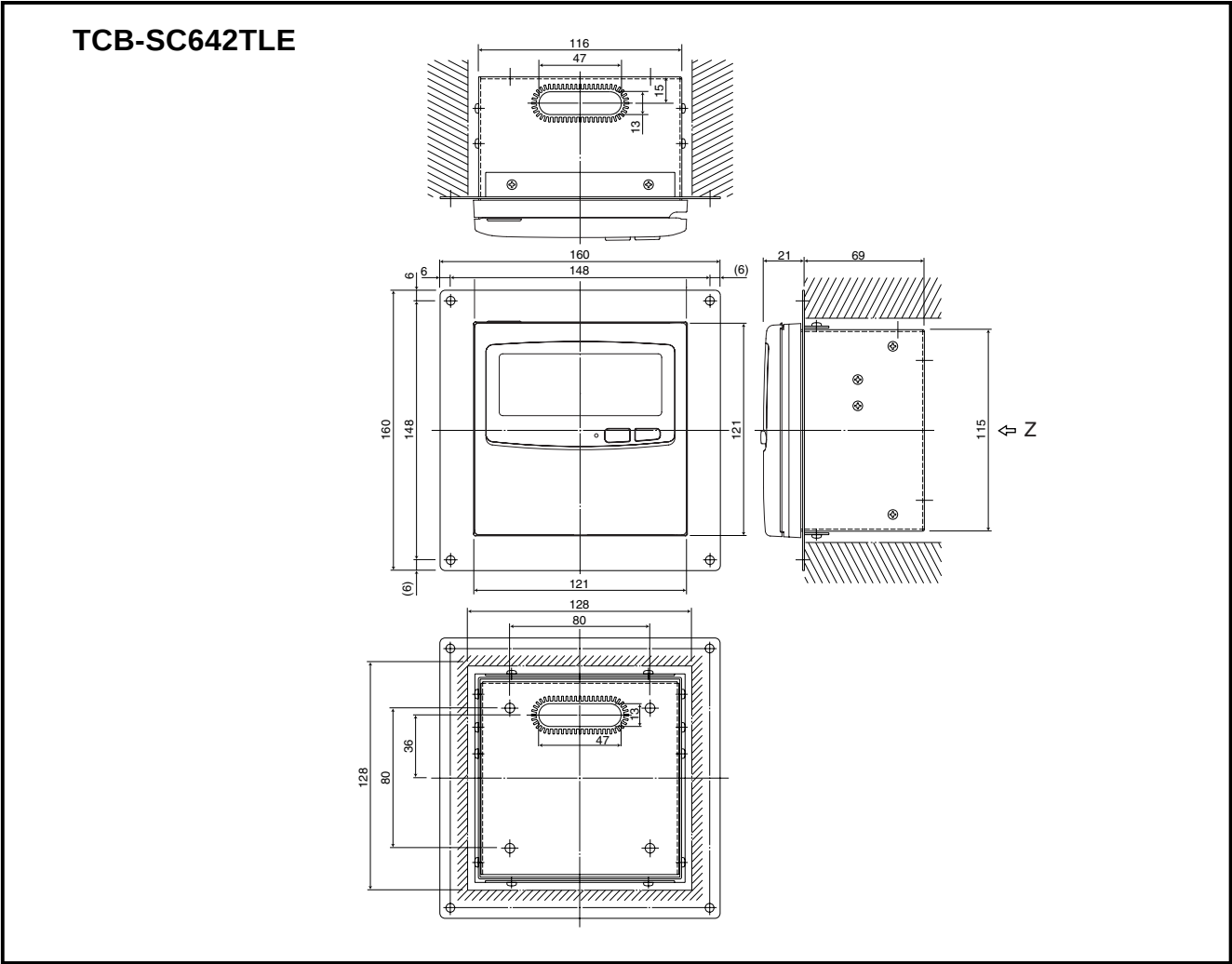
• Wireless remote controller kit



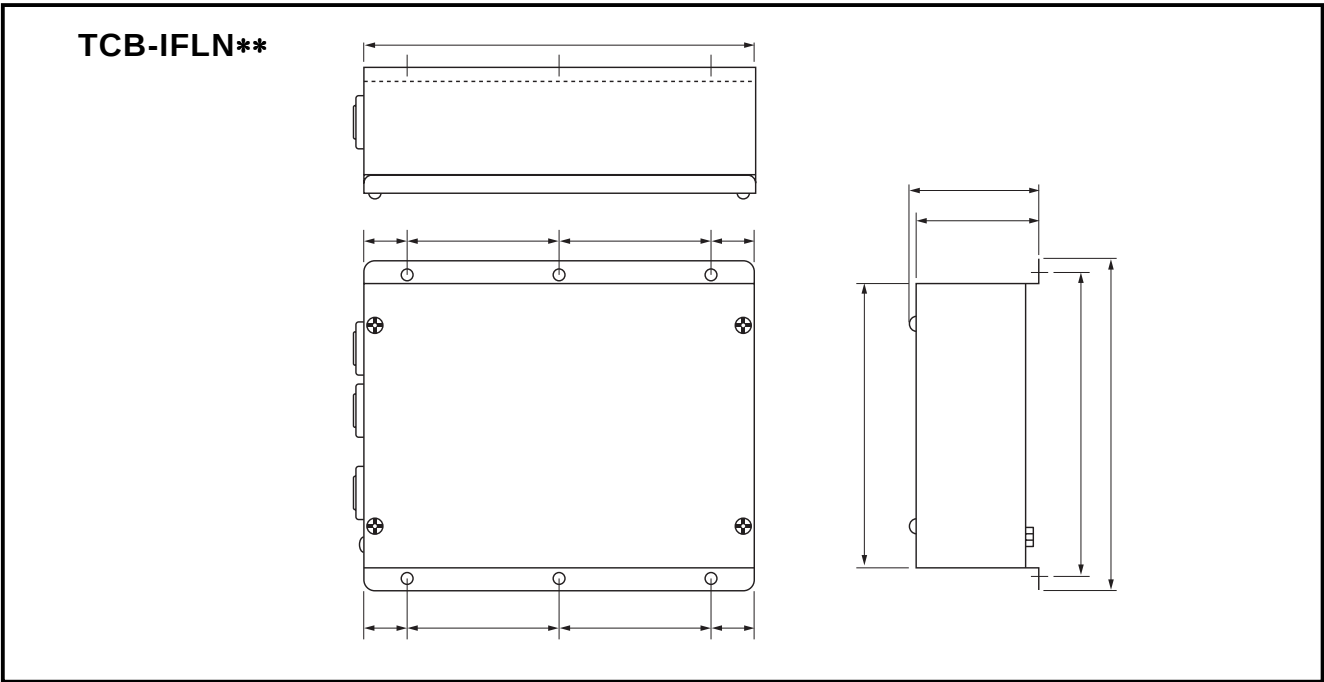
• Weekly timer



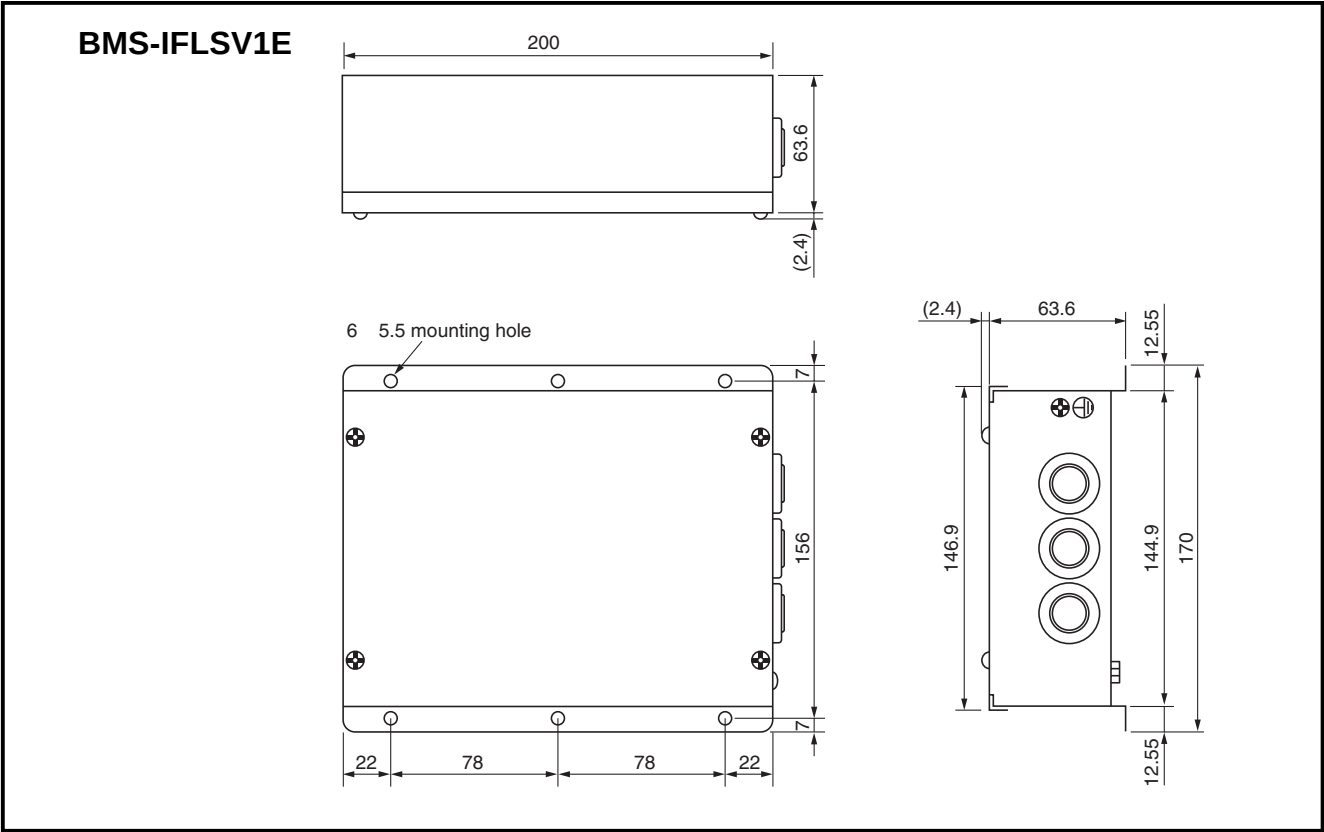
• Central remote controller



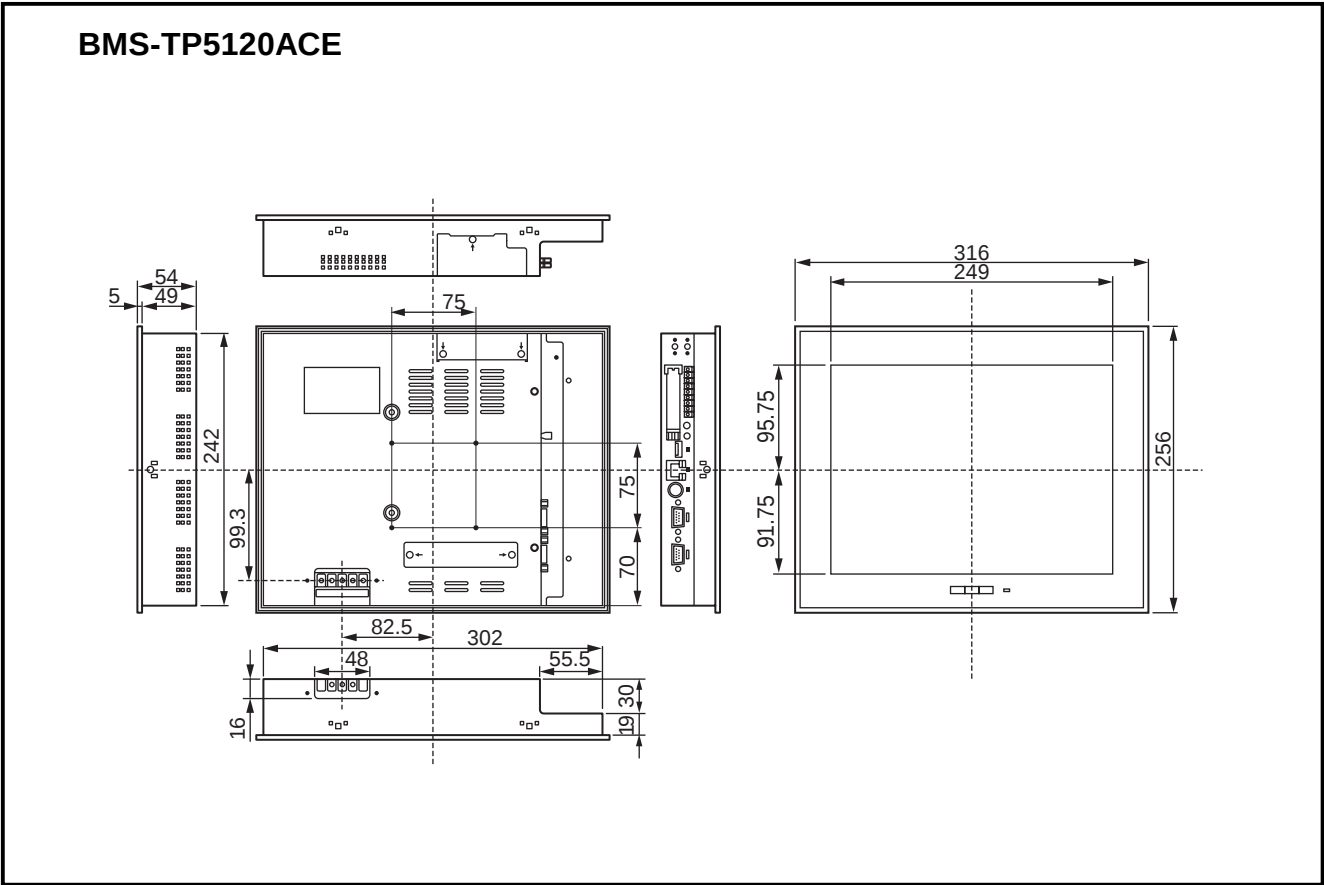
• LON Gateway



