

## Engineering Data

# 1-way (2 series) Air Discharge Cassette Type

### Indoor Unit

**MMU-AP0152SH**

**MMU-AP0182SH**

**MMU-AP0242SH**



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# 1. Specifications

## ■ 1-way (2 series) Air Discharge Cassette Type

<b>50Hz</b>
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Model name		MMU-	AP0152SH	AP0182SH	AP0242SH
Cooling/Heating capacity		(kW)	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power supply		1 phase 50Hz 230V (220-240V)		
	Running current	(A)	0.34	0.37	0.62
	Power consumption	(kW)	0.042	0.046	0.075
	Starting current	(A)	0.51	0.54	0.80
Appearance	Main unit		Heat-insulating material attached Zinc hot dipping steel plate		
	Ceiling panel		RBC-US21PGE		
	Panel color		Moon white (Muncel 2.5GY9.0/0.5)		
Dimension	Main unit	Height (mm)	200		
		Width (mm)	1000		
		Depth (mm)	710		
	Ceiling panel	Height (mm)	20		
		Width (mm)	1230		
		Depth (mm)	800		
Total weight	Main unit (kg)		21	22	
	Ceiling panel (kg)		5.5		
Heat exchanger		Finned tube			
Soundproof / Heat-insulating material		Polyethylene foam + Expanded polystyrene			
Fan		Centrifugal fan (Sirocco fan)			
Standard air flow	High	(m <sup>3</sup> /h)	750	780	1140
	(Mid./Low)	(m <sup>3</sup> /h)	690/630	720/660	960/810
Motor		(W)	30		
Air filter		Standard filter attached (Long life filter)			
Controller		Remote controller			
Connecting pipe	Gas pipe (mm)		φ12.7		φ15.9
	Liquid pipe (mm)		φ6.4		φ9.5
	Drain pipe (Nominal dia.mm)		25 (Polyvinyl chloride tube : External dia.32 Internal dia.25)		
Sound pressure level	High/Mid./Low	(dB(A))	37/35/32	38/36/34	45/41/37

# 1. Specifications

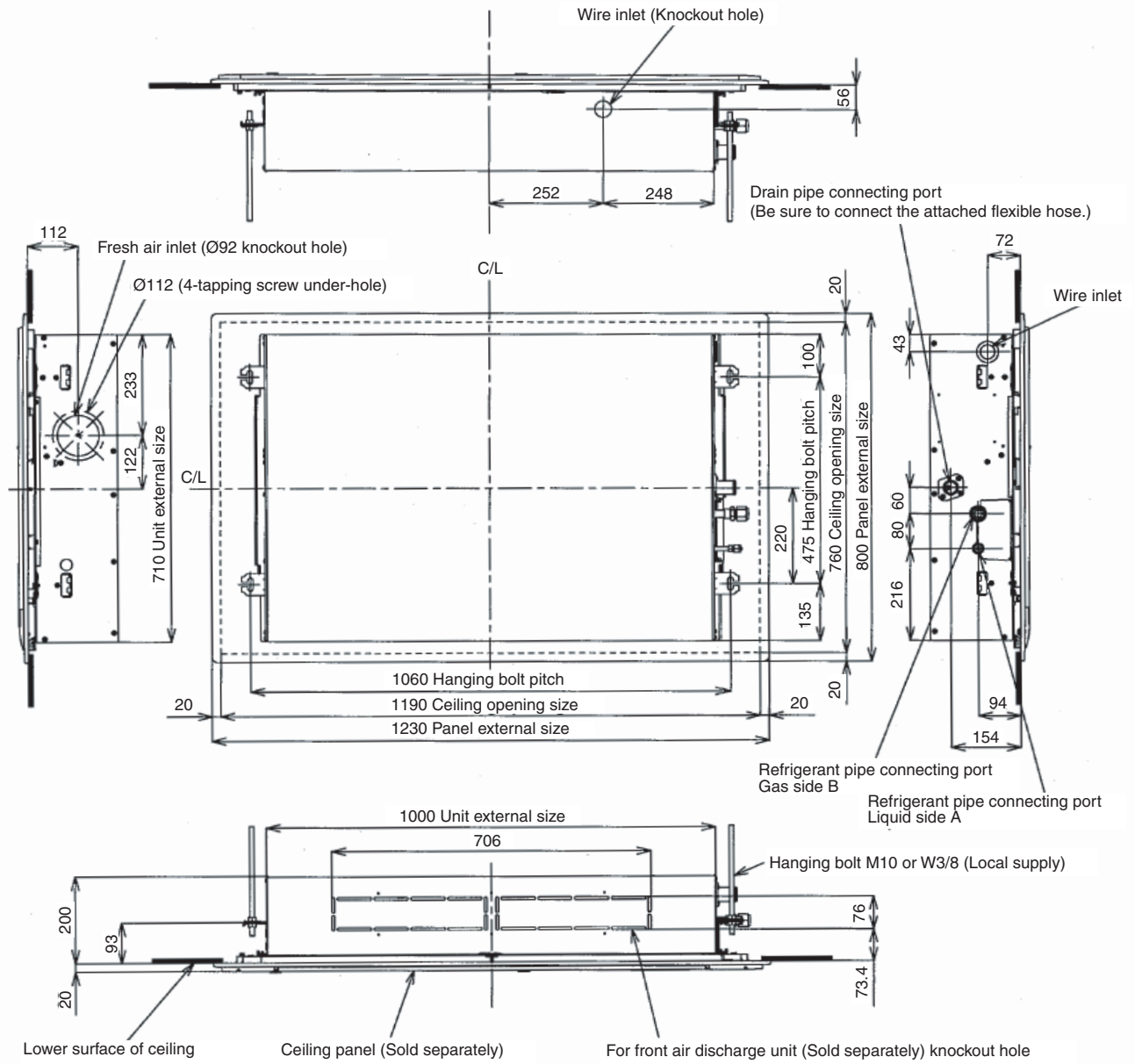
## ■ 1-way (2 series) Air Discharge Cassette Type

