TOSHIBA

TCTC-E21-VRF022-3

Engineering Data Book

Fresh Air Intake Indoor Unit Type

MMD-UP0481HFP-E / TR
MMD-UP0721HFP-E1 / TR1
MMD-UP0961HFP-E1 / TR1
MMD-UP1121HFP-E1 / TR1
MMD-UP1281HFP-E1 / TR1

Contents

1. Outline of Fresh Air Intake unit

- **Type : Concealed Duct High Static Pressure type**
  Five models (Standard air flow(HP) ; 1080 m3/h (5HP), 1680 m3/h (8HP), 2100 m3/h (12HP), 2520 m3/h (12HP), 3060 m3/h (14HP)) are prepared.

- **Connectable outdoor unit**
  The fresh air intake unit is connectable to SMMS (Super Modular Multi system series). However this is not connectable to SHRM (Super Heat Recovery Multi system series) and, Mini-SMMS (MCY-** series).

- **Corresponding system**
  Corresponding to a system in which there are the fresh air intake indoor units and the other indoor units, or all fresh air intake connection. Connecting the Fresh Air Intake units with the Outdoor units has some combination depends on Outdoor units series.

Outdoor unit series	Connect with other indoor units	All Fresh Air Intake Connection
SMMS∞	✓	✓
SMMS-u	✓*1	✓*1
SMMS-7	✓	✓*2
SMMS-e*3	✓	✓*2
SMMS-i	✓	N/A

NOTE :
1 : MMD-UP1121HFP and MMD-UP1281HFP* can be connected with SMMS-u only.
*2 : Combination of Intoor units are decided for Outdoor unit capacity type.
*3 : Except MMY-SAP****HT8* series

- **Wide Air flow range**
  Air flows are selectable from 5 taps by remote controller

- **External static pressure choise**
  External static pressure can be from 7 steps (50 Pa to 200Pa) by DN code

- **Expand operating temperature**
  Operating temperature : -10 °C to 46 °C (connected with SMMS-u)

- **Support New communication line (TU2C-LINK)**

- **Available Opition Parts**
  Fresh Air Intake unit can do use High Efficiency Filter / Long Life filter.
  Drain pump kit is available.*4
  4 : MMU-UP0481HFP is prepared drain pump as standard equipment.

- **Definition**

  The Fresh Air Intake indoor unit is an air handling unit to take fresh air for ventilation. Taking the fresh air into the system affects a normal control of the air conditioner to become more difficult and be in demand of a higher cooling capacity. Therefore, the air handling unit will treat the fresh air to the relevant room temperature before sending the treated fresh air to the main air conditioner systems.This air handling unit is called a Fresh Air Intake indoor unit.

NOTE:

The Fresh Air Intake unit is an air conditioner provided to handle the fresh air load and is not to control the room temperature. For correspondence to the indoor air controller, set an air conditioner separately.

2. System combination

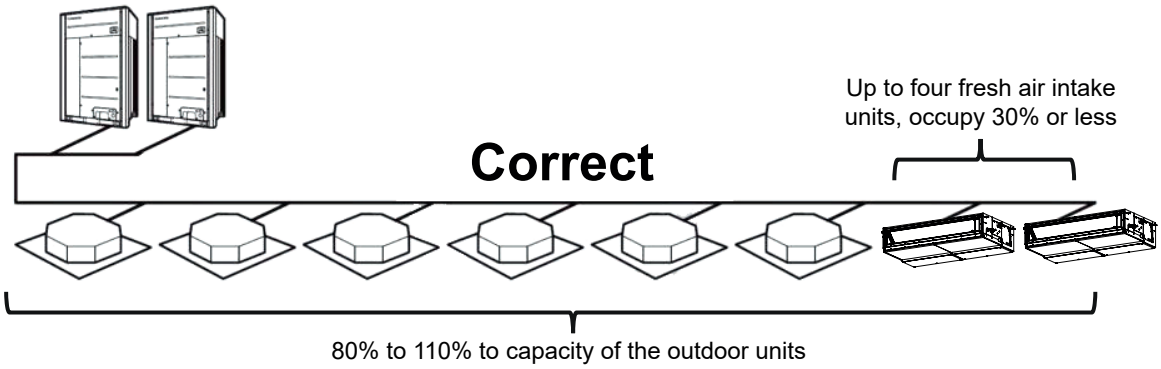
・Connecting the Fresh air intake units with the Outdoor units has some combination depends on Outdoor unit series.

・When two Fresh air intake units or more are installed into one refrigerant line, all the units to be installed must be the same model (MMD-UP***HFP*).

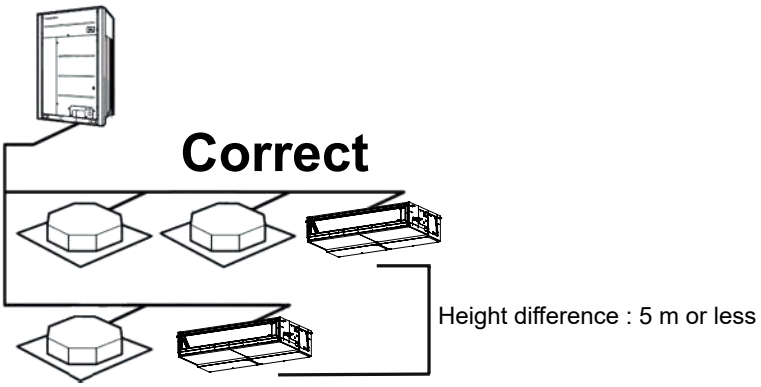
2-1 Case of SMMS-u sereies

1. The total capacity of the indoor units and the fresh air intake units is restricted to 80% to 110% against the capacity of the outdoor units.

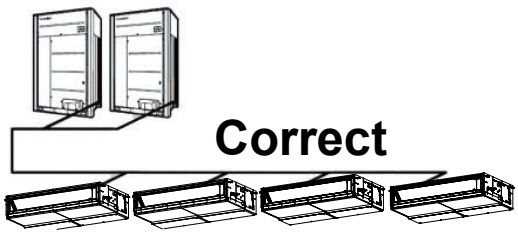
2. Up to fresh air intake units can be connected on one line of the multi system. The allowable total Capacity of the four fresh air intake units shall 30% or less against the total capacity of the indoor units (Including the fresh air intake units).



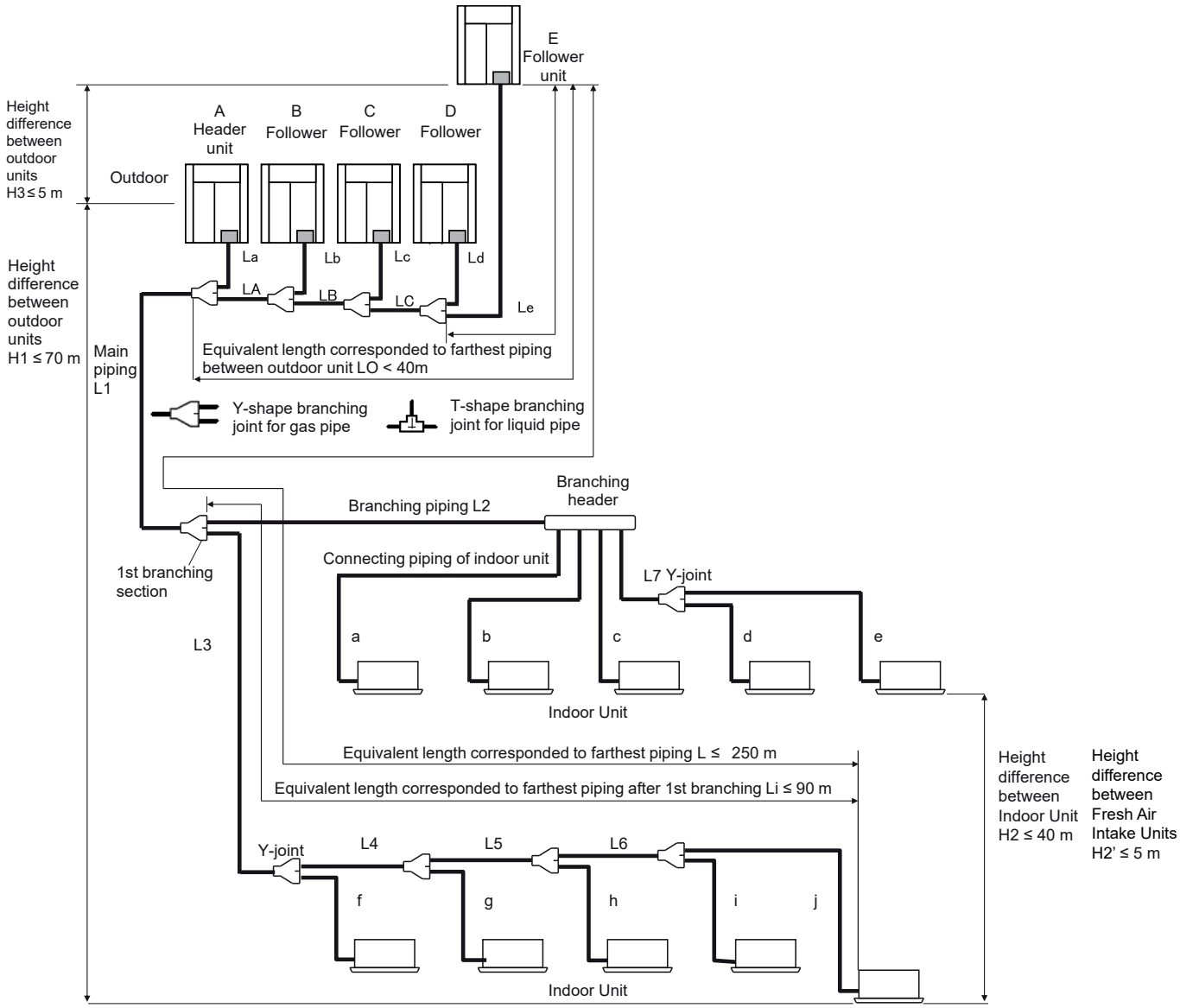
・Keep the height difference between the fresh air intake units to 5 m or less



・All fresh air intake unit connection



■ Allowable length/height difference of refrigerant piping



System restrictions

	Multi FCU Connection	All fresh air intake connection
Max. capacity of combined outdoor units	120 HP	48 HP*1
Max. No. of combined indoor units	128 units	—
Max. No. of combined Fresh Air Intake units	4 units	4 units
Max. capacity of combined indoor units	110 % (Include Fresh Air Intake units)	110 %
Fresh Air Intake units occupy of the total capacity of combined indoor units	30 % or less	—

*1: Max capacity with SMMS∞ comnination is 52HP.