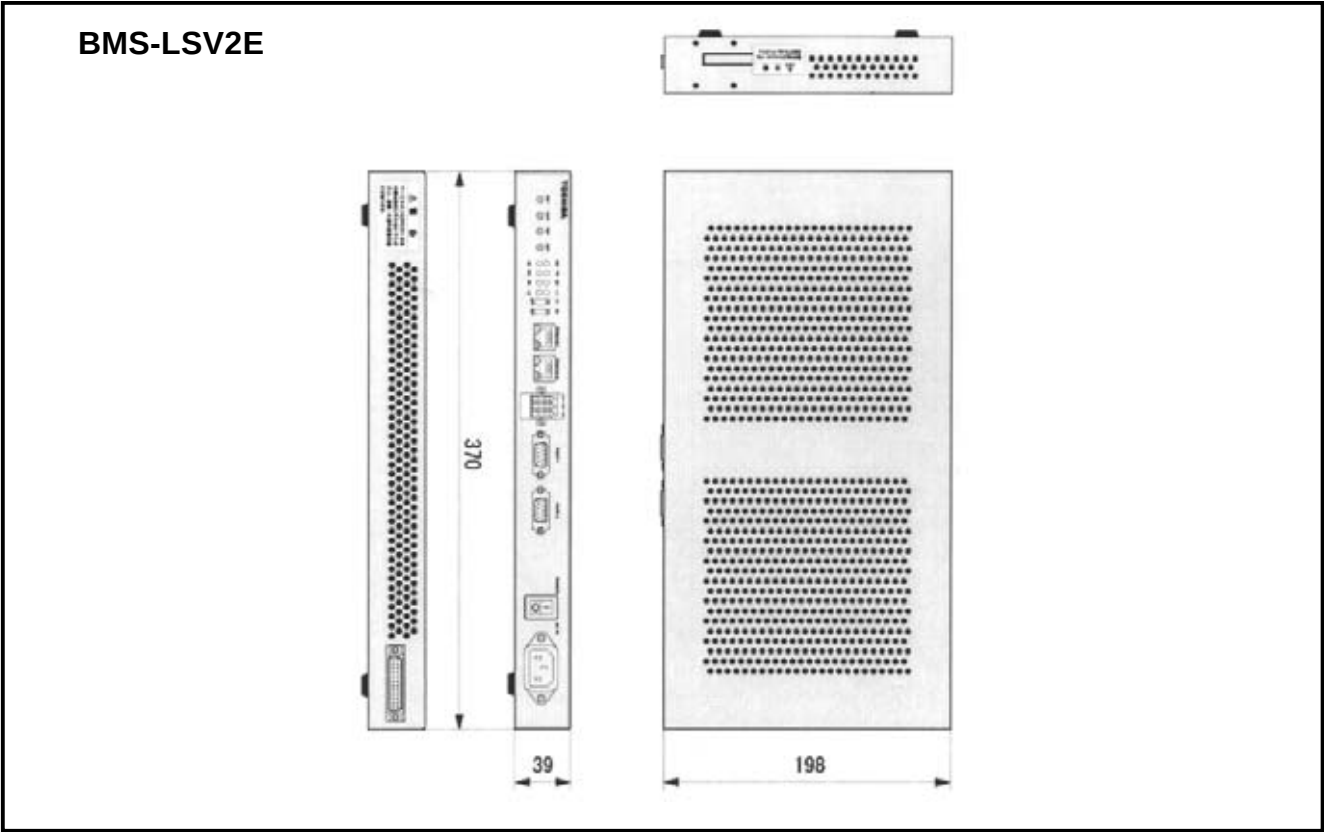
• TCS-Net relay interface



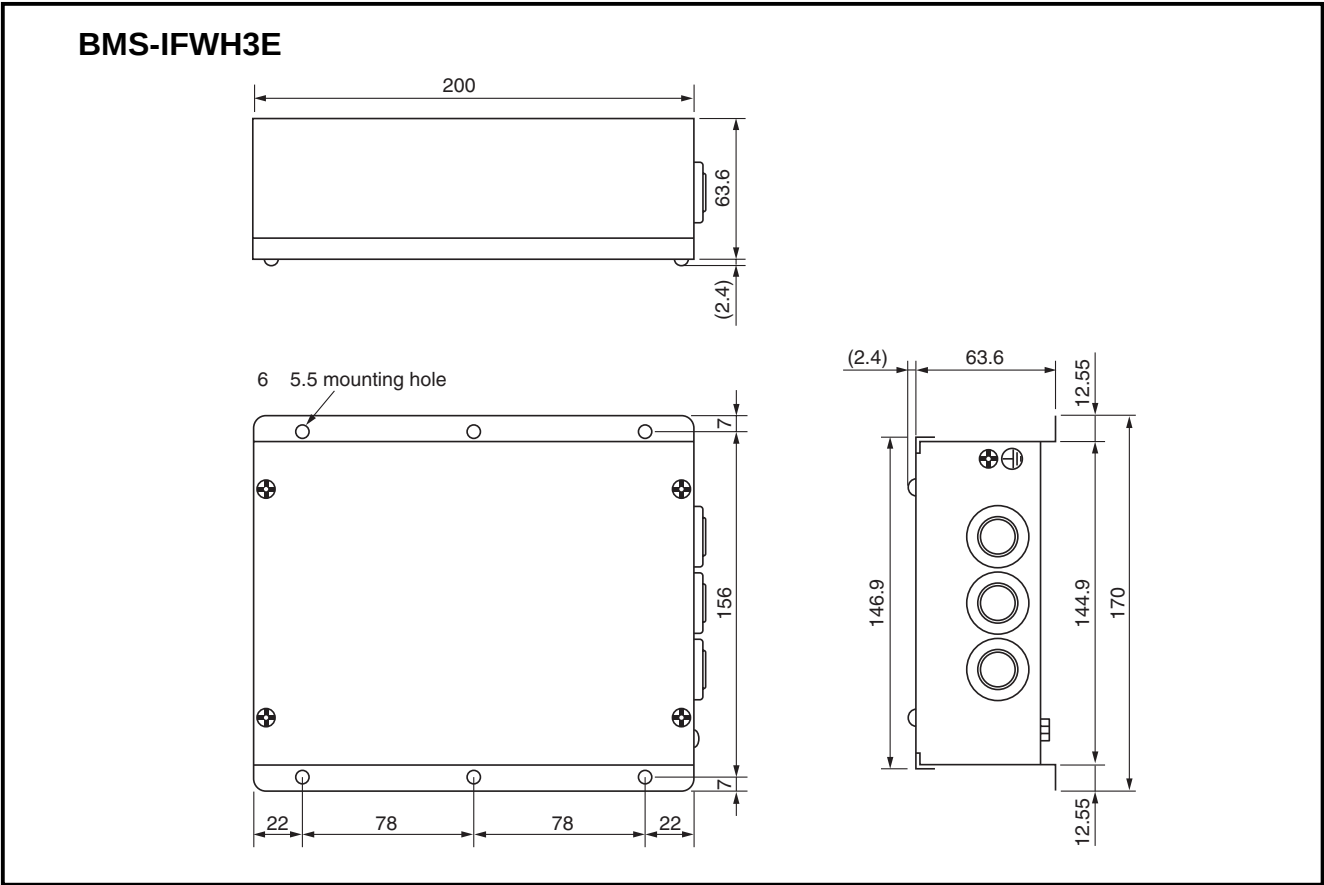
• Touch screen controller



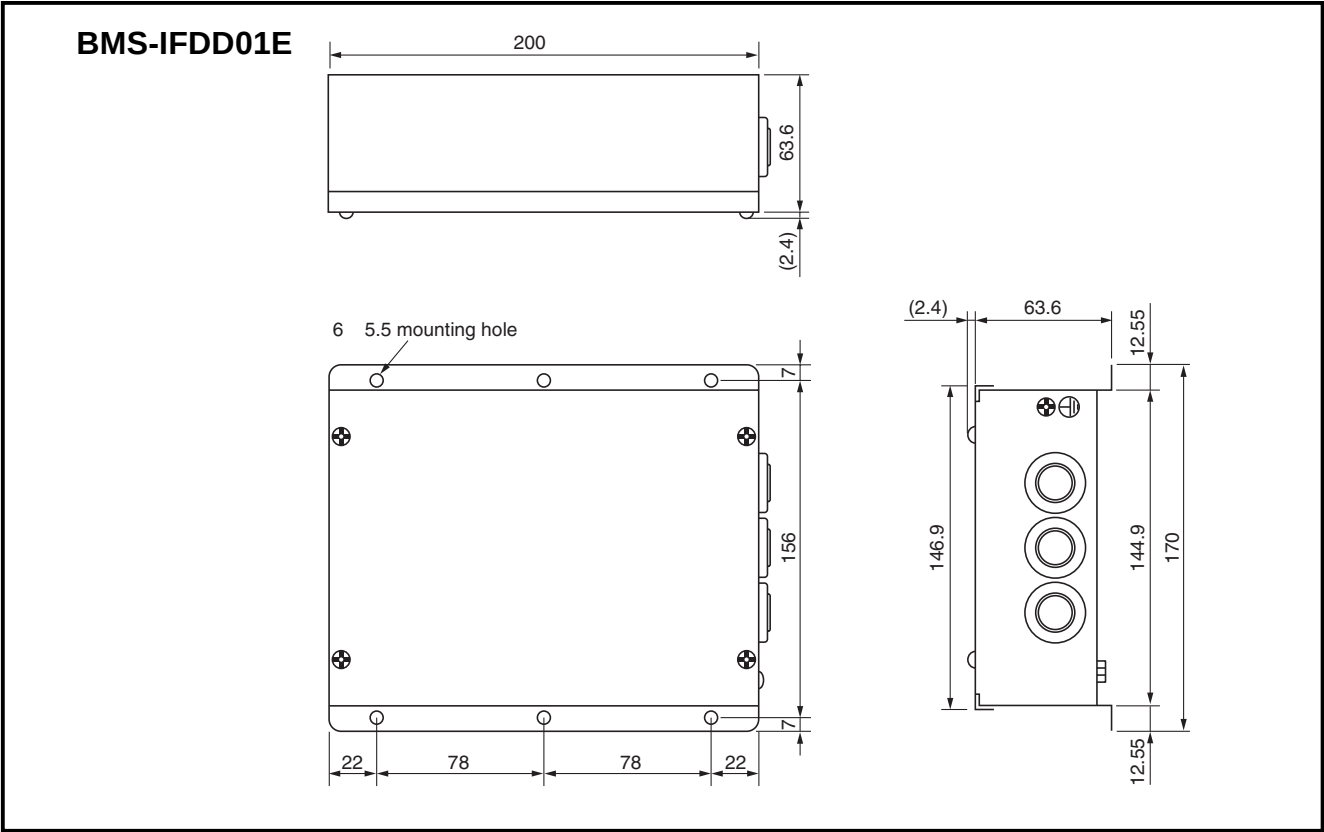
- Intelligent server



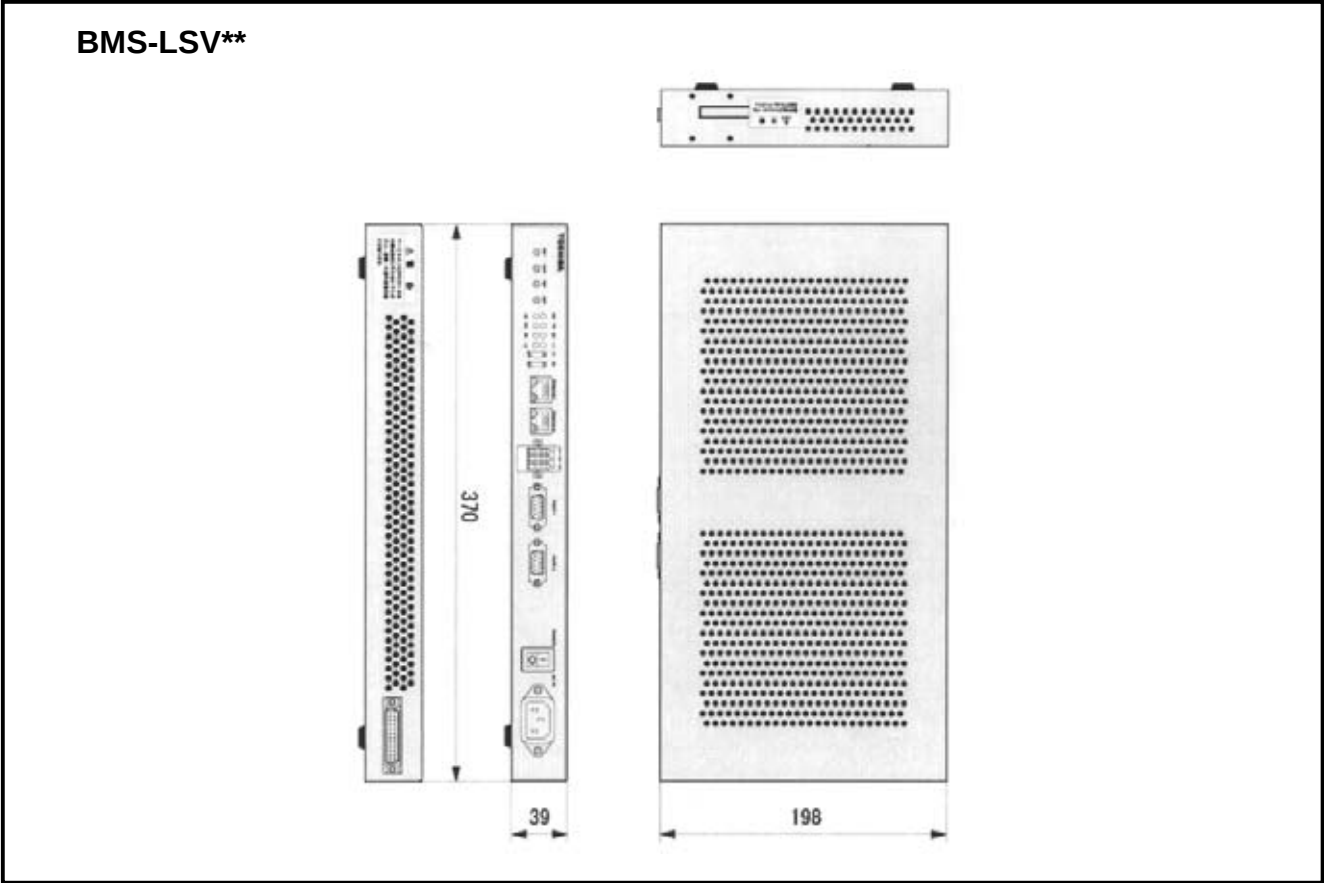
- Energy mounting relay interface



