

4-way Cassette Type

MMU-UP0091HP-E / TR

MMU-UP0121HP-E / TR

MMU-UP0151HP-E / TR

MMU-UP0181HP-E / TR

MMU-UP0241HP-E / TR

MMU-UP0271HP-E / TR

MMU-UP0301HP-E / TR

MMU-UP0361HP-E / TR

MMU-UP0481HP-E / TR

MMU-UP0561HP-E / TR

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1. Specifications

Model name			MMU-	UP0091HP-E / TR	UP0121HP-E / TR	UP0151HP-E / TR	UP0181HP-E / TR	UP0241HP-E / TR
Power supply			1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz					
Cooling capacity (*1)			(kW)	2.8	3.6	4.5	5.6	7.1
Heating capacity (*1)			(kW)	3.2	4.0	5.0	6.3	8.0
Running current			(A)	0.23	0.23	0.27	0.29	0.38
Power consumption			(kW)	0.021	0.021	0.023	0.026	0.036
Starting current			(A)	0.30	0.30	0.33	0.36	0.42
FCU dimension (Panel)		Height	(mm)	256 (30)				
		Width	(mm)	840 (950)				
		Depth	(mm)	840 (950)				
Total weight			(kg)	18 (4)		20 (4)		
Heat exchangere			Finned tube					
Soundproof / Heat-insulation material			Non-flammable insulation					
Fan			Turbo fan					
Air flow volume	Indoor unit (H/M/L)	(m3/h)	800 / 730 / 680	800 / 730 / 680	930 / 830 / 790	1050 / 920 / 800	1290 / 920 / 800	
Sound pressure	Indoor unit (H/M/L)	dB(A)	30 / 29 / 27	30 / 29 / 27	31 / 29 / 27	32 / 29 / 27	35 / 31 / 28	
Motor output			(W)	14				20
Conecting pipe	Gas side	(mm)	Ø 9.52		Ø 12.7		Ø 15.9	
	Liquid side	(mm)	Ø 6.35				Ø 9.52	
	Drain pipe	(mm)	25 (Polyvinyl chloride tube)					
Operating Range for SMMS-u	Cooling	(°C)	5 ~ 46 - 52 (*2)					
	Heating	(°C)	-10 ~ 46					

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

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

(*2) 46-52 °C is also available but temporary operate

Model name			MMU-	UP0271HP-E / TR	UP0301HP-E / TR	UP0361HP-E / TR	UP0481HP-E / TR	UP0561HP-E / TR	
Power supply			1 ph 230V (220-240V) ~ 50 Hz & 1 ph 220V (208-230V) ~ 60 Hz						
Cooling capacity (*1)			(kW)	8.0	9.0	11.2	14.0	16.0	
Heating capacity (*1)			(kW)	9.0	10.0	12.5	16.0	18.0	
Running current			(A)	0.38	0.43	0.73	0.88	0.88	
Power consumption			(kW)	0.036	0.043	0.088	0.112	0.112	
Starting current			(A)	0.42	0.59	0.87	1.23	1.26	
FCU dimension		Height	(mm)	256 (30)		319 (30)			
		Width	(mm)	840 (950)					
		Depth	(mm)	840 (950)					
Total weight			(kg)	20 (4)		25 (4)			
Heat exchanger			Finned tube						
Soundproof / Heat-insulation material			Non-flammable insulation						
Fan			Turbo fan						
Air flow volume	Indoor unit (H/M/L)	(m3/h)	1290 / 920 / 800	1320 / 1110 / 850	1970/1430/1070	2130/1430/1130	2130/1520/1230		
Sound pressure	Indoor unit (H/M/L)	dB(A)	35 / 31 / 28	38 / 33 / 30	43 / 38 / 32	46 / 38 / 33	46 / 40 / 33		
Motor output			(W)	20		68	72		
Conecting pipe	Gas side	(mm)	Ø 15.9						
	Liquid side	(mm)	Ø 9.52						
	Drain pipe	(mm)	25 (Polyvinyl chloride tube)						
Operating Range for SMMS-u	Cooling	(°C)	5 ~ 46 - 52 (*2)						
	Heating	(°C)	-10 ~ 46						

(*1) Rated testing conditions Cooling : Indoor air tempreature 27 °C DB/ 19°C WB, Outdoor 35 °C DB

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

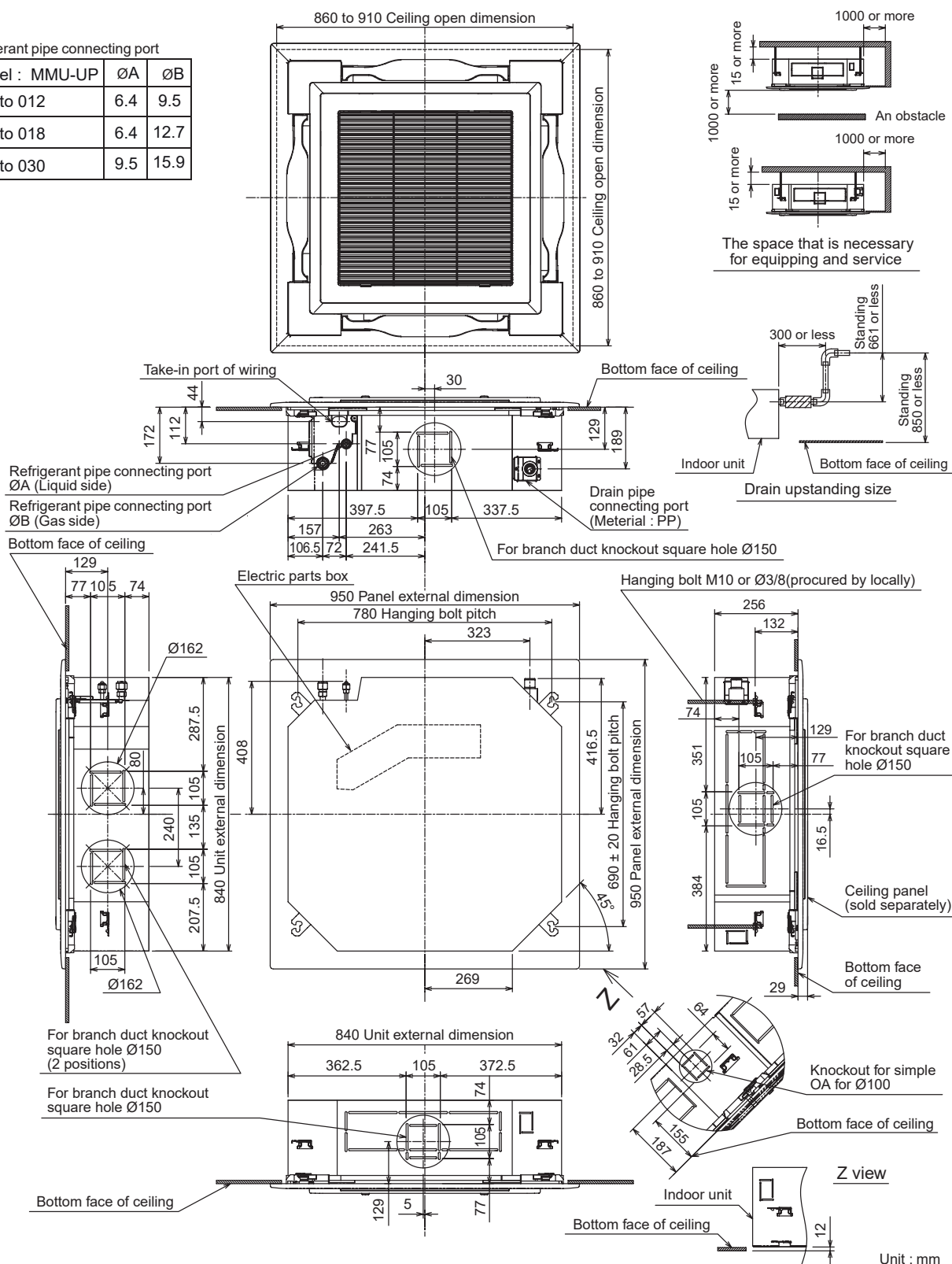
(*2) 46-52 °C is also availabel but temporary oparate