Allowable length and height difference of refrigerant piping

				Allowable value	Piping section
Piping length	Total extension of pipe (Liquid pipe, real length)		Single outdoor unit system	500 m	LA+LB+LC+La+Lb+Lc+Ld+Le+L1+L2+L3 +L4+L5+L6+L7+a+b+c+d+e+f+g+h+i+j
			Multiple outdoor unit system	1200 m (*6)	
	Farthest piping Length L (*1)		Equivalent length	250 m	LA+LB+LC+Le+L1+L3+L4+L5+L6+j
			Real length	210 m	
	Equivalent length of farthest piping from 1st branching Li (*1)			90 m (*2)	L3 + L4 + L5 + L6 + j
	Equivalent length of farthest piping between outdoor units LO			40 m	LA+LB+LC+Le (LA+LB+LC+Ld)
	Max. equivalent length of main piping		Equivalent length	120 m (*3)	L1
			Real length	100 m (*3)	
	Max. equivalent length of outdoor unit connecting piping			10 m	Le (La, Lb, Lc, Ld)
	Max. real length of indoor unit connecting piping			30 m	a, b, c, d, e, f, g, h, i, j
	Max. equivalent length between branches			50 m	L2, L3, L4, L5, L6, L7
Difference in height	Height between indoor and outdoor units H1		Upper outdoor unit	70 m (*4)(*7)	–
			Lower outdoor unit	40 m (*5)(*8)	–
	Height between indoor units H2			40 m (*9)	–
	Height between outdoor units H3			5 m	–

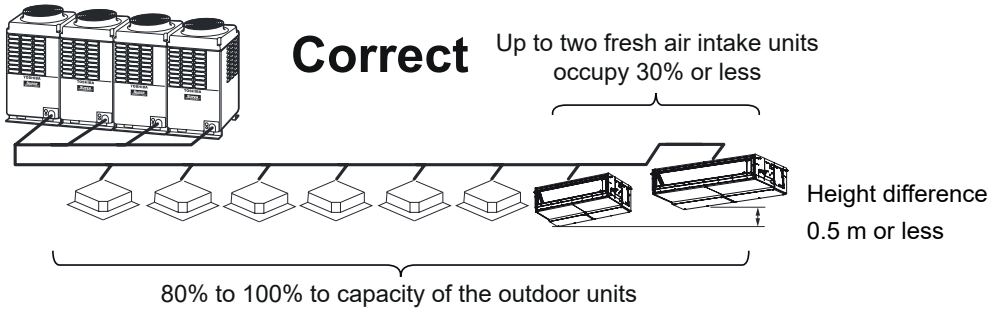
(*1) : (e) is outdoor unit furthest from the 1st branch and (j) is the indoor unit furthest from the 1st branch.
(*2) : If the height difference between indoor and outdoor unit(H1) exceeds 3 m, set 65 m or less.
(*3) : If the max. combined outdoor unit capacity is 54HP or more, then max. equivalent length is 70 m or less (real length is 50 m or less).
(*4) : If the height difference between indoor units(H2) exceeds 3 m, set 50 m or less.
(*5) : If the height difference between indoor units(H2) exceeds 3 m, set 30 m or less.
(*6) : Total charging refrigerant is 140kg or less.
(*7) : Extension up till 110m is possible with conditions below :
-Single outdoor unit system
-Connected ratio of indoor units to outdoor units is below 105%
-Liquid side is been increased 1 size from the standard size
-The height difference between indoor units(H2) is 3m or less.
(*8) : Extension up till 110m is possible with conditions below :
-Multiple outdoor unit system
-Connected Ratio of indoor units to outdoor units is below 105%
-Minimum capacity of connecting indoor unit is more than 3HP
-The height difference between indoor units(H2) is 3m or less.
(*9) : If the connected ratio of indoor units to outdoor units is more than 105%, set 15 m or less

2-2 Case of other than SMMS-u sereies

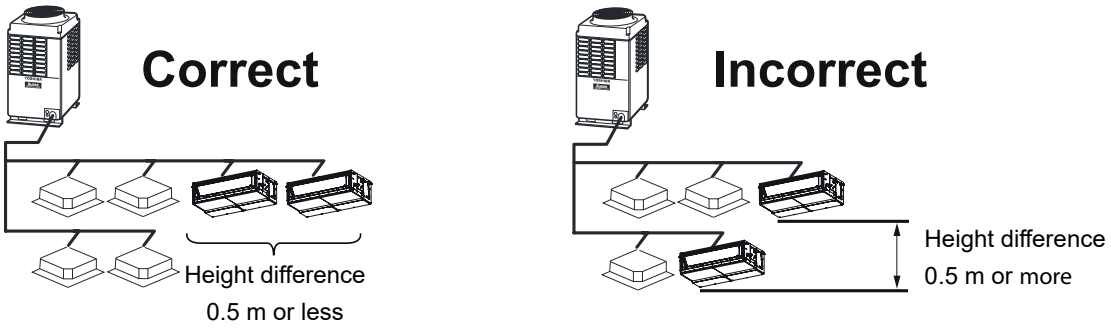
1. The fresh air intake unit is usually used together with the indoor units on one line of the multi system. The fresh air intake unit only cannot be connected.

2. The total capacity of the indoor units and the fresh air intake units is restricted to 80% to 100% against the capacity of the outdoor units. (This restriction should be strictly kept for correct control of the refrigerant.)

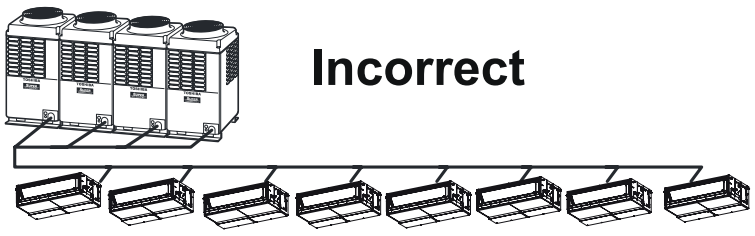
3. Up to two fresh air intake units can be connected on one line of the multi system. The allowable total capacity of the fresh air intake units shall be 30% or less against the total capacity of the indoor units (including the fresh air intake units).



・Keep the height difference between the fresh air intake units to 0.5 m or less



・All fresh air intake unit connection

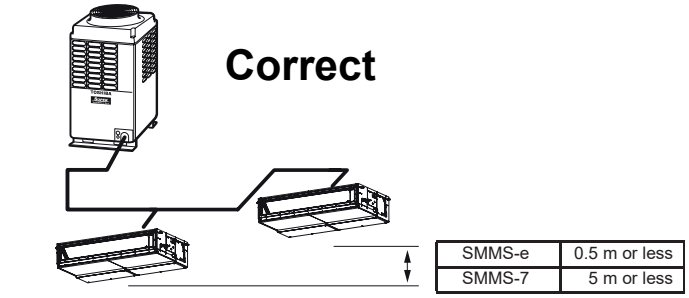


■ Allowable length/height difference of refrigerant piping

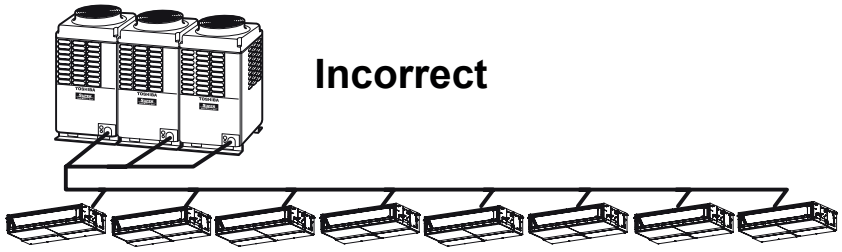
◆ Please refer to each "Outdoor units Installation Manual" expect the above contents.

2-3 Case of setting for All Fresh Air Intake unit connection (SMMS-e or SMMS-7)

- System that connected to Fresh Air Intake Unit only can be used with only single Outdoor unit on one line of the multi system. The combination of indoor units is only available specified in following Table 2.



SMMS-e	0.5 m or less
SMMS-7	5 m or less



■ The combination of Indoor units

1. The capacity code of Indoor unit is decided for each capacity type.

Indoor unit model name MMD-	UP0481HFP*	UP0721HFP*	UP0961HFP*
Indoor unit capacity type	048	072	096
Indoor unit capacity code	5.00	8.00	10.00

2. Combination of Indoor units is decided for Outdoor unit capacity type. It allows only the combinations of Indoor units below.