- Digital I/O relay interface

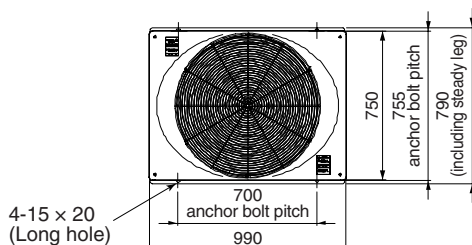


- WINDOWS based central controller



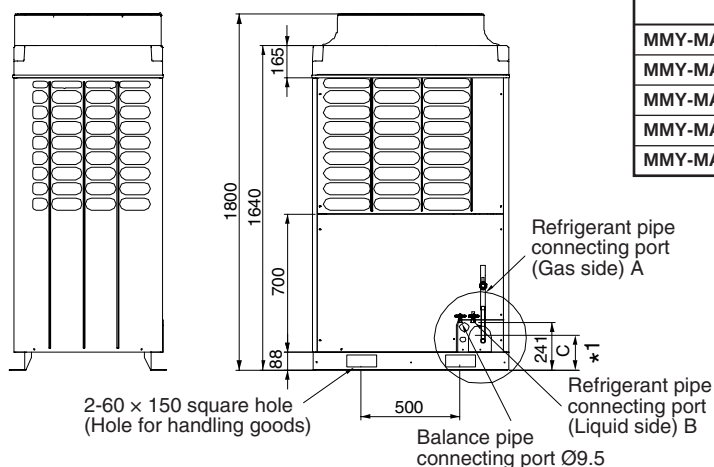
Outdoor module

MMY-MAP0501T8, MAP0601T8, MAP0801T8, MAP1001T8, MAP1201T8
MMY-MAP0501HT8, MAP0601HT8, MAP0801HT8, MAP1001HT8, MAP1201HT8