2. Dimensions

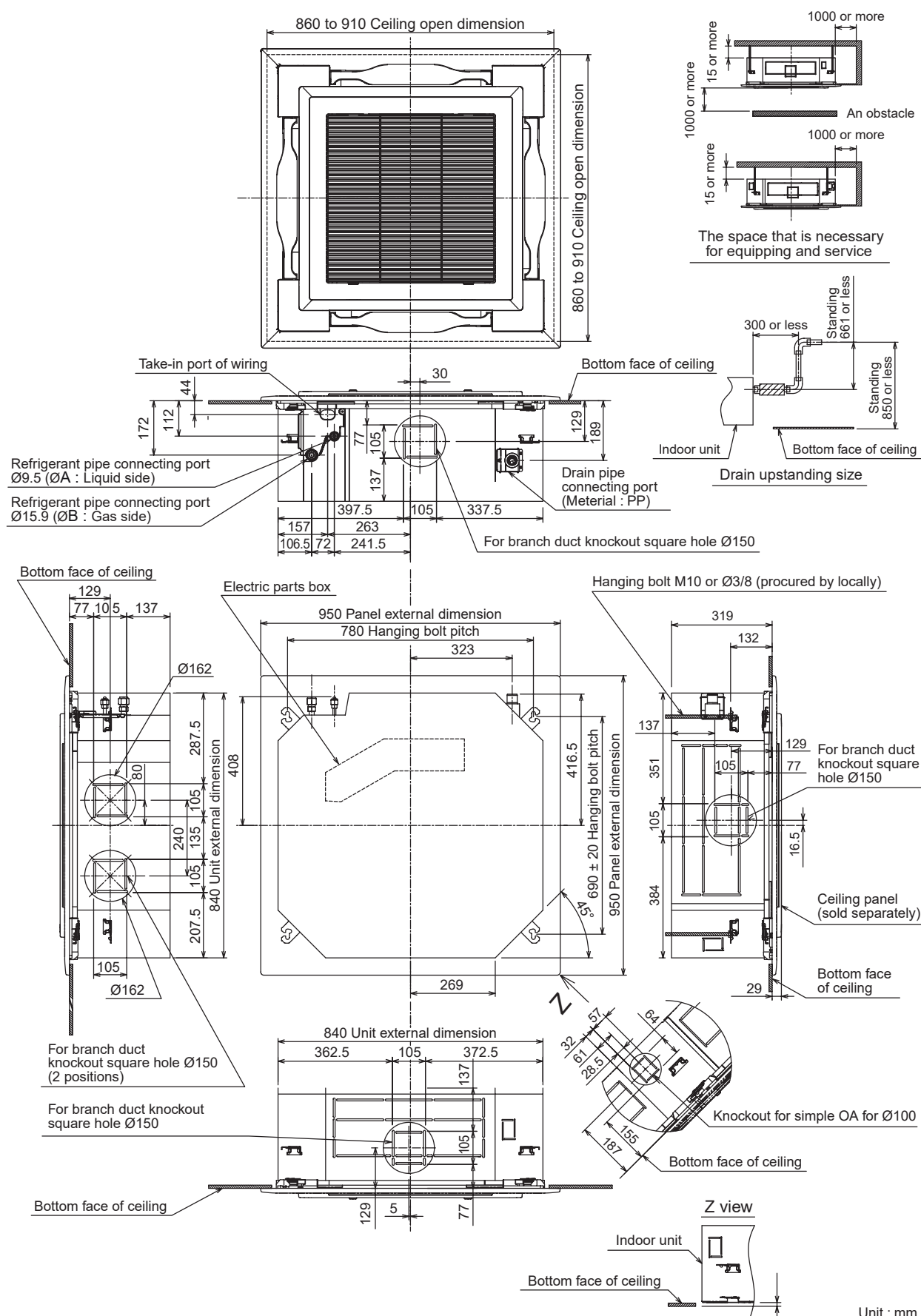
MMU-UP__*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030)

Refrigerant pipe connecting port

Model : MMU-UP	ØA	ØB
009 to 012	6.4	9.5
015 to 018	6.4	12.7
024 to 030	9.5	15.9

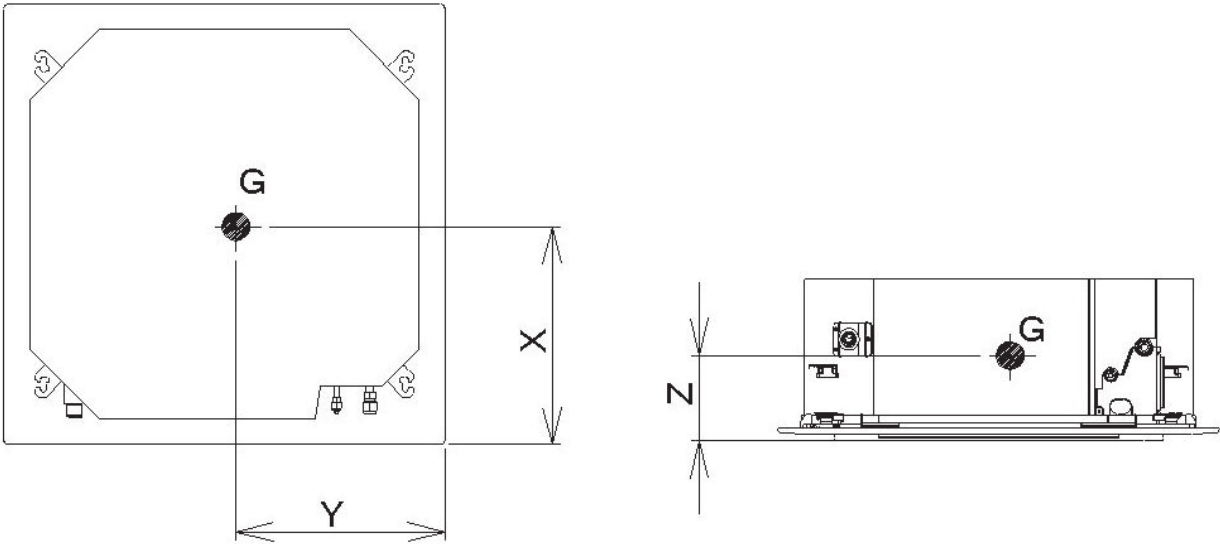


MMU-UP__*1HP-E / TR (*036 / 048 / 056)