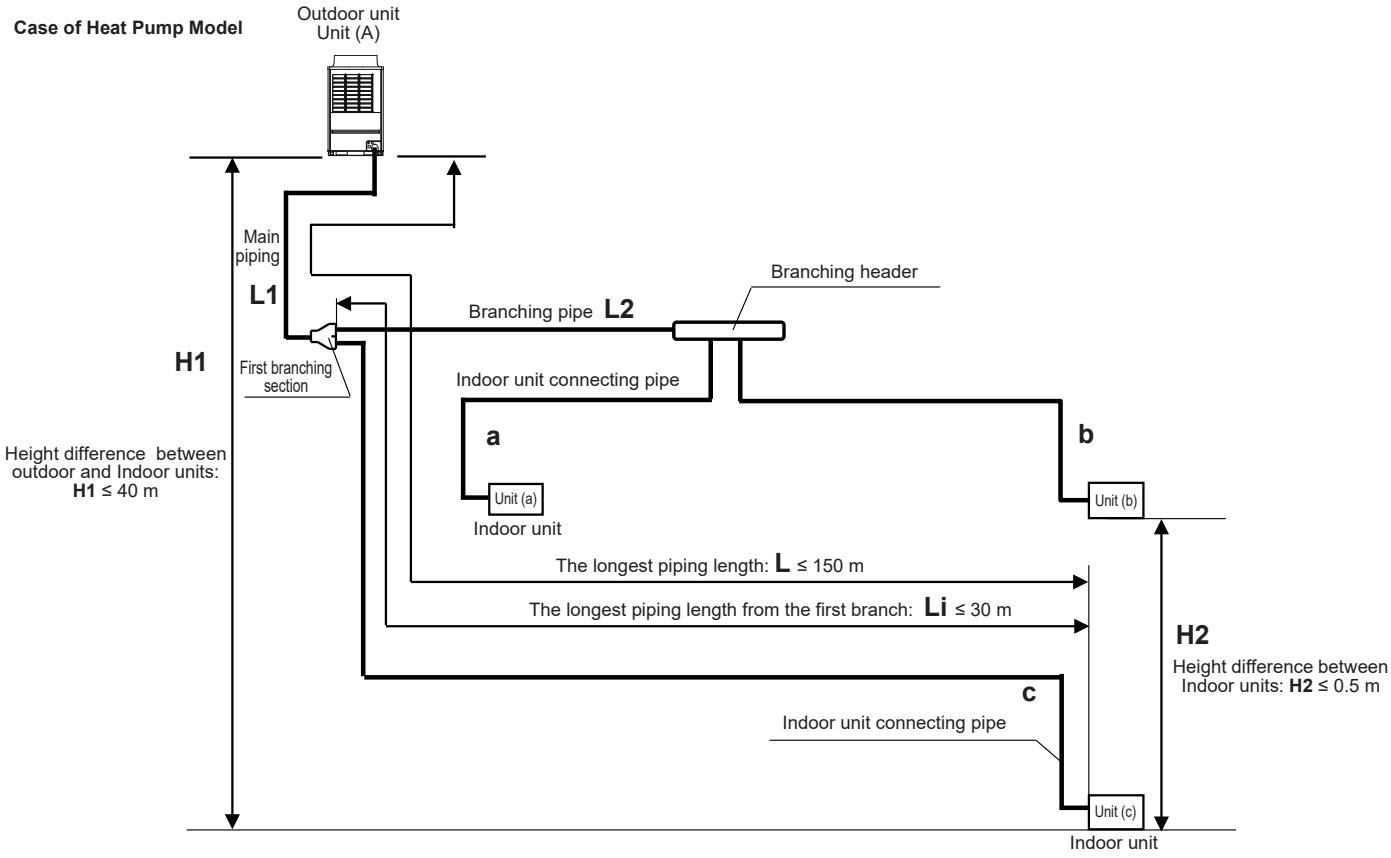
Outdoor unit capacity type		Outdoor unit capacity code	Combination of Indoor unit capacity type		
SMMS-e	SMMS-7		Number of indoor units		
			1	2	3
MMY-MAP0806*	MMY-MAP0807*	8.00	072	-	-
MMY-MAP1006*	MMY-MAP1007*	10.00	096	048 + 048	-
MMY-MAP1406*	MMY-MAP1407* MMY-MAP14A7*	14.00	-	072 + 048	-
MMY-MAP1606*	MMY-MAP1607*	16.00	-	072 + 072	048 + 048 + 048
			-	096 + 048	-
MMY-MAP1806*	MMY-MAP1807*	18.00	-	096 + 072	072 + 048 + 048
MMY-MAP2006*	MMY-MAP2007*	20.00	-	096 + 096	096 + 048 + 048
MMY-MAP2206*	MMY-MAP2207*	22.00	-	-	072 + 072 + 048
	MMY-MAP2407*	24.00	-	-	072 + 072 + 072

■ Allowable length/height difference of refrigerant piping

⚠ CAUTION

- **Length and height of refrigerant piping keep the limitation blow.**
  If installed in out of the Limitation, there is a possibility that heat-exchanger in Outdoor unit will burst and leak a refrigerant gas, for freezing heat-exchanger by Shortage of defrosting capacity.

Case of Heat Pump Model



◆ System restrictions

Max. No. of combined Outdoor units	**1 unit**
Max. capacity of combined Outdoor units	**22 HP**
Max. No. of combined Indoor units	**3 units**
Max. capacity of combined indoor units	**Refer to "■ The combination of Indoor units**

◆ Cautions for installation

- Y-shaped branching joint must be installed horizontally.

◆ Allowable length and height difference of refrigerant piping

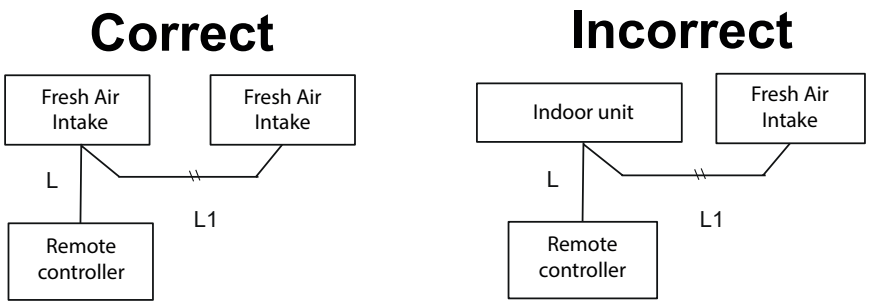
			Allowable value (m)			Pipes
			SMMS-e		SMMS-7	
			Heat Pump Model	Cooling only Model	Cooling only Model	
Pipe length	Total extension of pipe (Liquid pipe)	Actual length	**300**	**300**	**300**	**L1 + L2 + a + b + c**
	Farthest piping length **L** (*1)	Equivalent length	**150**	**235**	**235**	**L1 + c**
		Actual length	**130**	**190**	**190**	
	Main piping length	Equivalent length	**Max. 120 (Min. -)**	**Max. 120 (Min. -)**	**Max. 120 (Min. -)**	**L1**
		Actual length	**Max. 100 (Min. 50)**	**Max. 100 (Min. -)**	**Max. 100 (Min. -)**	
	Farthest equivalent piping length from the first branching section **Li** (*1)	Equivalent length	**30**	**90**	**90**	**c**
	Farthest equivalent piping length between Outdoor units **LO**	Equivalent length	—	—	—	—
	Maximum equivalent piping length of Outdoor unit connecting pipe	Equivalent length	—	—	—	—
	Maximum actual length of pipes connected to Indoor units	Actual length	**30**	**30**	**30**	**a, b, c**
	Maximum equivalent length between branching sections	Equivalent length	**30**	**30**	**30**	**L2**
Height difference	Height between outdoor and Indoor units **H1**	Upper Outdoor units	**40**	**70**	**70**	—
		Lower Outdoor units	**3**	**40**	**40**	—
	Height between Indoor units **H2**		**0.5**	**0.5**	**5**	—
	Height between Outdoor units **H3**		—	—	—	—

(*1): Farthest Indoor unit from the first branching section is the Indoor unit (c).

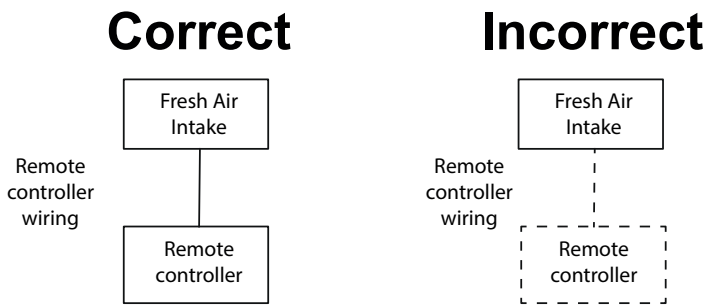
◆ Please refer to "Outdoor Unit's Installation Manual" except the above contents.

2-4 Restrictions of the control system

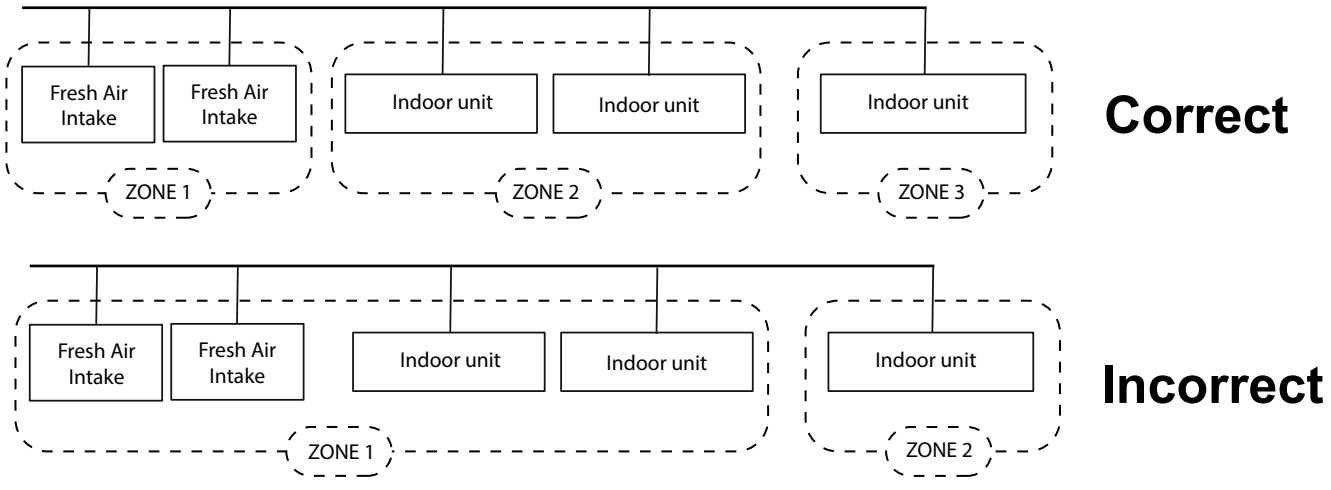
1. The fresh air intake unit and indoor unit for air conditioning cannot be connected as a group control.