60Hz

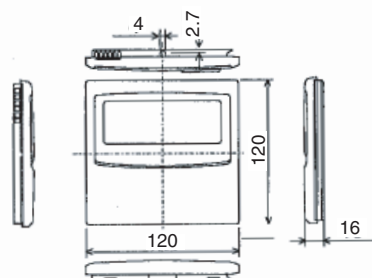
Model name		MMU-	AP0152SH	AP0182SH	AP0242SH
Cooling/Heating capacity		(kW)	4.5/5.0	5.6/6.3	7.1/8.0
Electrical characteristics	Power supply		1 phase 60Hz 220V		
	Running current	(A)	0.35	0.39	0.62
	Power consumption	(kW)	0.041	0.045	0.073
	Starting current	(A)	0.53	0.54	0.80
Appearance	Main unit		Heat-insulating material attached Zinc hot dipping steel plate		
	Ceiling panel		RBC-US21PGE		
	Panel color		Moon white (Muncel 2.5GY9.0/0.5)		
Dimension	Main unit	Height (mm)	200		
		Width (mm)	1000		
		Depth (mm)	710		
	Ceiling panel	Height (mm)	20		
		Width (mm)	1230		
		Depth (mm)	800		
Total weight	Main unit	(kg)	21		22
	Ceiling panel	(kg)	5.5		
Heat exchanger			Finned tube		
Soundproof / Heat-insulating material			Polyethylene foam + Expanded polystyrene		
Fan			Centrifugal fan (Sirocco fan)		
Standard air flow	High	(m <sup>3</sup> /h)	750	780	1140
	(Mid./Low)	(m <sup>3</sup> /h)	690/630	720/660	960/810
Motor		(W)	30		
Air filter			Standard filter attached (Long life filter)		
Controller			Remote controller		
Connecting pipe	Gas pipe	(mm)	φ12.7		φ15.9
	Liquid pipe	(mm)	φ6.4		φ9.5
	Drain pipe (Nominal dia.mm)		25 (Polyvinyl chloride tube : External dia.32 Internal dia.25)		
Sound pressure level	High/Mid./Low	(dB(A))	37/35/32	38/36/34	45/41/37

# 2. Dimensions

## ■ 1-way (2 series) Air Discharge Cassette Type (MMU-AP\*\*\*SH)



- Wired remote controller (RBC-AMT31E)



Model name	MMU-	A	B
AP015, AP018 type		Ø6.4	Ø12.7
AP024 type		Ø9.5	Ø15.9

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## 3. Electrical current characteristics