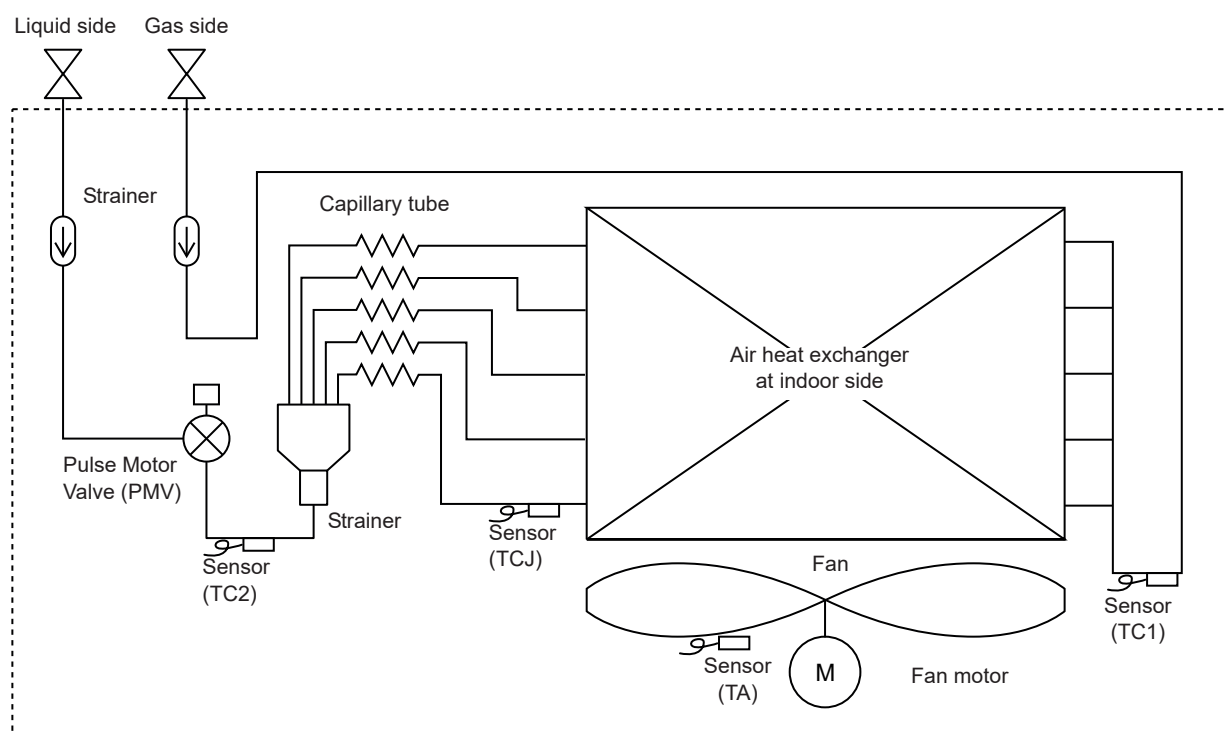
3. Center of gravity

Model name	X(mm)	Y(mm)	Z(mm)	Total weight	
				Main unit (kg)	Ceiling panel (kg)
MMU-UP0091HP-E / TR	470	455	154	18	4.0
MMU-UP0121HP-E / TR					
MMU-UP0151HP-E / TR	470	455	154	20	4.0
MMU-UP0181HP-E / TR					
MMU-UP0241HP-E / TR					
MMU-UP0271HP-E / TR					
MMU-UP0301HP-E / TR					
MMU-UP0361HP-E / TR	470	450	184	25	4.0
MMU-UP0481HP-E / TR					
MMU-UP0561HP-E / TR					



4. Piping diagram

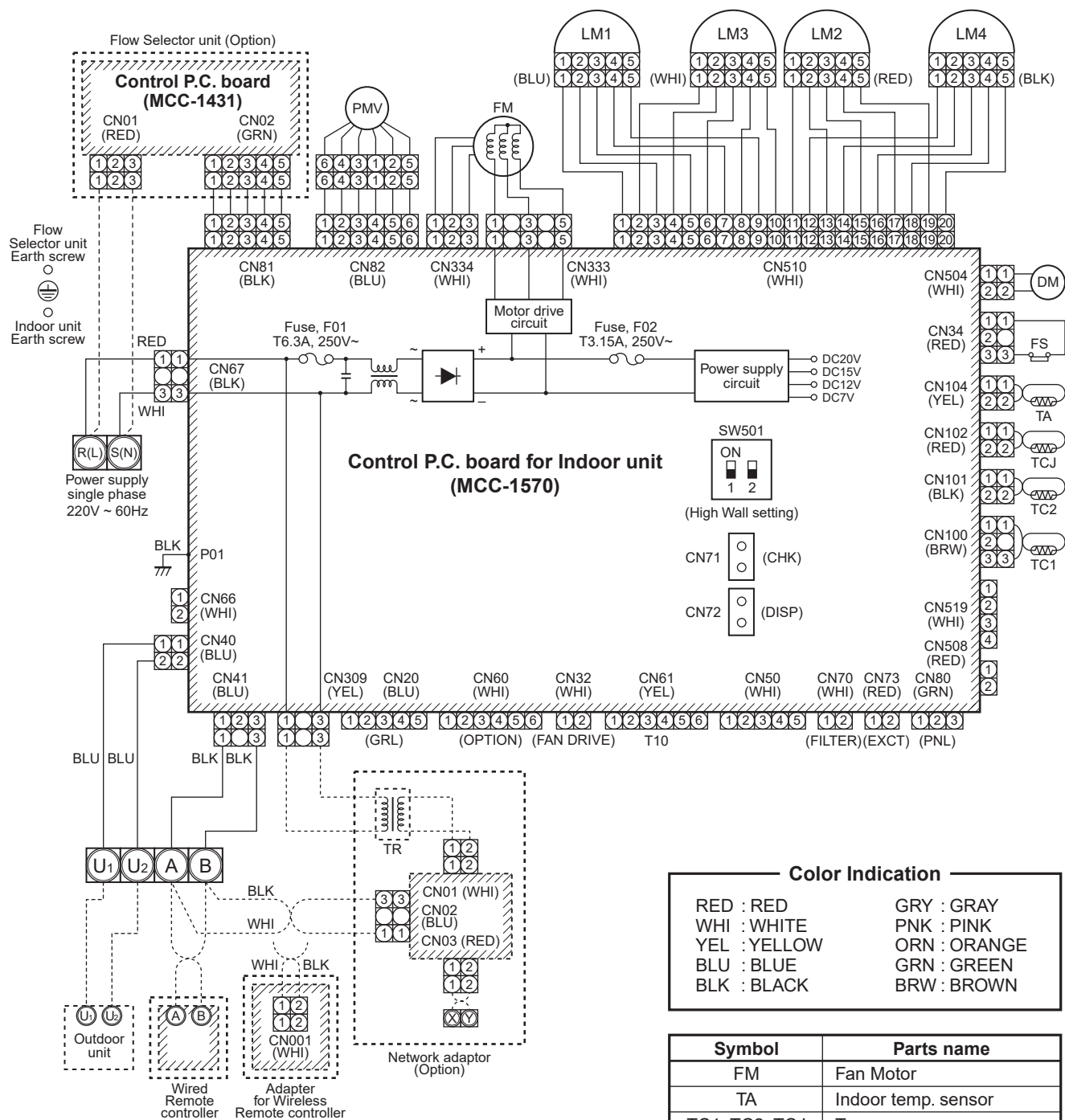
MMU-UP__*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030 / 036 / 048 / 056)