2. The fresh air intake unit cannot be using as a remote controller-less system. Should be connect the wired remote controller as a main remote controller.

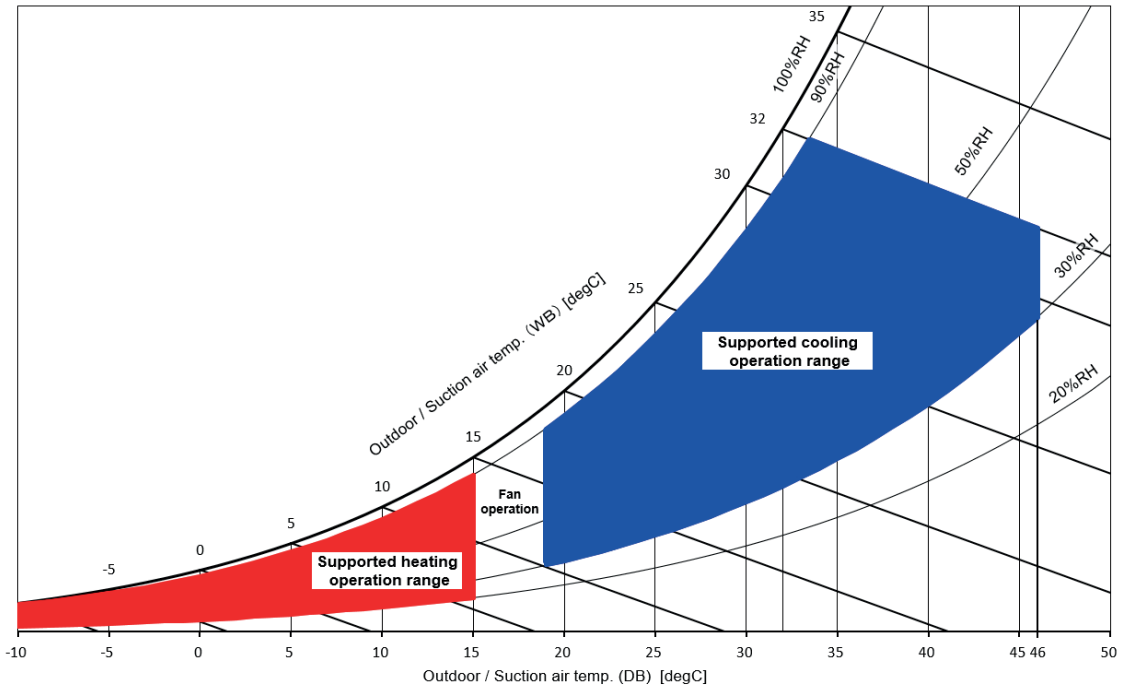


3. When using a central remote controller, the indoor air conditioners and the Fresh Air Intake units should be separate the ZONE setting.



3. Operation range / Operation mode

3-1 Operation range



Note : Outdoor/Suction air temp. 46 - 52 °C(DB) is also available but Temporaty operatable.

COOL : Cools the fresh air and sends it into the room
HEAT : Heats the fresh air and sends it into the room
FAN : Sends the fresh air as it is

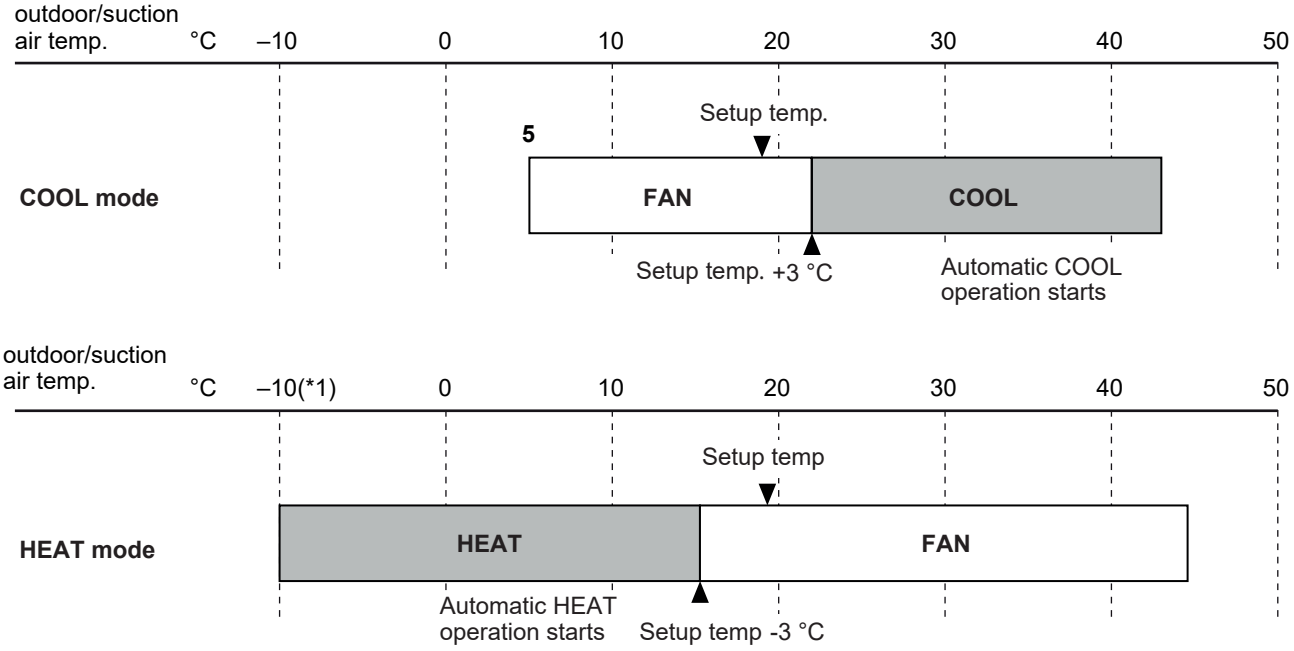
The fresh air intake unit controls temperature of the supply air so that it is close to the setup temperature of the remote controller
However temperature of the supply air may not be close to the setup temperature according to temperature of the outdoor/suction air of the operation condition of the indoor units for air conditioning in one line

REQUIREMENT

- The air conditioner with the fresh air intake unit cannot control room temperature.
- For control of the room temperature, an indoor unit for air conditioning is required separately

3-2 Operation mode

- In COOL mode, if temperature of the outdoor/suction air is under the setup temp. +3 °C, FAN status is automatically made.
  When temperature of the outdoor/suction air is under 19 °C, FAN status is also made regardless of the setup temperature
- In HEAT mode, if temperature of the outdoor/suction air is over the setup temp -3 °C, FAN status is automatically made.
  When temperature of the outdoor/suction air is over 15 °C, FAN status is also made regardless of the setup temperature.



■ Special mentions

- In “COOL” or “FAN” mode, if temperature of the outdoor/suction air is under 5 °C, the operation stops automatically in order to protect the equipment.
  In this case, continue the operation by selecting “HEAT” mode.
- In “HEAT” mode, if temperature of the outdoor/suction air is under - 10 °C (*1) the operation stops automatically in order to protect the equipment.
  When operating the fresh air intake unit with the outdoor/suction temperature under - 10 °C (*1), make sure to control over - 10 °C (*1) using a duct heater (locally procured).
  For details, consult the dealer which you purchased the air conditioner.

*1 : In the case of combining with SMMS-u outdoor unit, the temperature capable of operating is -10 °C or more. In the case of combining with outdoor unit other than SMMS-u, the temperature capable of perating is to - 5 °C or more

- The fan operation stops during defrost. However the fan operation is enabled to set ON by setting on site. More detail, please refer to "14. Applicable controls".

■ Select the temperature (Setup Discharge Air temperature)

Super Modular Multi System u series (SMMS-u)

Operation mode	Temperature setting range	Factory default
Cool	13 to 25 °C	18 °C
Heat	18 to 30 °C	25 °C

Other than Super Modular Multi system u series (SMMS-u)

Operation mode	Temperature setting range	Factory default
Cool	16 to 27 °C	18 °C
Heat		25 °C

4. Specifications

Model name		MMD-	UP0481HFP-E/TR
Cooling capacity	(Note1)	kW	14.0
Heating capacity	(Note1)	kW	8.9
Electrical characteristics	Power supply		1phase 50Hz 230V(220V-240V)
	Running current	A	0.77
	Power consumption	kW	0.11
	Starting current	A	2.01
Outer dimension	Height	mm	327
	Width	mm	1430
	Depth	mm	750
Main unit weight		kg	44
Heat exchanger			Finned tube
Soundproof / Heat-insulation material			Non-flammable insulation
Fan			Centrifugal fan
Standard air flow(H / M+ / M / L+ / L)		m3/h	1080/990/930/ 840/760
Motor		kW	0.35
External static pressure (factory default)		Pa	100
External static pressure		Pa	200-175-150-125-100-75-50
Air flow limit	Lower limit	m3/h	600
	Upper limit	m3/h	1320
Air filter			Field supply
Controller			Wired remote controller
Connecting pipe	Gas pipe	mm	Ø 15.9
	Liquid pipe	mm	Ø 9.5
	Drain pipe	mm	25 (Polyvinyl chloride tube)
Sound pressure level(H / M+ / M / L+ / L)		dB(A)	38/37/35/32/31
Operation range for SMMS-u	Cooling (Note 2)	°C DB	5～46(Note 4)
	Heating (Note 3)	°C DB	-10~46
Operation range for SMMS-i, SMMS-e,SMMS-7	Cooling (Note 2)	°C DB	5～46(Note 5)
	Heating (Note 3)	°C DB	-5~46