MMY-MAP0501HT7, MAP0601HT7, MAP0801HT7, MAP1001HT7, MAP1201HT7



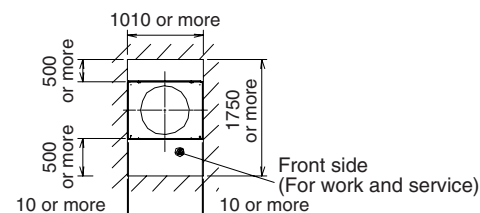
(NOTES)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.

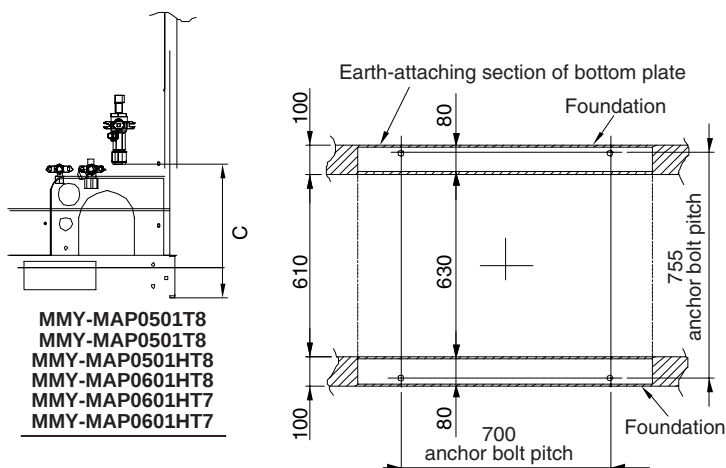
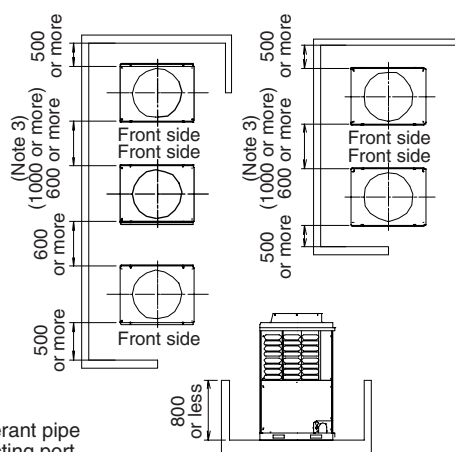