Functional part name		Functional outline
Pulse Motor Valve	PMV	(Connector CN082 (6P): Blue) 1) Controls super heat in cooling operation 2) Controls sub cool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connector CN104 (2P): Yellow) 1) Detects indoor suction temperature
	2. TC1	(Connector CN100 (3P): Brown) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connector CN101 (2P): Black) 1) Controls PMV sub cool in heating operation
	4. TCJ	(Connector CN102 (2P): Red) 1) Controls PMV super heat in cooling operation

5. Wiring diagram

MMU-UP__*1HP-E / TR (*009 / 012 / 015 / 018 / 024 / 027 / 030 / 036 / 048 / 056)



1. ○ indicates the terminal block.
Letter at inside indicates the terminal number.
2. A dotted line and broken line indicate the wiring site.
3. ▨ indicates the control P.C. board.

Symbol	Parts name
FM	Fan Motor
TA	Indoor temp. sensor
TC1, TC2, TCJ	Temp. sensor
LM1, 2, 3, 4	Louver Motor
DM	Drain pump Motor
FS	Float Switch
PMV	Pulse Motor Valve
TR	Power supply Transformer (For Network adaptor)

6. Electrical characteristics

50 Hz

Type	Model name	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min.	Max.	kW	FLA	MCA	MOCP
4-Way Air Discharge Cassette Type	MMU-UP0091HP-E / TR	230-1-50	198	264	0.060	0.63	0.79	15
	MMU-UP0121HP-E / TR	230-1-50	198	264	0.060	0.63	0.79	15
	MMU-UP0151HP-E / TR	230-1-50	198	264	0.060	0.80	1.00	15
	MMU-UP0181HP-E / TR	230-1-50	198	264	0.060	0.80	1.00	15
	MMU-UP0241HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0271HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0301HP-E / TR	230-1-50	198	264	0.060	0.87	1.09	15
	MMU-UP0361HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15
	MMU-UP0481HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15
	MMU-UP0561HP-E / TR	230-1-50	198	264	0.130	1.15	1.44	15

60 Hz

Type	Model name	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
			Min.	Max.	kW	FLA	MCA	MOCP
4-Way Air Discharge Cassette Type	MMU-UP0091HP-E / TR	220-1-60	198	242	0.060	0.63	0.79	15
	MMU-UP0121HP-E / TR	220-1-60	198	242	0.060	0.63	0.79	15
	MMU-UP0151HP-E / TR	220-1-60	198	242	0.060	0.80	1.00	15
	MMU-UP0181HP-E / TR	220-1-60	198	242	0.060	0.80	1.00	15
	MMU-UP0241HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0271HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0301HP-E / TR	220-1-60	198	242	0.060	0.87	1.09	15
	MMU-UP0361HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15
	MMU-UP0481HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15
	MMU-UP0561HP-E / TR	220-1-60	198	242	0.130	1.15	1.44	15

MCA : Minimum Circuit Amps

FLA : Full Load Amps

MOCP : Maximum Overcurrent Protection (Amps)

kW : Fan Motor Rated Output (kW)

7. Sensible capacity table

4-way Cassette type (MMU-UP___1HP-E / TR)

Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
009	10.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	12.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	14.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	16.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	18.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	20.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	21.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	23.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	25.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	27.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	29.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	31.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	33.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
	35.0	2.3	1.9	2.5	2.0	2.7	2.1	2.8	2.1	2.9	2.1	3.1	2.1	3.2	2.0
012	37.0	2.2	1.8	2.5	1.9	2.6	2.0	2.7	2.0	2.8	2.0	3.0	2.0	3.1	2.0
	39.0	2.2	1.8	2.4	1.9	2.6	2.0	2.6	2.0	2.7	2.0	2.9	2.0	3.0	1.9
	10.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	12.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	14.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	16.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	18.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	20.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	21.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	23.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	25.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	27.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	29.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	31.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
015	33.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	35.0	3.0	2.3	3.3	2.5	3.5	2.6	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
	37.0	2.9	2.2	3.2	2.4	3.4	2.5	3.5	2.5	3.6	2.5	3.8	2.5	4.0	2.4
	39.0	2.8	2.2	3.1	2.3	3.3	2.5	3.4	2.4	3.5	2.4	3.7	2.4	3.9	2.4
	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
018	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
	10.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	12.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	14.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	16.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	18.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	20.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	21.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
	23.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9
25.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
27.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
29.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
31.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
33.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
35.0	4.6	3.5	5.1	3.8	5.4	4.0	5.6	4.0	5.8	4.0	6.1	4.0	6.4	3.9	
37.0	4.5	3.4	4.9	3.7	5.3	3.9	5.4	3.9	5.6	3.9	5.9	3.8	6.2	3.7	
39.0	4.3	3.3	4.8	3.6	5.1	3.8	5.3	3.8	5.4	3.8	5.7	3.7	6.0	3.6	

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Cassette type (MMU-UP___1HP-E / TR)

Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB		16.0°CWB		18.0°CWB		19.0°CWB		20.0°CWB		22.0°CWB		24.0°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
024	10.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	12.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	14.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	16.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	18.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	20.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	21.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	23.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	25.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	27.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	29.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	31.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	33.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
	35.0	5.8	4.3	6.4	4.6	6.9	4.9	7.1	4.9	7.3	4.9	7.7	4.9	8.1	4.7
027	37.0	5.6	4.2	6.2	4.5	6.7	4.8	6.9	4.7	7.1	4.7	7.5	4.7	7.8	4.6
	39.0	5.5	4.1	6.1	4.4	6.5	4.6	6.7	4.6	6.9	4.6	7.3	4.6	7.6	4.5
	10.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	12.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	14.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	16.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	18.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	20.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	21.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	23.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	25.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	27.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	29.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	31.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
030	33.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	35.0	6.6	4.9	7.3	5.2	7.8	5.5	8.0	5.5	8.2	5.5	8.7	5.4	9.1	5.3
	37.0	6.4	4.7	7.0	5.0	7.5	5.3	7.7	5.3	8.0	5.3	8.4	5.3	8.8	5.2
	39.0	6.2	4.6	6.8	4.9	7.3	5.2	7.5	5.2	7.8	5.2	8.2	5.1	8.6	5.0
	10.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	12.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	14.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	16.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	18.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	20.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	21.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	23.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	25.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	27.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
036	29.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	31.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	33.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	35.0	7.4	5.5	8.2	5.9	8.7	6.2	9.0	6.2	9.3	6.2	9.8	6.1	10.3	6.0
	37.0	7.2	5.3	7.9	5.7	8.5	6.0	8.7	6.0	9.0	6.0	9.5	5.9	9.9	5.8
	39.0	7.0	5.2	7.7	5.5	8.2	5.9	8.5	5.8	8.7	5.8	9.2	5.8	9.7	5.6
	10.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	12.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	14.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	16.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	18.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	20.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	21.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	23.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	25.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	27.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	29.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	31.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	33.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	35.0	9.2	6.8	10.2	7.3	10.9	7.7	11.2	7.7	11.5	7.7	12.2	7.6	12.8	7.5
	37.0	8.9	6.6	9.8	7.0	10.5	7.5	10.8	7.5	11.2	7.5	11.8	7.4	12.4	7.2
	39.0	8.7	6.4	9.6	6.8	10.2	7.3	10.5	7.2	10.9	7.2	11.5	7.2	12.0	7.0

TC: Total Capacity [kW]

SHC: Sensible Capacity [kW]

4-way Cassette type (MMU-UP__1HP-E / TR)

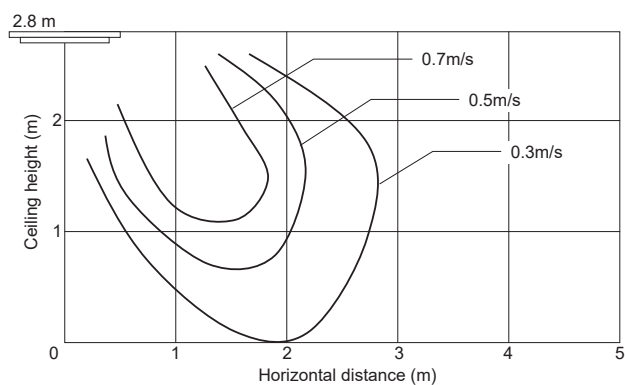
Unit size	Outdoor air temp. °CDB	Indoor air temp.													
		14.0°CWB 20°CDB		16.0°CWB 23°CDB		18.0°CWB 26°CDB		19.0°CWB 27°CDB		20.0°CWB 28°CDB		22.0°CWB 30°CDB		24.0°CWB 32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
048	10.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	12.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	14.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	16.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	18.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	20.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	21.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	23.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	25.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	27.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	29.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	31.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	33.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
	35.0	11.5	8.7	12.7	9.3	13.6	9.8	14.0	9.8	14.4	9.8	15.3	9.7	16.0	9.5
056	37.0	11.1	8.4	12.3	9.0	13.1	9.5	13.6	9.5	14.0	9.5	14.8	9.4	15.4	9.2
	39.0	10.8	8.2	12.0	8.7	12.8	9.2	13.2	9.2	13.6	9.2	14.4	9.1	15.0	8.9
	10.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	12.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	14.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	16.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	18.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	20.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	21.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	23.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	25.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	27.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	29.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	31.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	33.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	35.0	13.1	9.8	14.5	10.4	15.5	11.0	16.0	11.0	16.5	11.0	17.4	10.9	18.2	10.6
	37.0	12.7	9.4	14.1	10.1	15.0	10.7	15.5	10.6	16.0	10.6	16.9	10.5	17.7	10.3
	39.0	12.4	9.2	13.7	9.8	14.6	10.4	15.1	10.4	15.5	10.4	16.4	10.3	17.2	10.0

TC: Total Capacity [kW]

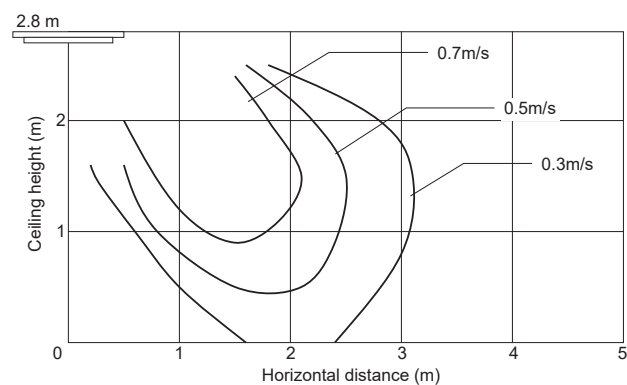
SHC: Sensible Capacity [kW]