* The setting temperature is Cooling:13 - 25°C, Heating:18-30°C

* Height difference between Outside Air units must be within 5 m

Note 1: Rated conditions Cooling : Outdoor air temperature 33°C DB/28°C WB, setting temperature 18°C
Heating : Outdoor air temperature 0°C DB/-2.9°C WB, setting temperature 25°C

Note 2: When supply air temperature is “setting temperature + 3°C” or less, Outside Air unit operates as FAN mode

Note 3: When supply air temperature is “setting temperature - 3°C” or over, Outside Air unit operates as FAN mode

Note 4: 46~52 °C is also available but Temporary operatable

Note 5: All Fresh Air system support up to 46°C operation
In case the system mixing with AC indoor units, there may have cooling capacity impact over 43°C

Model name		MMD-UP	0721HFP-E1/TR1	0961HFP-E1/TR1	1121HFP-E1/TR1	1281HFP-E1/TR1
Cooling capacity	(Note1)	kW	22.4	28.0	33.5	40.0
Heating capacity	(Note1)	kW	13.9	17.4	20.8	25.2
Electrical characteristics	Power supply		1phase 50Hz 230V (220-240V)			
	Running current	A	0.86	1.07	1.30	1.83
	Power consumption	kW	0.16	0.20	0.25	0.33
	Starting current	A	7.80	7.80	7.80	7.80
Outer dimension	Height	mm	477			
	Width	mm	1430			
	Depth	mm	900			
Main unit weight		kg	99			
Heat exchanger			Finned tube			
Soundproof / Heat-insulation material			Non-flammable insulation			
Fan			Centrifugal fan			
Standard air flow(H / M+ / M / L+ / L)		m3/h	1680/1560/1440 /1320/1200	2100/1950/1800 /1620/1470	2520/2340/2130 /1950/1770	3060/2820/2580 /2370/2130
Motor		kW	1.0			
External static pressure (factory default)		Pa	100			
External static pressure		Pa	200-175-150-125-100-75-50			
Air flow limit	Lower limit	m3/h	960	1,320	1,500	1,800
	Upper limit	m3/h	2,040	2,520	3,060	3,600
Air filter			Field supply			
Controller			Wired remote controller			
Connecting pipe	Gas pipe	mm	Ø22.2		Ø28.6	
	Liquid pipe	mm	Ø12.7			Ø15.9
	Drain pipe	mm	25 (Polyvinyl chloride tube)			
Sound pressure level(H / M+ / M / L+ / L)		dB(A)	38/37/36/35/33	39/38/36/35/33	40/39/37/36/34	42/40/38/37/35
Operation range for SMMS-u	Cooling (Note 2)	°C	5~46(Note 4)			
	Heating (Note 3)	°C	-10~46			
Operation range for SMMS-i, SMMS-e,SMMS-7	Cooling (Note 2)	°C	5~46 (Note 5)			
	Heating (Note 3)	°C	-5~46			

* The setting temperature is Cooling:13 - 25°C, Heating:18-30°C

* Height difference between Outside Air units must be within 5 m

Note 1: Rated conditions Cooling : Outdoor air temperature 33°C DB/28°C WB, setting temperature 18°C
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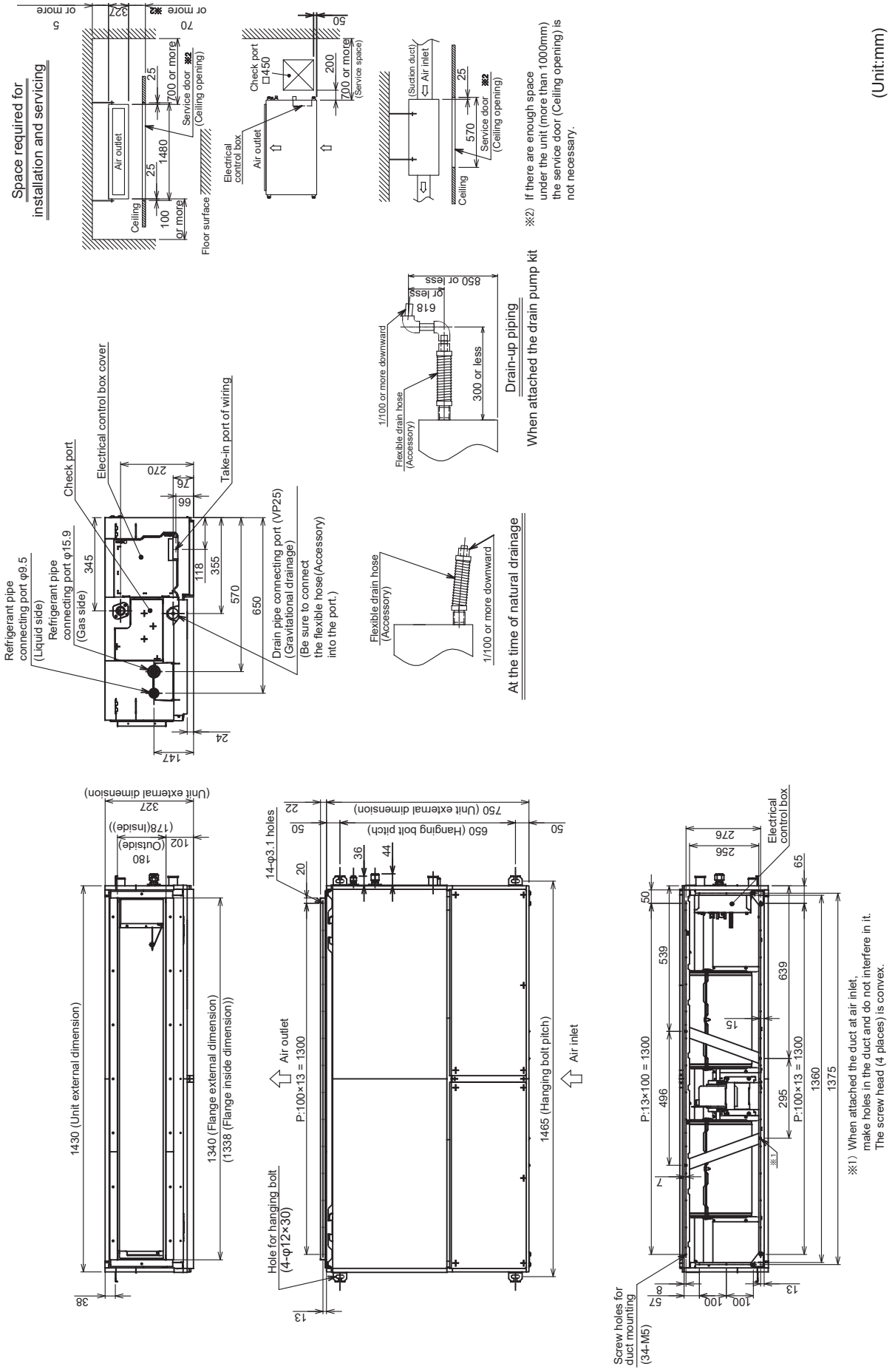
Note 3: When supply air temperature is “setting temperature - 3°C” or over, Outside Air unit operates as FAN mode

Note 4: 46~52 °C is also available but Temporary operatable.

Note 5: All Fresh Air system support up to 46°C operation
In case the system mixing with AC indoor units, there may have cooling capacity impact over 43°C