### ■ 1-way (2 series) Air Discharge Cassette Type

Type	Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min	Max	kW	FLA	MCA	MOCP
S-MMS (50Hz)	MMU-AP0152SH	230-1-50	198	264	0.030	0.40	0.49	15
	MMU-AP0182SH	230-1-50	198	264	0.030	0.42	0.53	15
	MMU-AP0242SH	230-1-50	198	264	0.030	0.71	0.88	15
S-MMS (60Hz)	MMU-AP0152SH	220-1-60	198	264	0.030	0.40	0.50	15
	MMU-AP0182SH	220-1-60	198	264	0.030	0.45	0.57	15
	MMU-AP0242SH	220-1-60	198	264	0.030	0.75	0.94	15
S-HRM	MMU-AP0152SH	230-1-50	198	264	0.030	0.40	0.49	15
	MMU-AP0182SH	230-1-50	198	264	0.030	0.42	0.53	15
	MMU-AP0242SH	230-1-50	198	264	0.030	0.71	0.88	15

# 4. Sensible capacity table

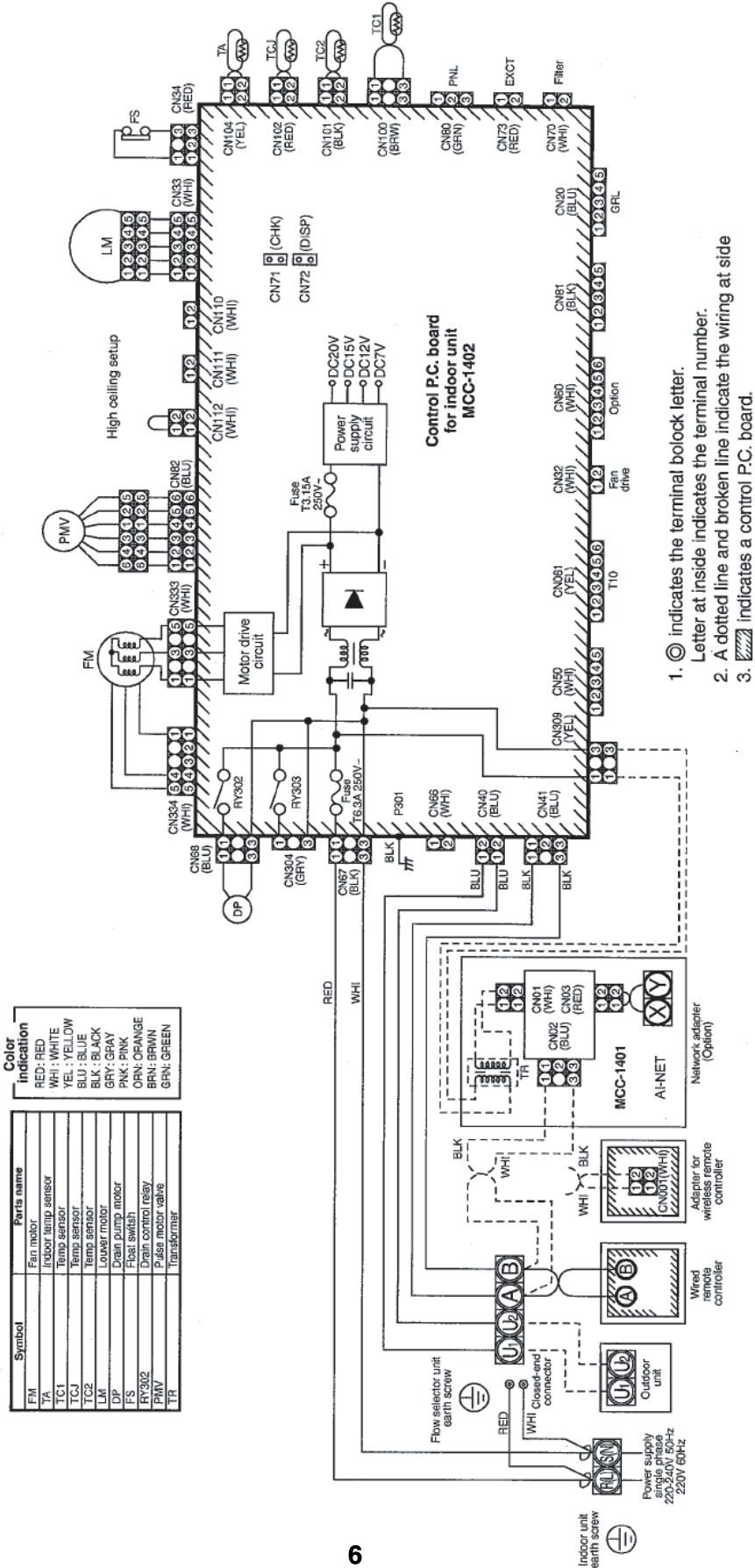
## ■ 1-way (2 series) Air Discharge Cassette Type (MMU-AP\*\*\*SH)