Applied model	A	B	C
MMY-MAP0501T8, MAP0501HT8, MAP0501HT7	Ø15.9	Ø9.5	280
MMY-MAP0601T8, MAP0601HT8, MAP0601HT7	Ø19.1	Ø9.5	280
MMY-MAP0801T8, MAP0801HT8, MAP0801HT7	Ø22.2	Ø12.7 (205)	
MMY-MAP1001T8, MAP1001HT8, MAP1001HT7	Ø22.2	Ø12.7 (205)	
MMY-MAP1201T8, MAP1201HT8, MAP1201HT7	Ø28.6	Ø12.7 (205)	

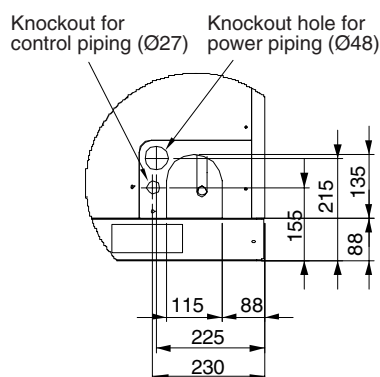
*1 Cutting position of L-shape pipe when pipe at gas side is connected
 (Recommended pipe connecting position)



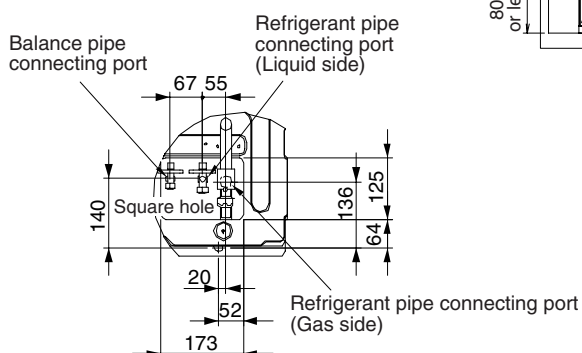
Space required for service



MMY-MAP0501T8
 MMY-MAP0501HT8
 MMY-MAP0601T8
 MMY-MAP0601HT8
 MMY-MAP0601HT7



Details of front pipe/cabling holes



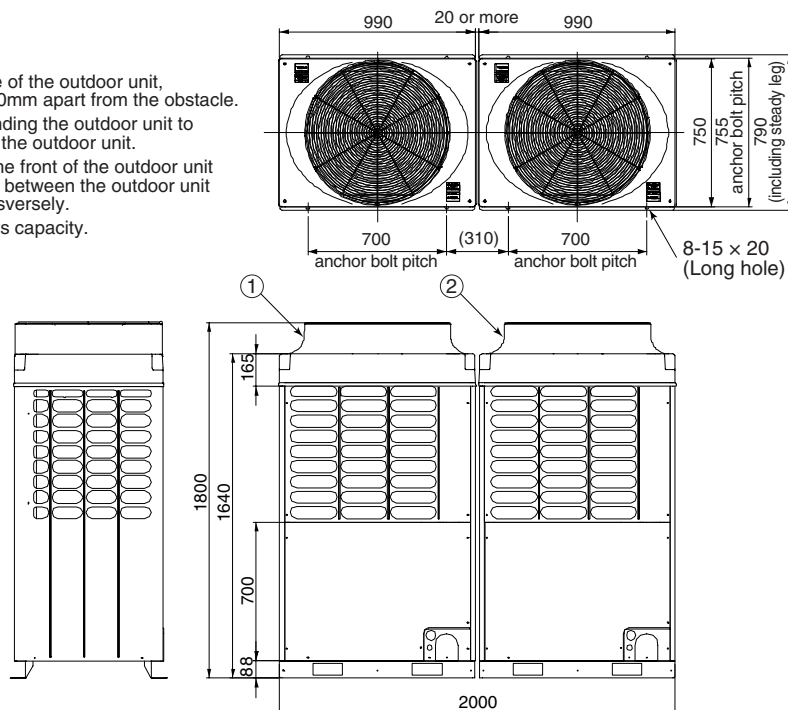
Details of hole for piping at lower side (Plane view)

<Two units connected>

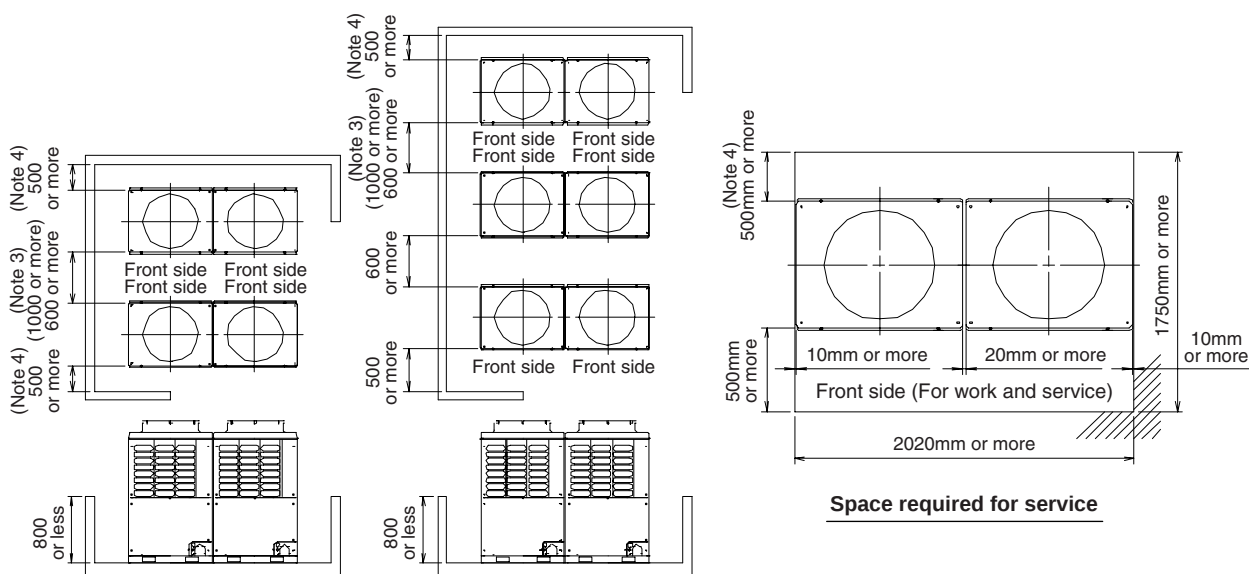
MMY-AP1401T8, AP1601T8, AP1801T8, AP2001T8, AP2211T8, AP2411T8
 MMY-AP1401HT8, AP1601HT8, AP1801HT8, AP2001HT8, AP2211HT8, AP2411HT8
 MMY-AP1401HT7, AP1601HT7, AP1801HT7, AP2001HT7, AP2211HT7, AP2411HT7

(NOTES)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
 (Head unit ≥ Follower)



Combination unit	Combination outdoor unit	
	Header	Follower
MMY-AP1401T8, AP1401HT8, AP1401HT7	MMY-MAP0801T8, MAP0801HT8, MAP0801HT7	MMY-MAP0601T8, MAP0601HT8, MAP0601HT7
MMY-AP1601T8, AP1601HT8, AP1601HT7	MMY-MAP0801T8, MAP0801HT8, MAP0801HT7	MMY-MAP0801T8, MAP0801HT8, MAP0801HT7
MMY-AP1801T8, AP1801HT8, AP1801HT7	MMY-MAP1001T8, MAP1001HT8, MAP1001HT7	MMY-MAP0801T8, MAP0801HT8, MAP0801HT7
MMY-AP2001T8, AP2001HT8, AP2001HT7	MMY-MAP1001T8, MAP1001HT8, MAP1001HT7	MMY-MAP1001T8, MAP1001HT8, MAP1001HT7
MMY-AP2211T8, AP2211HT8, AP2211HT7	MMY-MAP1201T8, MAP1201HT8, MAP1201HT7	MMY-MAP1001T8, MAP1001HT8, MAP1001HT7
MMY-AP2411T8, AP2411HT8, AP2411HT7	MMY-MAP1201T8, MAP1201HT8, MAP1201HT7	MMY-MAP1201T8, MAP1201HT8, MAP1201HT7