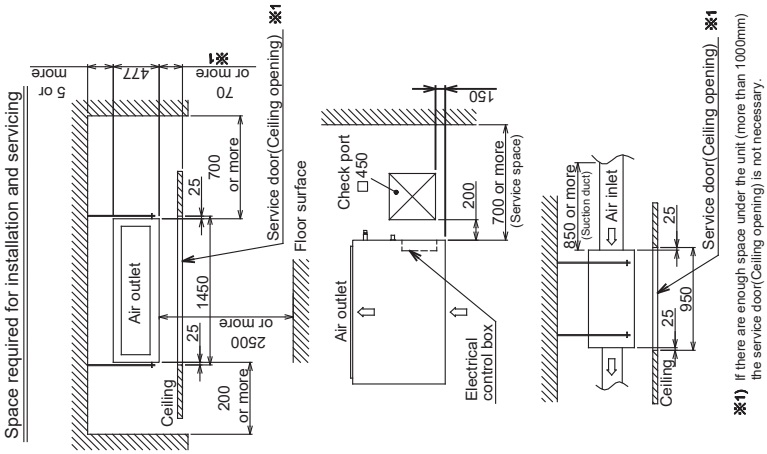
5. Dimensions

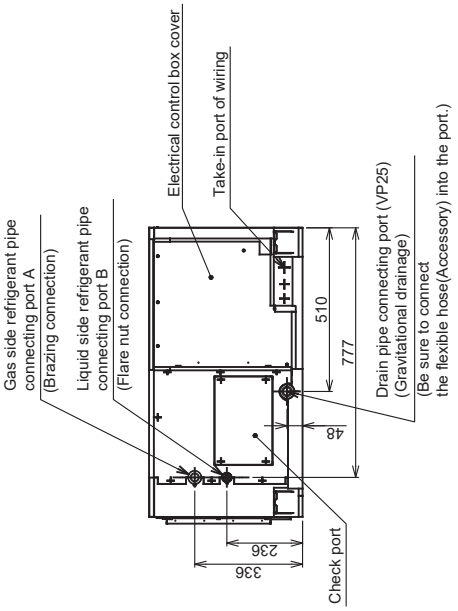
MMD-UP0481HFP-E/TR



MMD-UP0721HFP-E1/TR1, MMD-UP0961HFP-E1/TR1 MMD-UP1121HFP-E1/TR1, MMD-UP1281HFP-E1/TR1

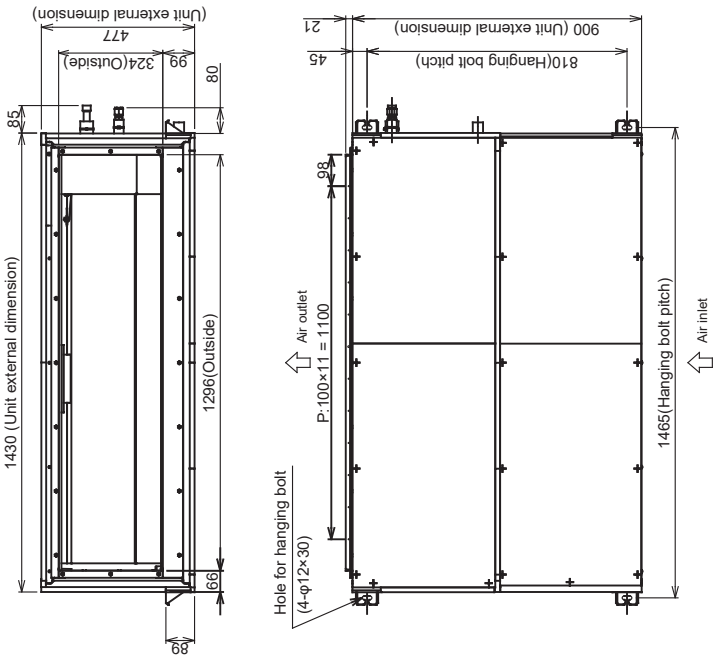
(Unit : mm)

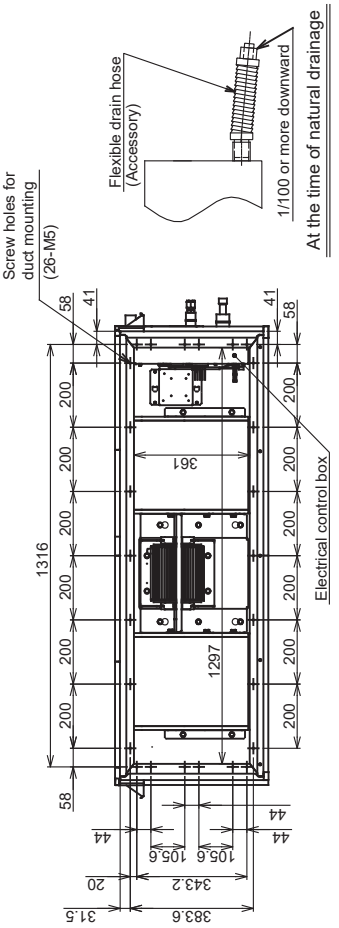




Connecting pipe size

Model	Pipe size		Remarks
0721 0961	A(Gas)	φ22.2	
	B(Liquid)	φ12.7	
1121	A(Gas)	φ28.6	Use the SOCKET(Accessory)
	B(Liquid)	φ12.7	
1281	A(Gas)	φ28.6	Use the SOCKET(Accessory)
	B(Liquid)	φ15.9	Use the LIQUID JOINT PIPE(Accessory)

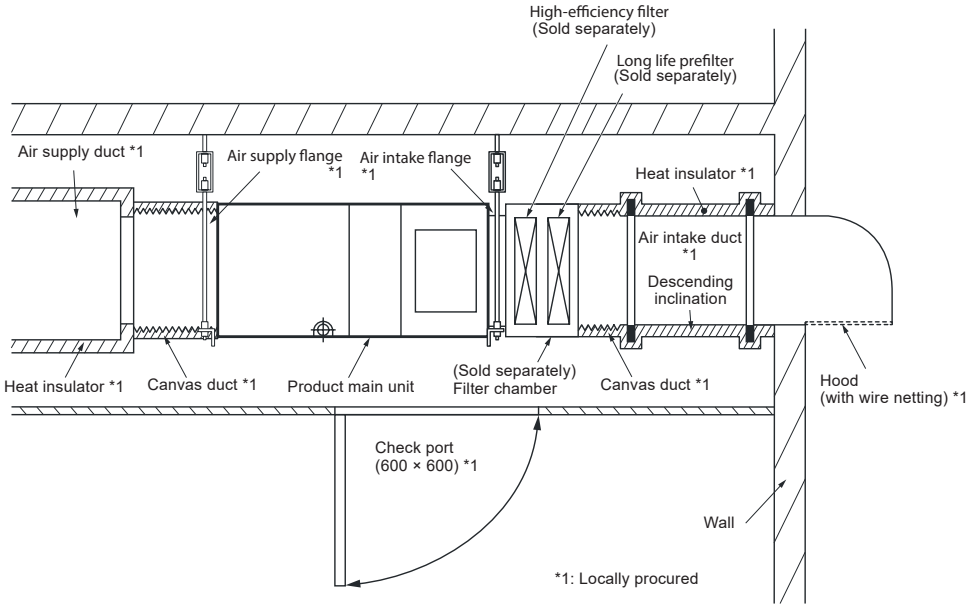




<Installation notice>

1. Be sure to install an inspection port to the right of the air discharge. (450x450mm)
2. The drain pipe and drain hose must be sloping downward (at an angle of 1/100 or more).
   Be sure to apply the heat insulator to the piping part connecting with the indoor unit.
   Incomplete heat insulation may cause a dew.
3. Be sure to perfrom a drainage test to check that the water drains safely.
4. Do not install this indoor unit in the salty place (seaside area) or place with much gas sulfide (hot spring area).
5. The air filter is not built into the Fresh Air Intake Unit
6. Remove dust coming from outside air by installing optional Filter Chamber , Long Life Filter , and High Efficiency Filter. If the air filter is not installed into the unit, dust will clog in the heat exchanger,
   Which may cause the air conditioner to fail or to leak.
7. Use the canvas duct at air inlet port and air supply port so that vibration or abnormal resonance sound from the unit does not propagate to the duct or wall and the main unit can be easily disassembled in service time.
8. The heat insulator is applied to the main body surface of the indoor unit. (15 mm)
9. Be sure to install the outside air inlet with its opening pointing downward to prevent rainwater from entering and install a metal mesh into the opening so that leaves and birds do not enter in the duct.
10. Be sure to apply the heat insulator to the outside air intake duct to prevent dewing.
    When outside air is inhaled for heating, cold air enters into the duct, causing a dew on the surface of the duct.

<Example of construction>



1 Air intake duct

- Connect the air intake duct (Locally procured) to the inlet flange.
  Wrap aluminium tape arounf connecting part between the air intake port flange and duct, or provide sealer so that air does not leak.
- For the fresh air intake port, attach a hood so that fresh air is sucked from lower side.
  And attach wire netting, etc. to the air intake of the hood
- Set the air intake duct at descending inclination so that water can be drained even if rainwater enters in.
- Wrap the outside of the intake duct with heat insulator because it intakes cold air while heating.

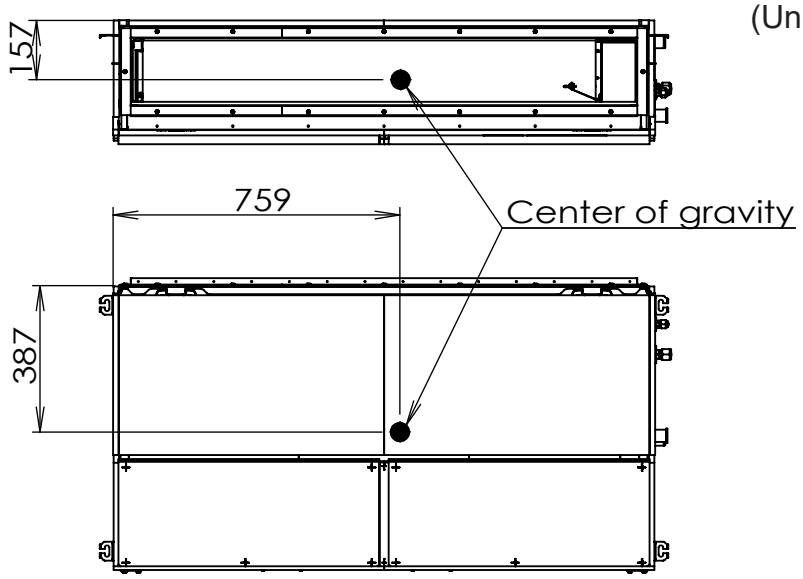
2 Air supply duct

Connect the air supply duct (Locally procured) to the Air supply flange.
Wrap alumininum tape around connecting part of the air supply port flange and duct or apply packing so that air does not leak.