TC : Total capacity [kW]    SHC : Sensible capacity [kW]

Unit size	Outdoor air temp. CDB	Indoor air temp.													
		14.0CWB		16.0CWB		18.0CWB		19.0CWB		20.0CWB		22.0CWB		24.0CWB	
		20CDB		23CDB		26CDB		27CDB		28CDB		30CDB		32CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
015	10.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	12.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	14.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	16.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	18.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	20.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	21.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	23.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	25.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	27.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	29.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	31.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	33.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
	35.0	3.7	2.8	4.1	3.0	4.4	3.2	4.5	3.2	4.6	3.2	4.9	3.2	5.1	3.1
37.0	3.6	2.7	4.0	2.9	4.2	3.1	4.4	3.1	4.5	3.1	4.7	3.1	5.0	3.0	
39.0	3.5	2.7	3.8	2.8	4.1	3.0	4.2	3.0	4.4	3.0	4.6	3.0	4.8	2.9	
018	10.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	12.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	14.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	16.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	18.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	20.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	21.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	23.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	25.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	27.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	29.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	31.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	33.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
	35.0	4.6	3.5	5.1	3.7	5.4	3.9	5.6	3.9	5.8	3.9	6.1	3.9	6.4	3.8
37.0	4.5	3.3	4.9	3.6	5.3	3.8	5.4	3.8	5.6	3.8	5.9	3.7	6.2	3.7	
39.0	4.3	3.3	4.8	3.5	5.1	3.7	5.3	3.7	5.4	3.7	5.7	3.6	6.0	3.6	
024	10.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	12.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	14.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	16.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	18.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	20.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	21.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	23.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	25.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	27.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	29.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	31.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	33.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
	35.0	5.8	4.4	6.4	4.7	6.9	5.0	7.1	5.0	7.3	5.0	7.7	5.0	8.1	4.8
37.0	5.6	4.3	6.2	4.6	6.7	4.9	6.9	4.8	7.1	4.8	7.5	4.8	7.8	4.7	
39.0	5.5	4.2	6.1	4.4	6.5	4.7	6.7	4.7	6.9	4.7	7.3	4.7	7.6	4.6	