<Three units connected>

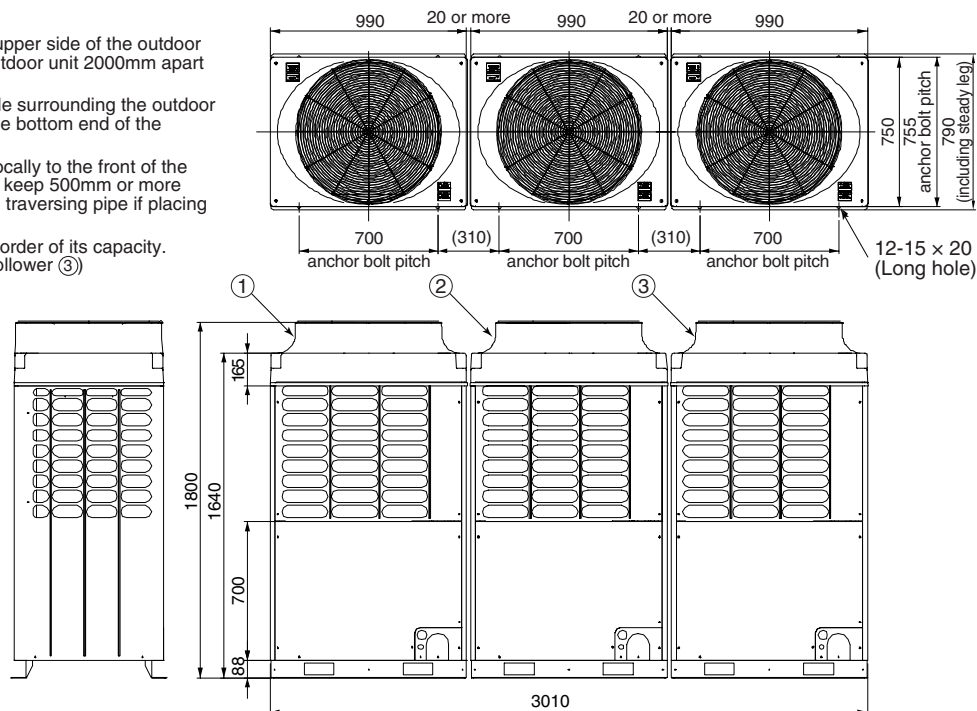
MMY-AP2201T8, AP2401T8, AP2601T8, AP2801T8, AP3001T8, AP3211T8, AP3411T8, AP3611T8

MMY-AP2201HT8, AP2401HT8, AP2601HT8, AP2801HT8, AP3001HT8, AP3211HT8, AP3411HT8, AP3611HT8

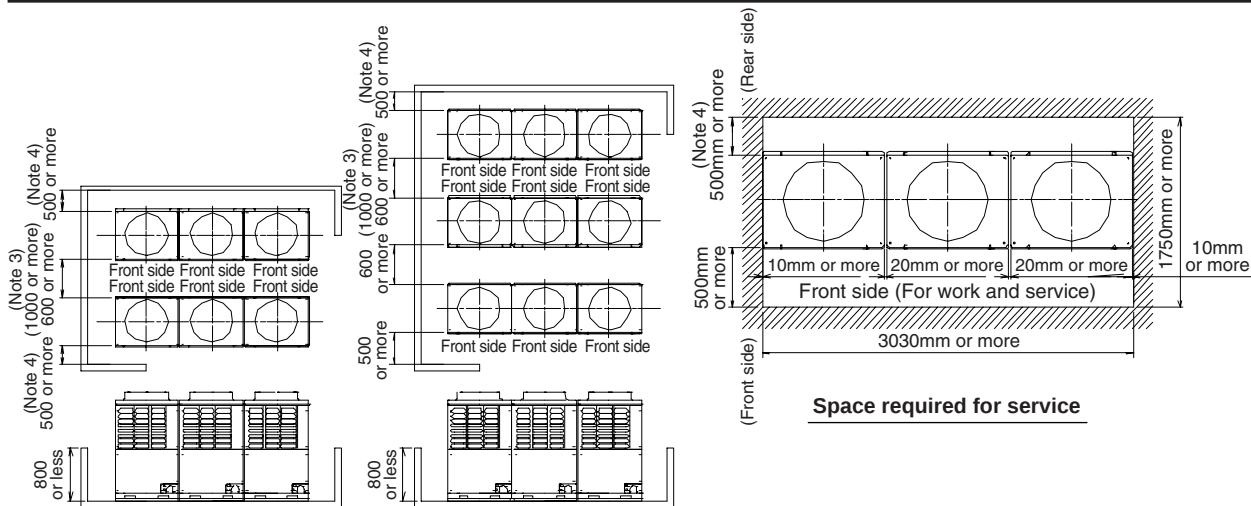
MMY-AP2201HT7, AP2401HT7, AP2601HT7, AP2801HT7, AP3001HT7, AP3211HT7, AP3411HT7, AP3611HT7

(NOTES)

1. If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
2. Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
3. Draw out the pipe procured locally to the front of the outdoor unit horizontally, and keep 500mm or more between the outdoor unit and traversing pipe if placing pipe transversely.
4. Arrange each outdoor unit in order of its capacity.
(Head unit ≥ Follower ② ≥ Follower ③)



Combination unit	Combination outdoor unit		
	Header	Follower	Follower
MMY-AP2201T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0601T8, HT8, HT7
MMY-AP2401T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP2601T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP2801T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP3001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP3221T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP3411T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP3611T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7