6. Center of gravity

MMD-UP0481HFP-E/TR Total weight : 44 kg

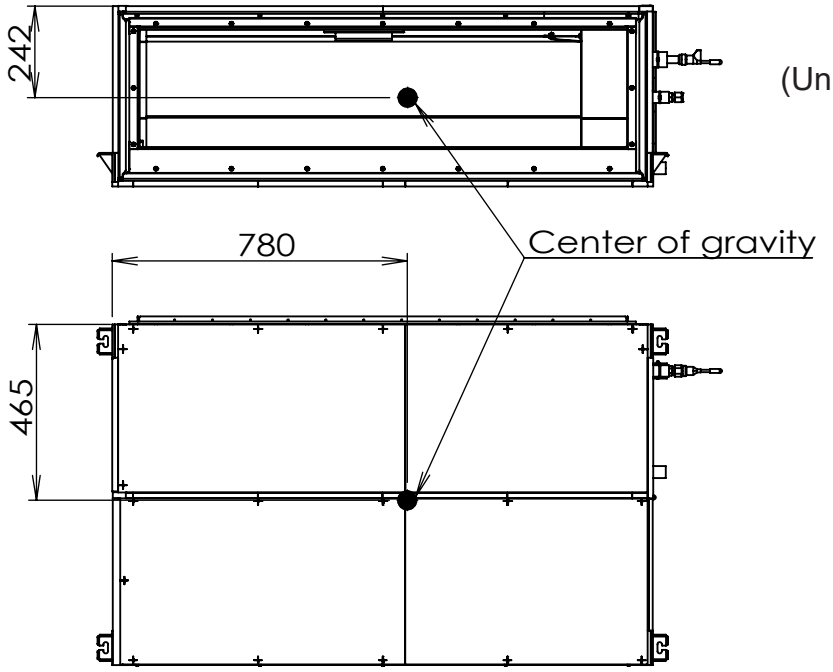
(Unit : mm)



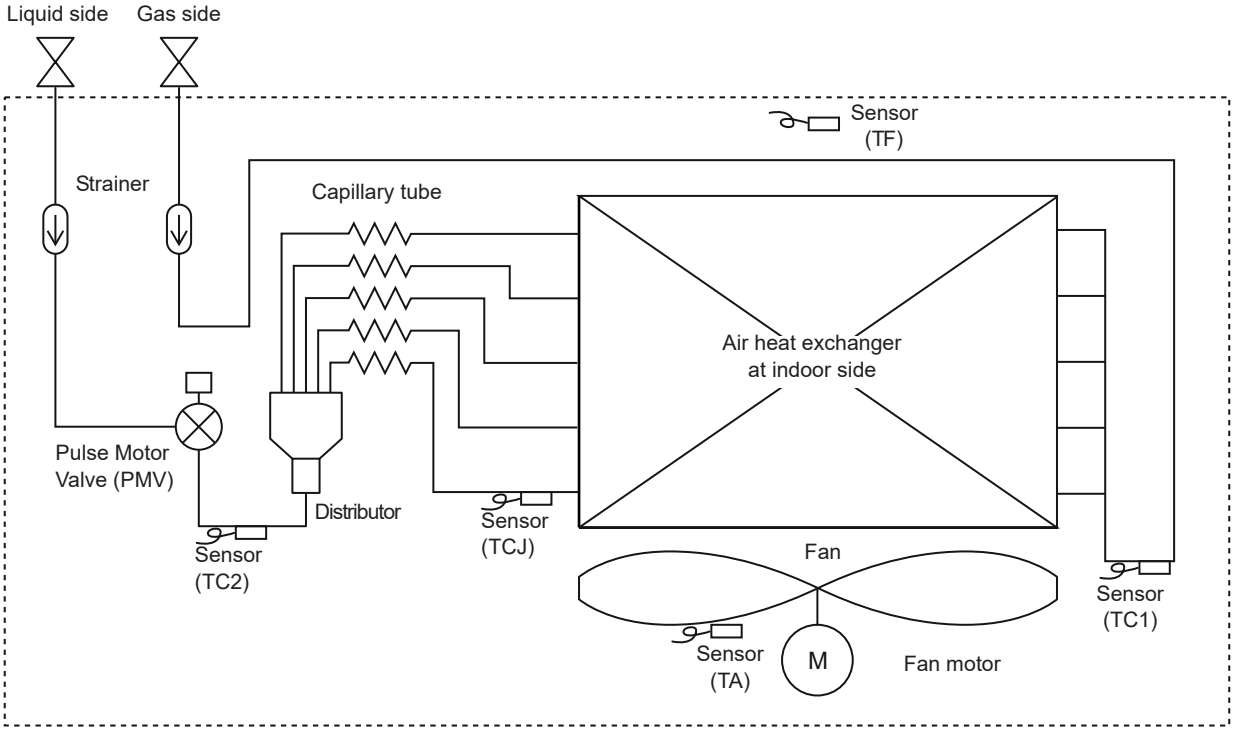
MMD-UP0721HFP-E1/TR1, MMD-UP0961HFP-E1/TR1
MMD-UP1121HFP-E1/TR1, MMD-UP1281HFP-E1/TR1

Total weight : 99 kg

(Unit : mm)



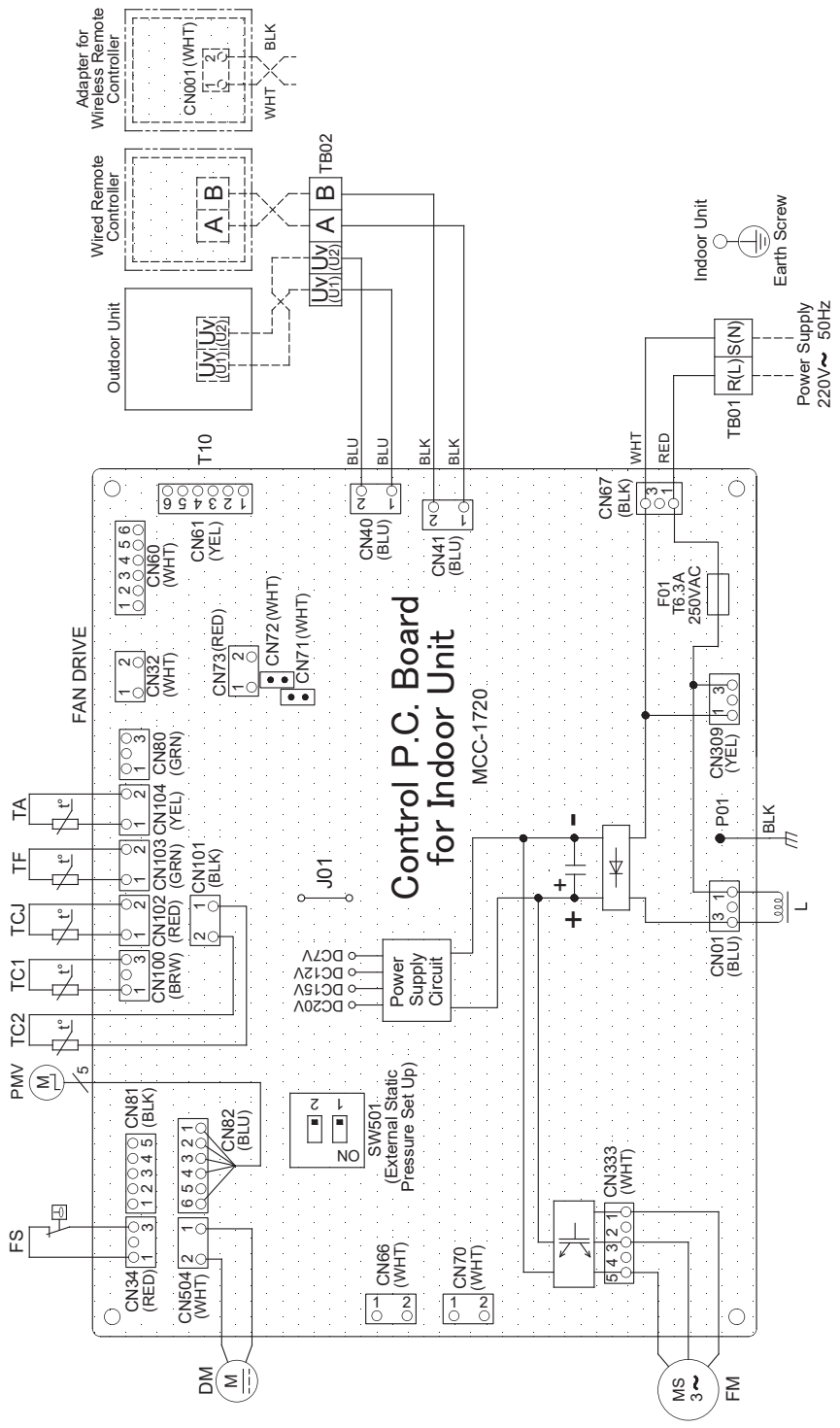
7. Piping diagram



Functional part name		Functional outline
Pulse Motor Value	PMV	(Connecter CN82(6P) : BLU) 1) Controls super heat in cooling operation 2) Controls subcool in heating operation 3) Recovers refrigerant oil in cooling operation 4) Recovers refrigerant oil in heating operation
Temp. sensor	1. TA	(Connecter CN104(2P) : YEL) 1) Detects outdoor/suction temperature
	2. TC1	(Connecter CN100(3P) : BRW) 1) Controls PMV super heat in cooling operation
	3. TC2	(Connecter CN101(2P) : BLK) 1) Controls PMV subcool in heating operation
	4. TCJ	(Connecter CN102(2P) : RED) 1) Controls PMV super heat in cooling operation
	5. TF	(Connecter CN103(2P) : GRN) 1) Detects indoor discharge temperature