# 5. Wiring diagrams

## ■ 1-way (2 series) Air Discharge Cassette Type (MMU-AP\*\*\*SH)

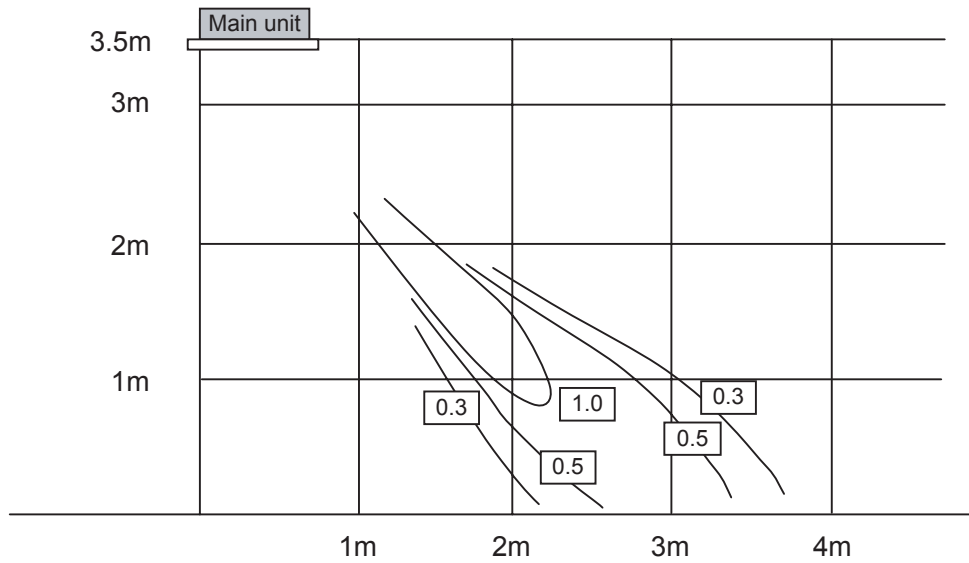


# 6. Air speed characteristics

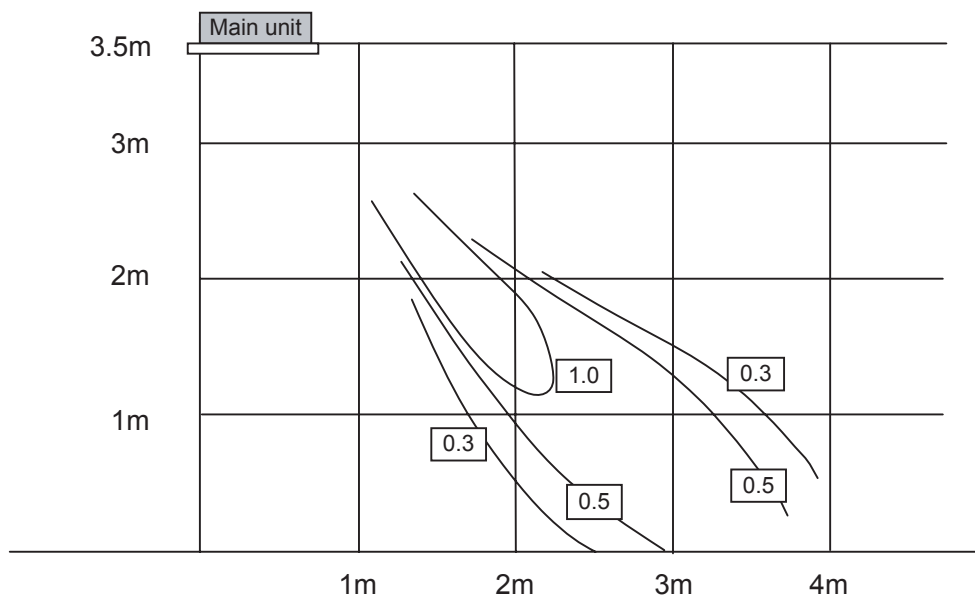
## ■ 1-way (2 series) Air Discharge Cassette Type