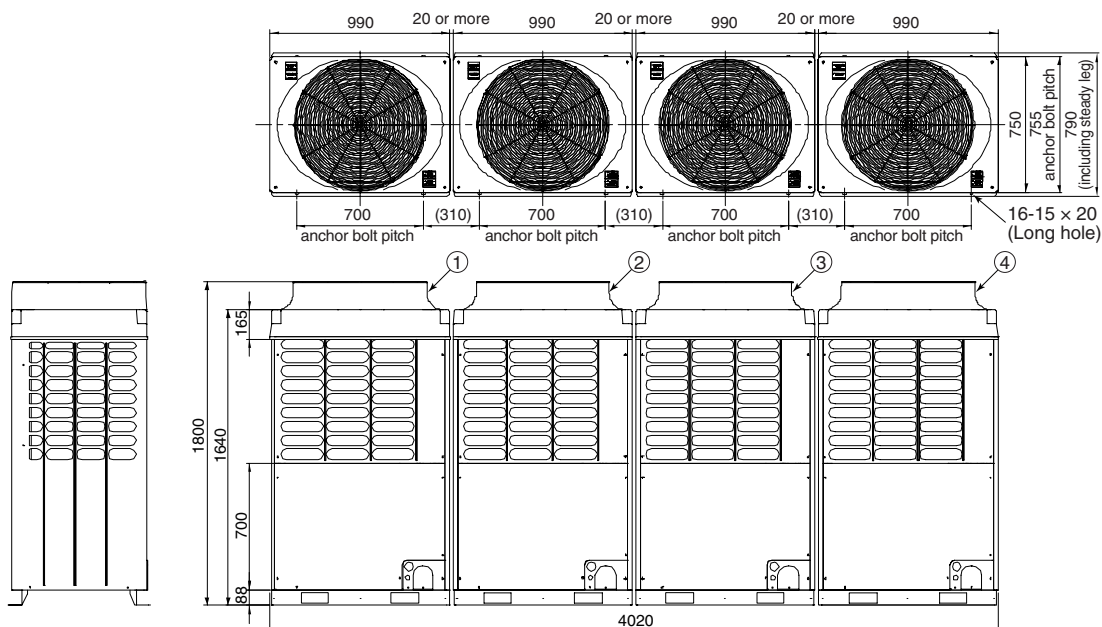


<Four units connected>

MMY-AP3201T8, AP3401T8, AP3601T8, AP3801T8, AP4001T8, AP4201T8, AP4401T8, AP4601T8, AP4801T8

MMY-AP3201HT8, AP3401HT8, AP3601HT8, AP3801HT8, AP4001HT8, AP4201HT8, AP4401HT8, AP4601HT8, AP4801HT8

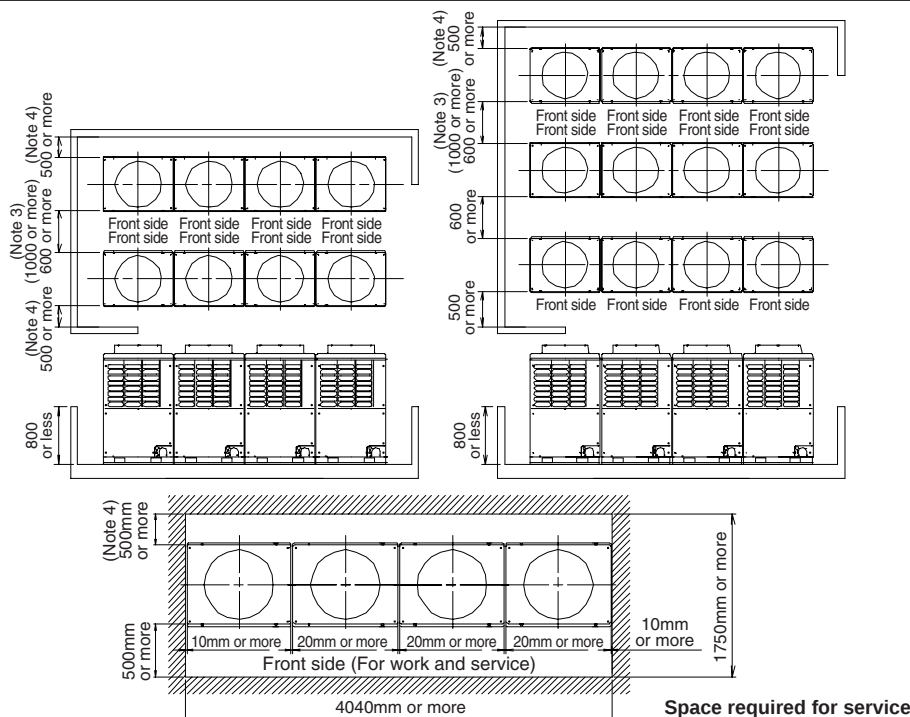
MMY-AP3201HT7, AP3401HT7, AP3601HT7, AP3801HT7, AP4001HT7, AP4201HT7, AP4401HT7, AP4601HT7, AP4801HT7



Combination unit	Combination outdoor unit			
	Header	Follower	Follower	Follower
MMY-AP3201T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP3401T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP3601T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP3801T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP0801T8, HT8, HT7
MMY-AP4001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP4201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP4401T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP4601T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1001T8, HT8, HT7
MMY-AP4801T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7	MMY-MAP1201T8, HT8, HT7

(NOTES)

- If there is an obstacle at the upper side of the outdoor unit, set the top end of the outdoor unit 2000mm apart from the obstacle.
- Limit the height of the obstacle surrounding the outdoor unit to 800mm or less from the bottom end of the outdoor unit.
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(Head unit $\geq$ Follower ② $\geq$ Follower ③ $\geq$ Follower ④)

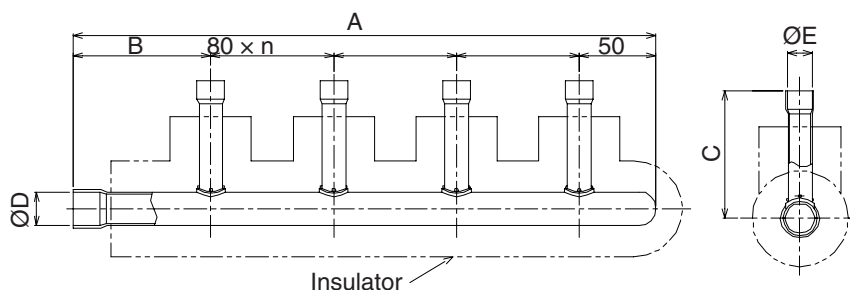


Branch header/Branch joint

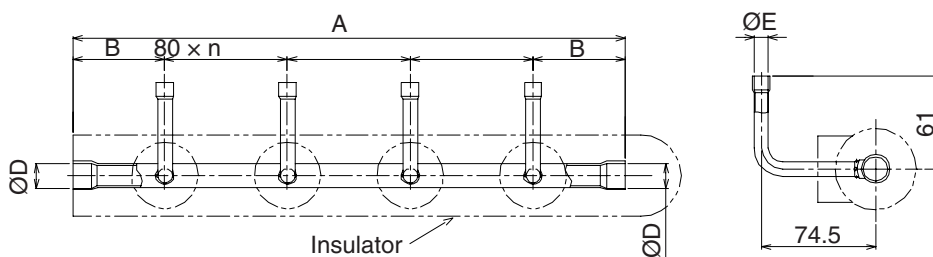
Branch header

RBM-HY1043E, HY1083E, HY2043E, HY2083E

Gas side



Liquid side

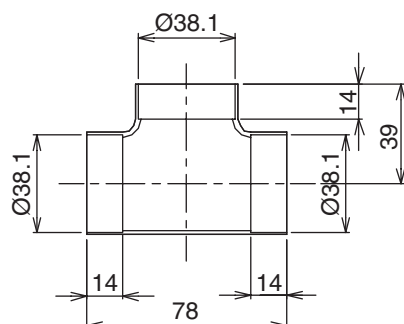


Model		A	B	C	ØD	ØE	n	Accessory socket × Q'ty
RBM-HY1043E	Gas side	380	90	83.6	22.2	15.9	3	(6) × 4, (9) × 4, (14) × 1, (18) × 1, (70) × 1
	Liquid side	360	60	—	15.9	9.5	3	(1) × 4, (6) × 1, (9) × 1
RBM-HY1083E	Gas side	700	90	83.6	22.2	15.9	7	(6) × 8, (9) × 8, (14) × 1, (18) × 1, (70) × 1
	Liquid side	680	60	—	15.9	9.5	7	(1) × 8, (6) × 1, (9) × 1
RBM-HY2043E	Gas side	385.5	95.5	89.3	31.8	15.9	3	(6) × 2, (9) × 2, (27) × 1, (59) × 1
	Liquid side	360	60	—	15.9	9.5	3	(1) × 2
RBM-HY2083E	Gas side	705.5	95.5	89.3	31.8	15.9	7	(6) × 7, (9) × 7, (27) × 1, (59) × 1
	Liquid side	680	60	—	15.9	9.5	7	(1) × 7

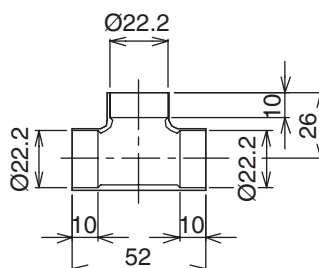
T-shape branch joint

RBM-BT13E

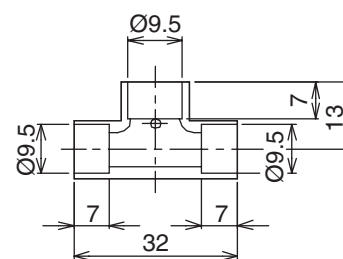
Gas side



Liquid side



Balance pipe

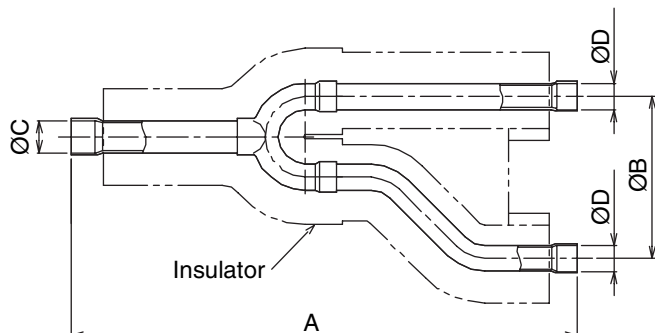


	Accessory socket × Q'ty
Gas side	(61) × 1, (62) × 1, (71) × 2, (73) × 2, (74) × 1
Liquid side	(14) × 2, (18) × 1, (85) × 2, (86) × 1