8. Air flow distance chart

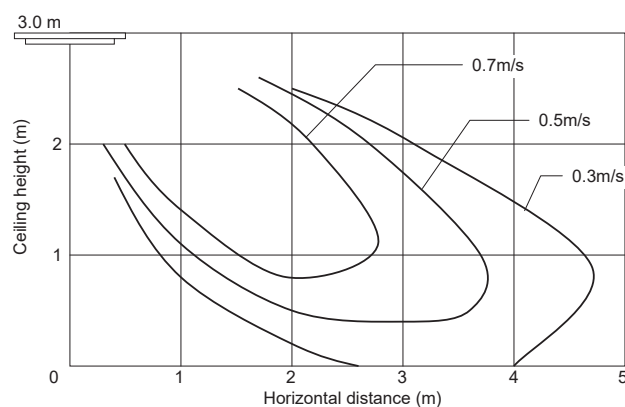
MMU-UP0091HP* / UP0121HP*



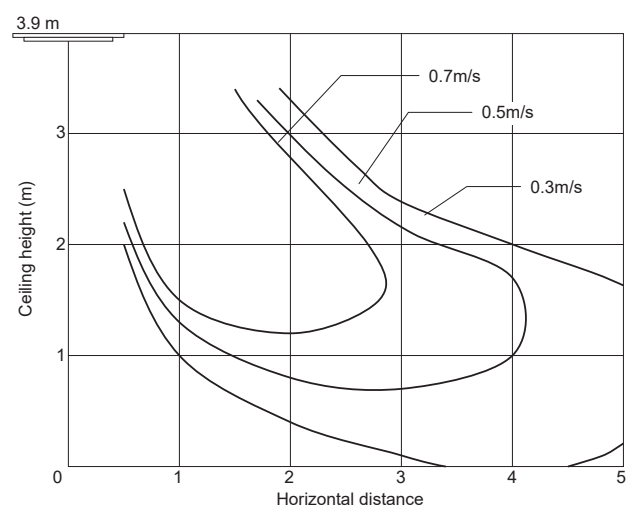
MMU-UP0151HP* / UP0181HP*



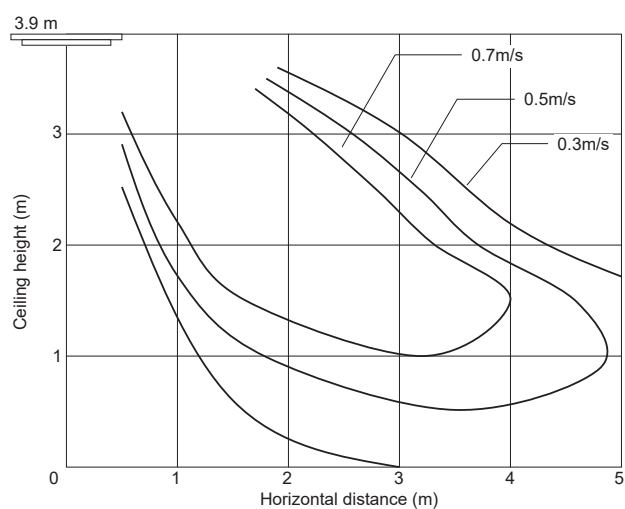
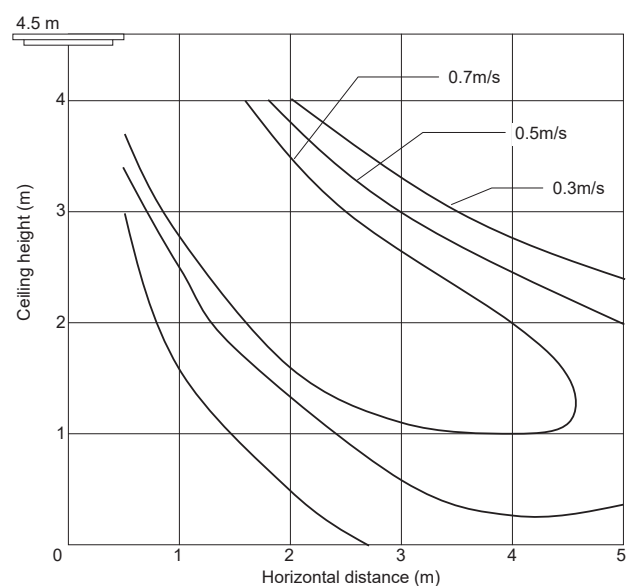
MMU-UP0241HP* / UP0271HP* / UP0301HP*



MMU-UP0361HP*



MMU-UP0481HP* / UP0561HP*

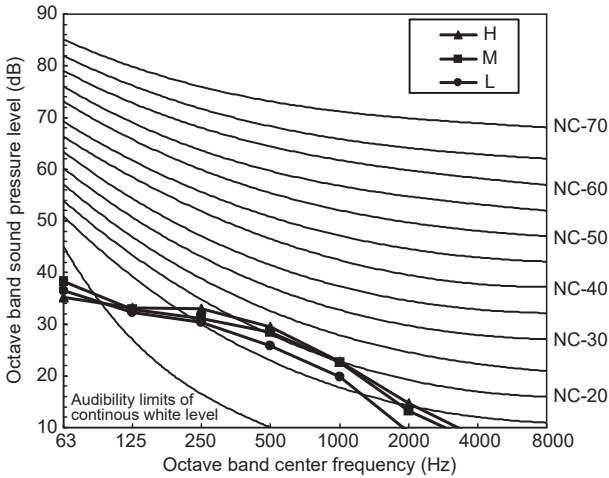
MMU-UP0361HP* / UP0481HP* / UP0561HP*
(High ceiling 3)