<Heating mode>

MMU-AP0152SH, AP0182SH



MMU-AP0242SH

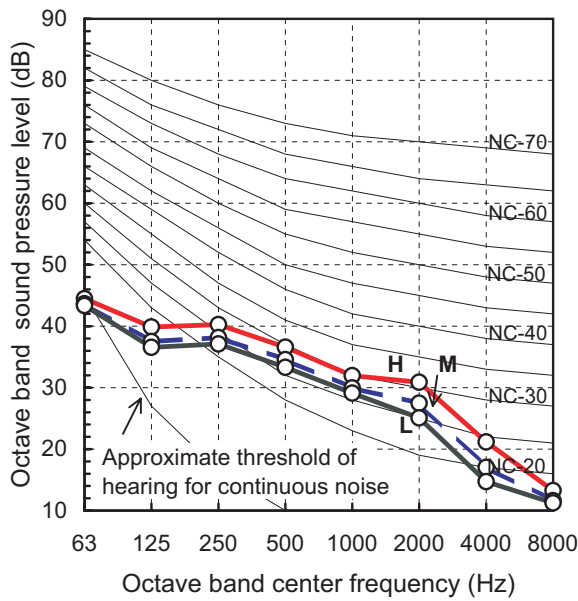


# 7. Sound Characteristics (NC Curve)

## ■ 1-way (2 series) Air Discharge Cassette Type

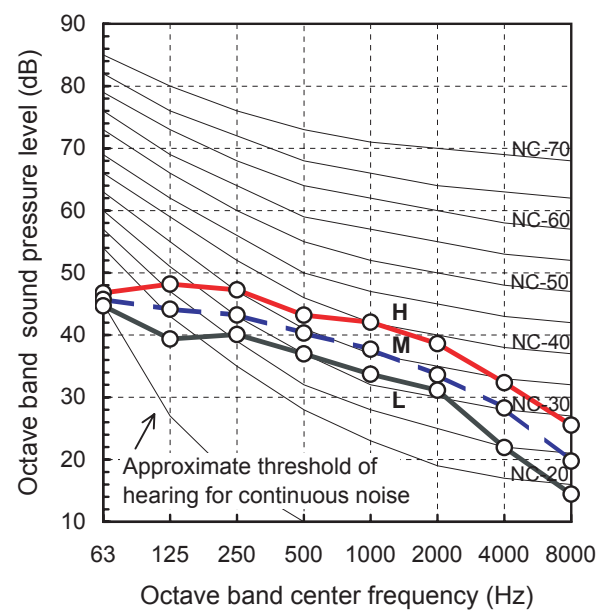
### MMU-AP0152SH

Fan tap	H	M	L
Sound pressure level (dB(A))	37	35	32



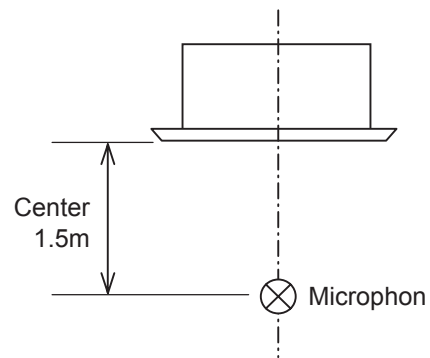
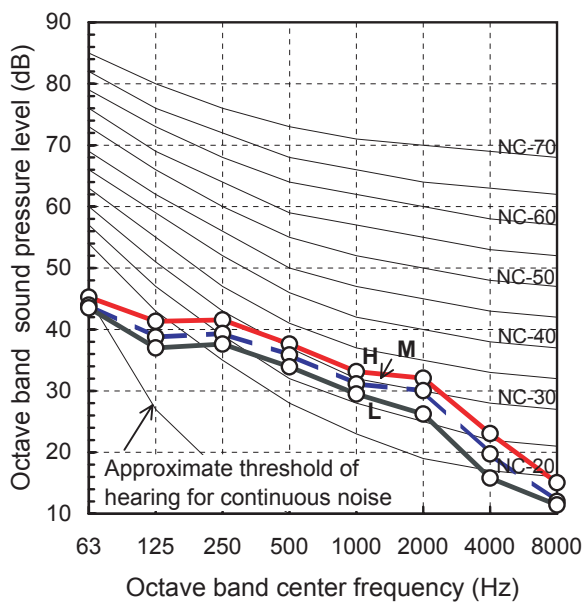
### MMU-AP0242SH

Fan tap	H	M	L
Sound pressure level (dB(A))	45	41	37



### MMU-AP0182SH

Fan tap	H	M	L
Sound pressure level (dB(A))	38	36	34



# 8. Fresh air intake (Design guide)

## ■ 1-way (2 series) Air Discharge Cassette Type

### Caution

The fresh air shall be treated by heat reclaim ventilator or the like.

Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature.

\*1. Recommended treated air temperature is 12 °C to 30 °C.

However, please make a fresh air volume within 20% of standard.