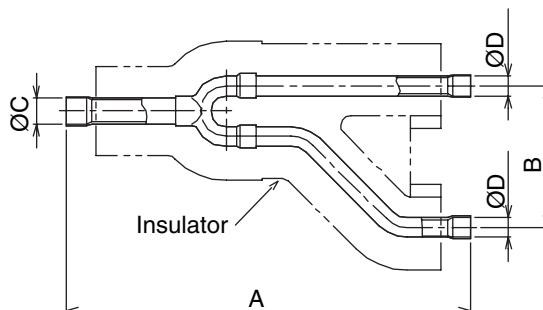
Y-shape branch joint

RBM-BY53E, BY103E

Gas side

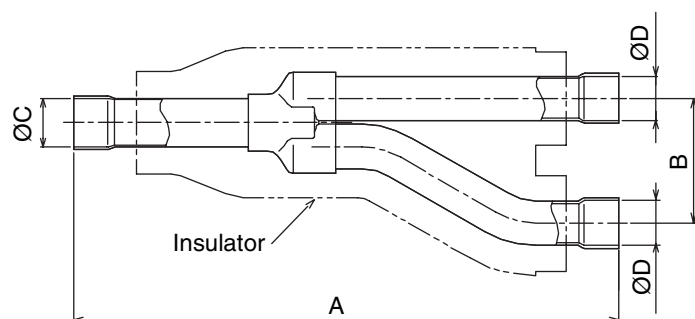


Liquid side

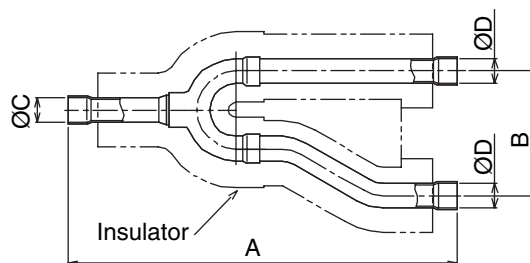


RBM-BY203E, BY303E

Gas side

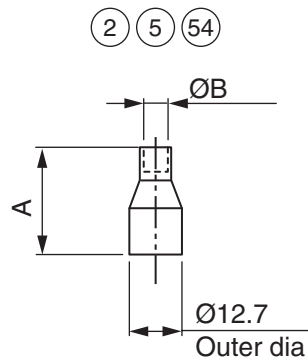
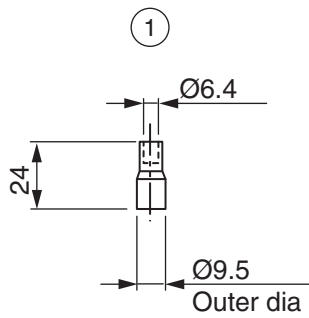


Liquid side

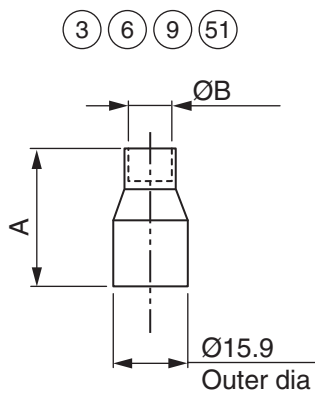


Model		A	B	ØC	ØD	Accessory soket × Q'ty
RBM-BY53E	Gas side	250	80	15.9	12.7	(5) × 2, (54) × 2, (9) × 1, (51) × 1
	Liquid side	200	70	12.7	9.5	(1) × 2, (5) × 1
RBM-BY103E	Gas side	350	80	22.2	19.1	(7) × 1, (10) × 1, (13) × 2, (18) × 1, (52) × 2, (70) × 1, (89) × 1
	Liquid side	250	80	15.9	12.7	(2) × 1, (5) × 2, (6) × 1, (9) × 1, (54) × 1
RBM-BY203E	Gas side	350	80	31.8	28.6	(16) × 1, (20) × 1, (27) × 1, (43) × 2, (48) × 1, (49) × 1, (58) × 1, (59) × 1
	Liquid side	250	80	15.9	15.9	(3) × 1, (6) × 1, (9) × 2
RBM-BY303E	Gas side	400	110	38.1	38.1	(61) × 3, (62) × 2, (71) × 2, (73) × 1, (74) × 1, (75) × 1, (76) × 1, (77) × 1
	Liquid side	350	80	22.2	19.1	(4) × 1, (7) × 1, (10) × 1, (13) × 2, (14) × 1, (18) × 1, (52) × 1

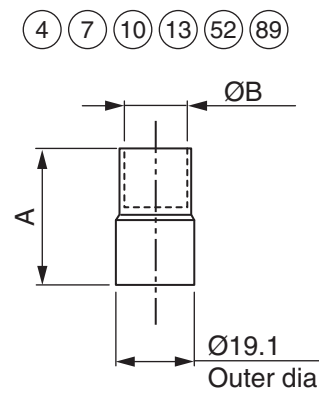
Accessory socket



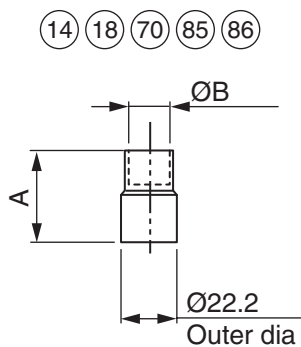
	A	ØB
②	29	6.4
⑤	26	9.5
⑤4	31	15.9



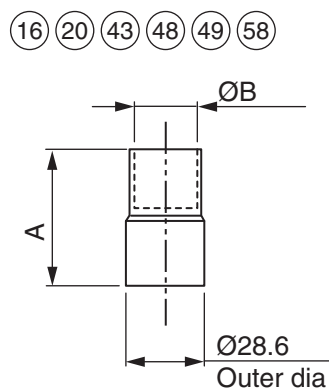
	A	ØB
③	35	6.4
⑥	32	9.5
⑨	28	12.7
⑤1	38	19.1



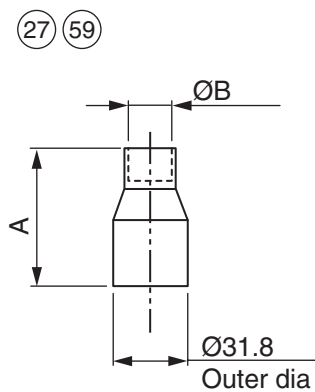
	A	ØB
④	39	6.4
⑦	39	9.5
⑩	36	12.7
⑬	33	15.9
⑤2	43	22.2
⑧9	53	28.6



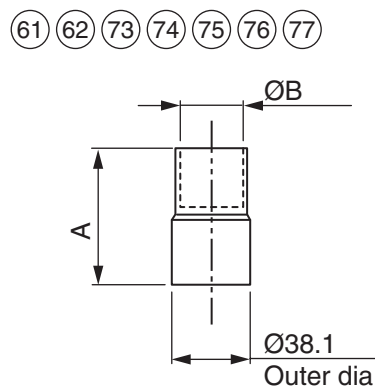
	A	ØB
⑭	40	15.9
⑱	40	19.1
⑦0	54	28.6
⑧5	41	12.7
⑧6	44	9.5



	A	ØB
⑰	50	15.9
⑳	52	19.1
④3	50	22.2
④8	54	9.5
④9	52	12.7
⑤8	62	34.9



	A	ØB
⑳7	49	28.6
⑤9	59	34.9



	A	ØB
⑥1	55	34.9
⑥2	66	41.3
⑦1	66	28.6
⑦3	66	22.2
⑦4	66	19.1
⑦5	64	15.9
⑦6	62	12.7
⑦7	62	9.5

TOSHIBA CARRIER CORPORATION

2 CHOME 12-32, KONAN, MINATOKU, TOKYO, 108-0075, JAPAN