Remark : * - E / TR

9. Sound characteristics (NC Curve)

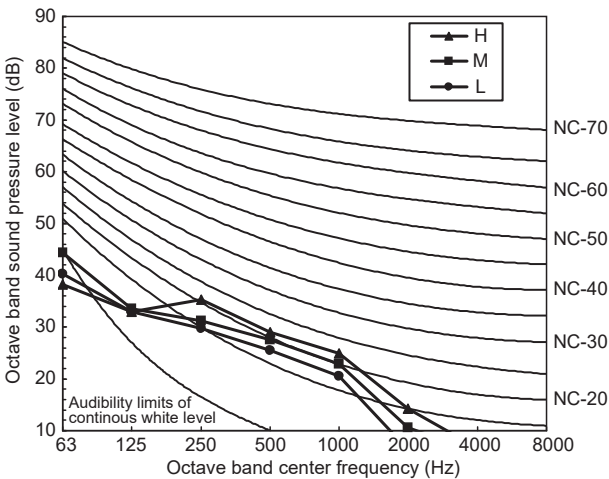
MMU-UP0091HP* / UP0121HP*

Sound pressure level(dB)(A)	H-M-L
30-29-27	



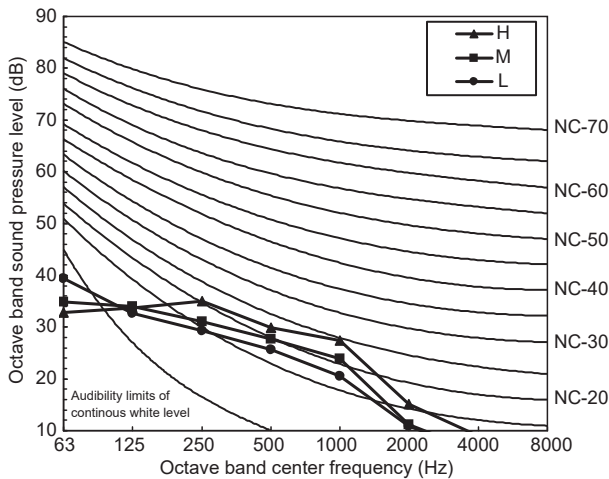
MMU-UP0151HP*

Sound pressure level(dB)(A)	H-M-L
31-29-27	



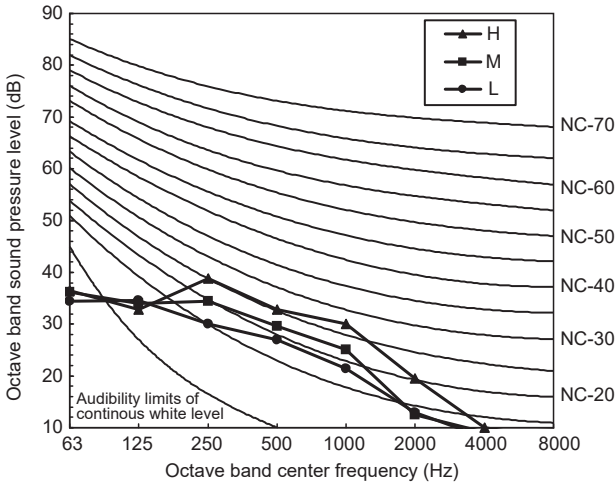
MMU-UP0181HP*

Sound pressure level(dB)(A)	H-M-L
32-29-27	



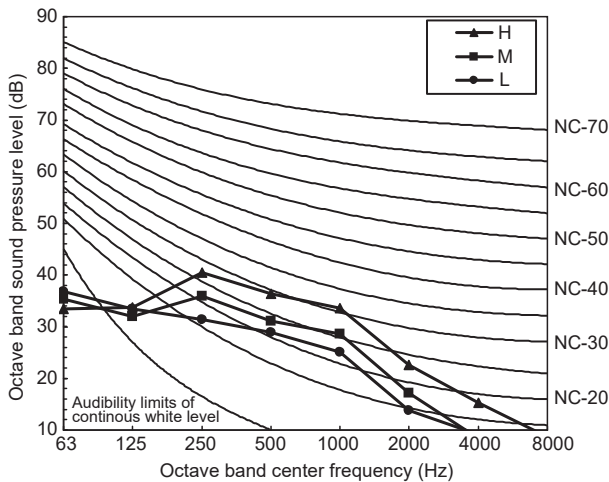
MMU-UP0241HP* / UP0271HP*

Sound pressure level(dB)(A)	H-M-L
35-31-28	



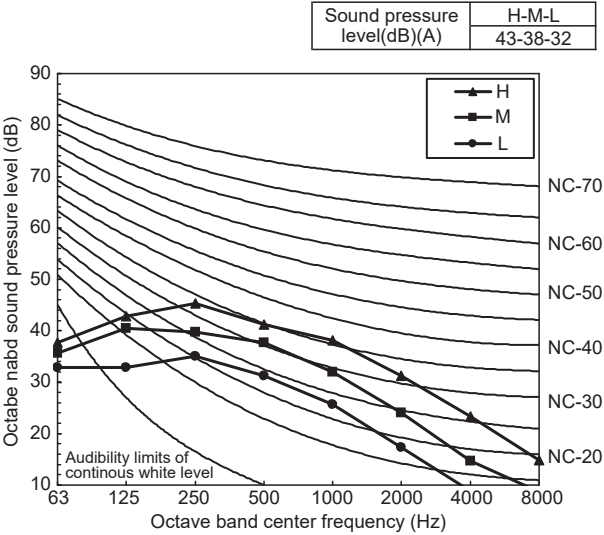
MMU-UP0301HP*

Sound pressure level(dB)(A)	H-M-L
38-33-30	

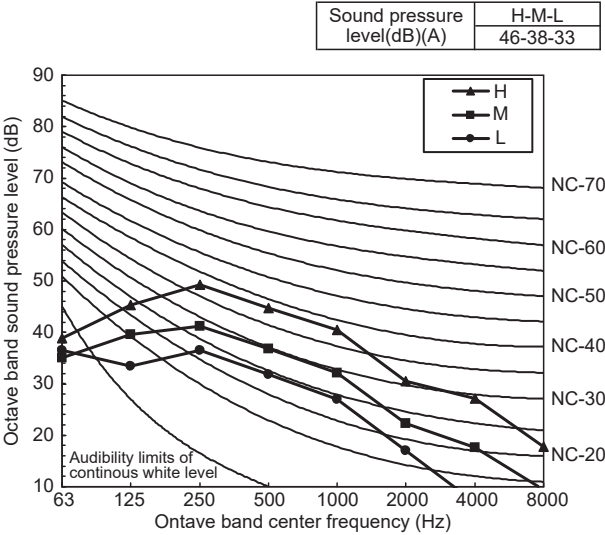


Remark : * - E / TR

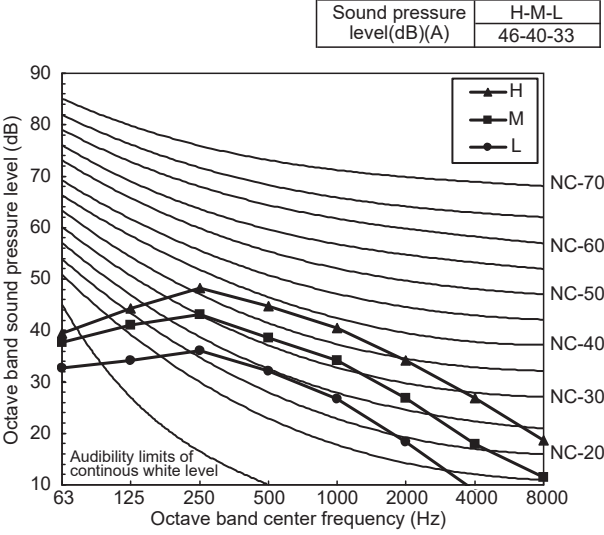
MMU-UP0361HP*



MMU-UP0481HP*



MMU-UP0561HP*



Remark : * - E / TR

10. Fresh air intake (Design guide)

Usage

The fresh air and filter chamber is used as the filter chamber.

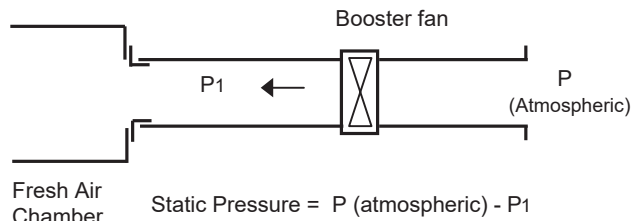
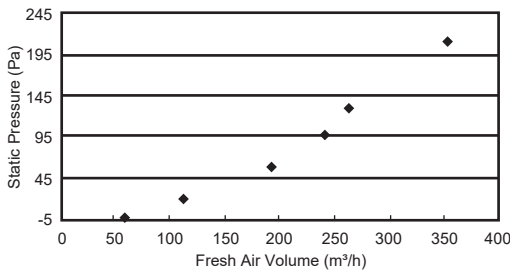
Fresh air intake by using the fresh air and filter chamber and fresh air intake box.

Usage as the filter chamber

In case the optional filter is used, air volume may decrease. This can cause decrease temperature of cooling air flow and dew drop.

Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12 °C to 30 °C
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature.
Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
In order to accelerate starting up in heating mode, implement pre-heating operation by cutting off fresh air intake.



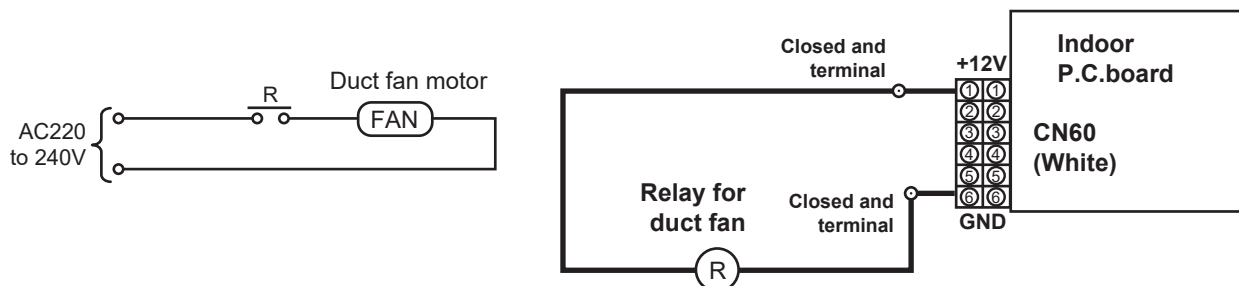
Characteristics between air volume of branching duct and static pressure

Up to 20% fresh air intake ratio is available by using the booster fan.