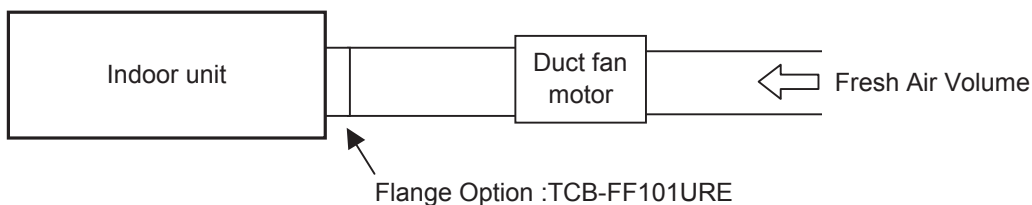
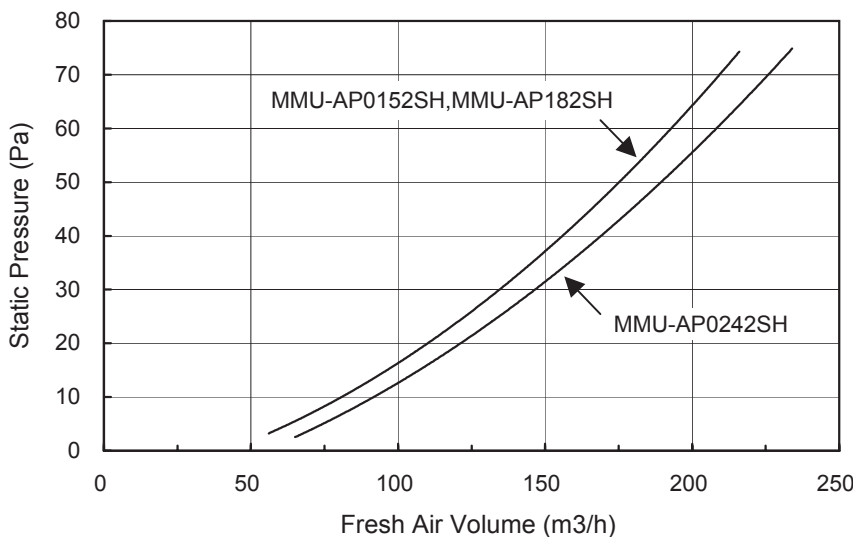
Model name	MMU-	AP0152SH	AP0182SH	AP0242SH
Standard air flow	(m <sup>3</sup> /h)	750	780	1140

Provide an air filter in fresh air duct.

(Fresh air doesn't pass through the filter of Indoor unit.)

Be sure to insulate the fresh air duct.

Please wire for inter - lock with fan of Heat exchanger unit and Indoor unit.



### Inter - lock circuit

Connect the driving relay of the duct fan(DC 12V) between 1 and 6 on the indoor P.C. board.

(Rated current of the relay for duct fan shall be up to 75mA.)

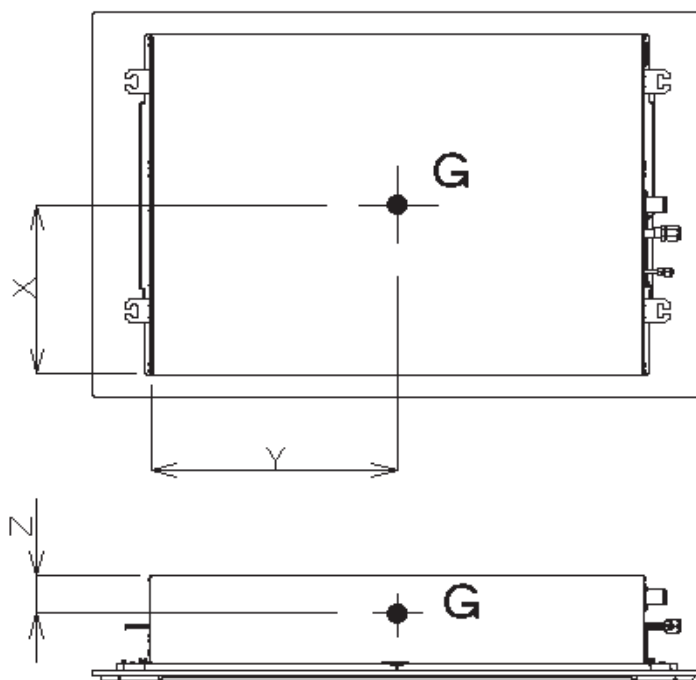
After installation, implement a trial operation to check that the duct fan of the indoor unit start/stop simultaneously.

(Implement the trial operation following to the installation manual of the indoor unit.)

## 9. Barycentric position

### ■ 1-way (2 series) Air Discharge Cassette Type

Model name	X (mm)	Y (mm)	Z (mm)	Weight (kg)	
				Main unit	Ceiling panel
MMU-AP0152SH	370	475	80	20	5.5
MMU-AP0182SH					
MMU-AP0242SH				21	5.5



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**1-way Air Discharge Cassette Type  
Engineering Data**

**Oct, 2005 First Edition**

**TOSHIBA CARRIER CORPORATION**