fresh air intake ratio = (fresh air volume) / (total air volume) X 100 %

Inter - lock circuit

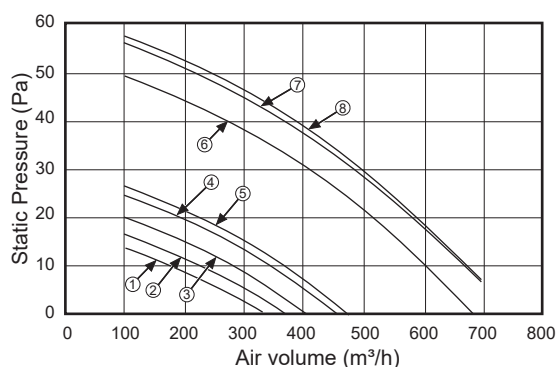
1. Connect the driving relay of the duct fan (DC 12 V) between 1 and 6 on the indoor P.C.board.
Part indicated with a bold line is the connecting circuit.
After installation, implement a test run to check that the duct fan of the indoor unit start / stop simultaneously.
(Implement the test run following to the installation manual of the indoor unit.)



11. Branching duct (Design guide)

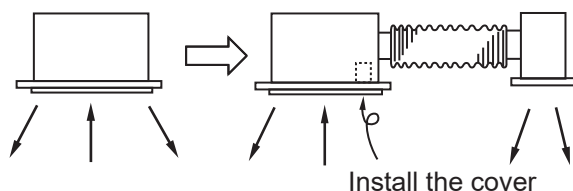
Characteristics between air volume of branching duct and static pressure

In case of connecting dia.=150mm branching duct, static pressure is as follows.



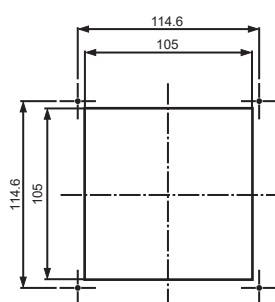
VRF	
①	009type,012type
②	015type
③	018type
④	024type,027type
⑤	030type
⑥	036type
⑦	048type
⑧	056type

Cover method

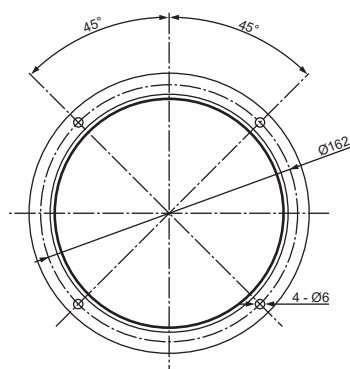


Use air discharge direction kit (TCB-BC1602UE) to cover the air discharge port.

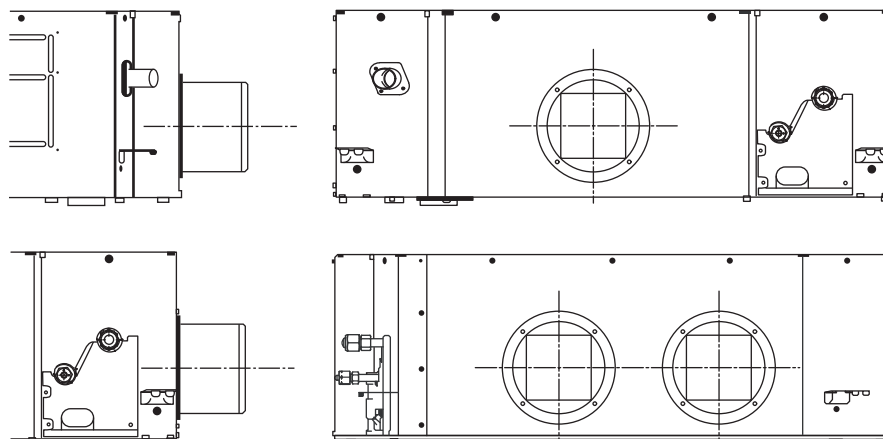
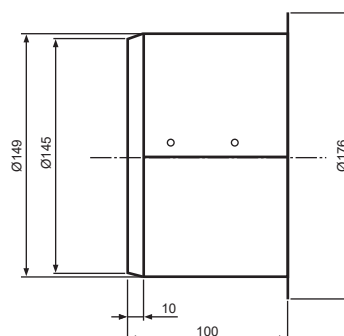
Dimension



Knockout square for branching duct in indoor unit



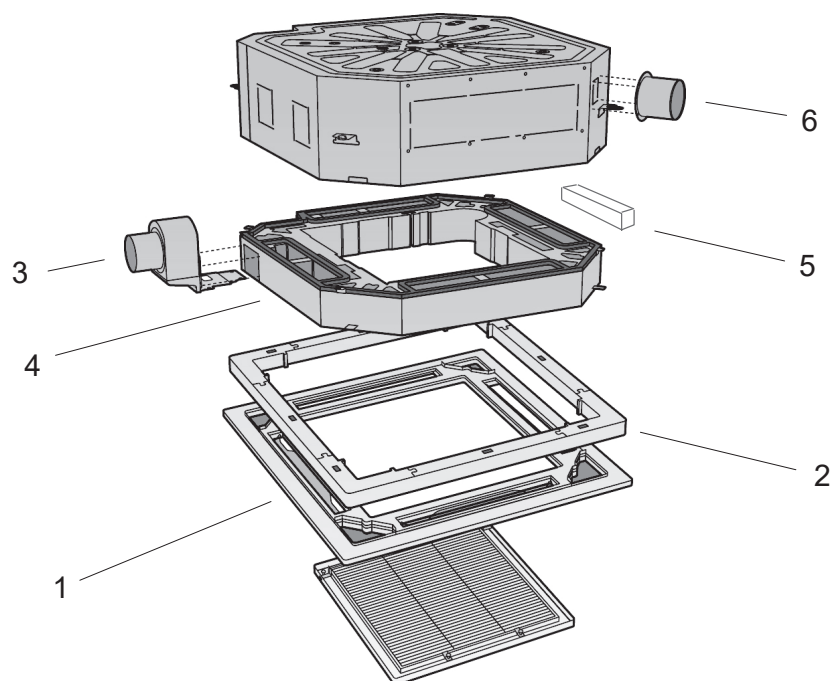
Design sample of branching duct flange



Installation sample

12. Accessories

Optional parts for 4-way cassette



Optional parts list

No	Type	Model name	Qty/unit	Note
1	Ceiling Panel (wide-flow louver)	RBC-U32PGP-E	1	White (2.5GY9.0/0.5)
2	Spacer for height adjustment	TCB-SP1602UE	1	50mm
3	Fresh-air chamber	TCB-GFC1602UE	1	use with TCB-GB1602U
4	Fresh-air intake box	TCB-GB1602UE	1	connection=Dia.100mm Fresh air intake ratio : Up to 110m ³ /h by 1chamber
5	Air-discharge direction kit	TCB-BC1602UE	1	6-direction patterns
6	Auxiliary fresh air flange	TCB-FF101URE2	1	connection=Dia.100mm Fresh air intake ratio : Up to 30m ³ /h

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