8. Wiring diagram

MMD-UP0481HFP-E/TR

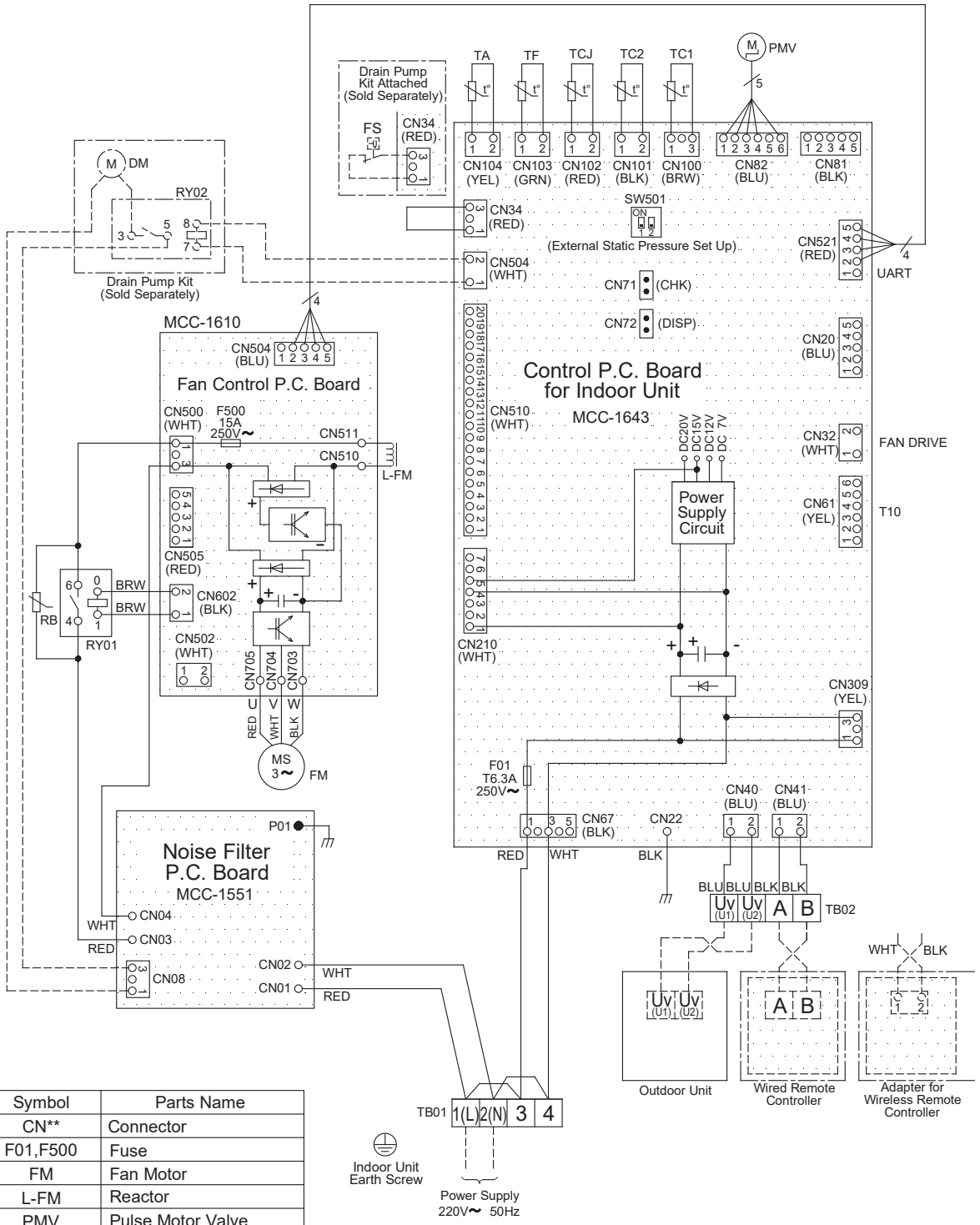


Symbol	Parts name
CN**	Connector
DM	Drain Pump Motor
F01	Fuse
FM	Fan Motor
FS	Float Switch
J01	Jumper Wire
L	Reactor
SW501	Dip Switch
TA	Intake Air Temp Sensor
TB01,02	Terminal Block
TC1,TC2,TCJ	Temp Sensor
TF	Suppry Air Temp Sensor

-----	Field Wiring
⏚	Protection Ground
□	Terminal Block
—○—	Terminal
○ ○	Connector
⬚	P.C.Board
—·—	Accessory

Color Indication
RED : Red
WHT : White
YEL : Yellow
BLU : Blue
BLK : Black
BRW : Brown
GRN : Green

MMD-UP0721HFP-E1/TR1, MMD-UP0961HFP-E1/TR1, MMD-UP1121HFP-E1/TR1, MMD-UP1281HFP-E1/TR1



Symbol	Parts Name
CN**	Connector
F01,F500	Fuse
FM	Fan Motor
L-FM	Reactor
PMV	Pulse Motor Valve
RB	Rush Current Protect Resistor
RY01	Relay
TA	Intake Air Temp Sensor
TB01,02	Terminal Block
TC1,TC2,TCJ	Temp Sensor
TF	Suppry Air Temp Sensor
DM	Drain Pump Motor
FS	Float Switch
RY02	Relay

Sold Separately

Color Indication

RED : Red
WHT : White
YEL : Yellow
BLU : Blue
BLK : Black
BRW : Brown
GRN : Green

-----	Field Wiring
⏚	Protective Earth
▭	Terminal Block
—○—	Terminal
○ ○	Connector
⋯	P.C.Board
——	Accessory

9. Electrical characteristics

Indoor unit power supply

50Hz

Model name	Normal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
		Min	Max	kW	FLA	MCA	MOCP
MMD-UP0481HFP-E/TR	230-1-50	198	264	0.350	1.42	1.77	15
MMD-UP0721HFP-E1/TR1	230-1-50	198	264	1.000	1.83	2.29	15
MMD-UP0961HFP-E1/TR1	230-1-50	198	264	1.000	2.26	2.82	15
MMD-UP1121HFP-E1/TR1	230-1-50	198	264	1.000	2.53	3.18	15
MMD-UP1281HFP-E1/TR1	230-1-50	198	264	1.000	2.89	3.62	15

MCA : Minimum Circuit Amps FLA : Full load Amps
MOCP : Maximum Over current Protection (Amps) kW : Fan Motor Rated Output (kW)

10. Capacitiy tables

10 - 1 Cooling/Heating Capacity tables

MMD-UP0481HFP-E/TR

Cooling

Outdoor /Suction air temperature	°CWB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
°CDB	Capacity [kW]							
21.0	4.2	5.2	–	–	–	–	–	–
23.0	4.2	5.2	6.6	–	–	–	–	–
25.0	4.1	5.2	6.6	8.2	–	–	–	–
27.0	–	5.2	6.6	8.1	–	–	–	–
29.0	–	–	6.5	7.9	11.7	–	–	–
31.0	–	–	6.5	7.9	11.5	14.2	–	–
33.0	–	–	6.5	7.8	11.3	14.0	17.0	–
35.0	–	–	–	7.8	11.0	13.9	16.8	19.6

Heating

Outdoor /Suction air temperature	°CWB									
	-9.0	-7.0	-5.0	-2.9	0.0	2.0	4.0	6.0	10.0	14.0
°CDB	Capacity [kW]									
-7.0	11.5	–	–	–	–	–	–	–	–	–
-5.0	–	10.8	–	–	–	–	–	–	–	–
-3.0	–	–	10.1	–	–	–	–	–	–	–
0.0	–	–	–	8.9	–	–	–	–	–	–
3.0	–	–	–	7.9	7.9	7.9	–	–	–	–
7.0	–	–	–	–	–	6.5	6.5	6.5	–	–
11.0	–	–	–	–	–	–	5.0	5.0	5.0	–
15.0	–	–	–	–	–	–	–	3.6	3.6	3.6

MMD-UP0721HFP-E1/TR1

Cooling

Outdoor /Suction air temperature	°CWB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
°CDB	Capacity [kW]							
21.0	6.5	8.1	–	–	–	–	–	–
23.0	6.5	8.1	10.3	–	–	–	–	–
25.0	6.4	8.1	10.3	12.7	–	–	–	–
27.0	–	8.0	10.2	12.6	–	–	–	–
29.0	–	–	10.2	12.3	18.5	–	–	–
31.0	–	–	10.1	12.2	18.3	22.7	–	–
33.0	–	–	10.1	12.2	17.9	22.4	26.8	–
35.0	–	–	–	12.1	17.5	22.2	26.5	30.5

Heating

Outdoor /Suction air temperature	°CWB									
	-9.0	-7.0	-5.0	-2.9	0.0	2.0	4.0	6.0	10.0	14.0
°CDB	Capacity [kW]									
-7.0	15.3	–	–	–	–	–	–	–	–	–
-5.0	–	16.8	–	–	–	–	–	–	–	–
-3.0	–	–	15.7	–	–	–	–	–	–	–
0.0	–	–	–	13.9	–	–	–	–	–	–
3.0	–	–	–	12.3	12.3	12.3	–	–	–	–
7.0	–	–	–	–	–	10.1	10.1	10.1	–	–
11.0	–	–	–	–	–	–	7.8	7.8	7.8	–
15.0	–	–	–	–	–	–	–	5.6	5.6	5.6

MMD-UP0961HFP-E1/TR1

Cooling

Outdoor / Suction air temperature	°CWB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
°CDB	Capacity [kW]							
21.0	8.1	10.2	–	–	–	–	–	–
23.0	8.1	10.1	12.9	–	–	–	–	–
25.0	8.1	10.1	12.8	15.9	–	–	–	–
27.0	–	10.0	12.8	15.8	–	–	–	–
29.0	–	–	12.7	15.3	23.1	–	–	–
31.0	–	–	12.7	15.3	22.8	28.3	–	–
33.0	–	–	12.6	15.2	22.3	28.0	33.4	–
35.0	–	–	–	15.2	21.8	27.7	33.1	38.1

Heating

Outdoor / Suction air temperature	°CWB									
	-9.0	-7.0	-5.0	-2.9	0.0	2.0	4.0	6.0	10.0	14.0
°CDB	Capacity [kW]									
-7.0	19.2	–	–	–	–	–	–	–	–	–
-5.0	–	21.0	–	–	–	–	–	–	–	–
-3.0	–	–	19.6	–	–	–	–	–	–	–
0.0	–	–	–	17.4	–	–	–	–	–	–
3.0	–	–	–	15.4	15.4	15.4	–	–	–	–
7.0	–	–	–	–	–	12.6	12.6	12.6	–	–
11.0	–	–	–	–	–	–	9.8	9.8	9.8	–
15.0	–	–	–	–	–	–	–	7.0	7.0	7.0

MMD-UP1121HFP-E1/TR1

Cooling

Outdoor / Suction air temperature	°CWB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
°CDB	Capacity [kW]							
21.0	9.8	12.2	–	–	–	–	–	–
23.0	9.7	12.2	15.4	–	–	–	–	–
25.0	9.7	12.1	15.4	19.0	–	–	–	–
27.0	–	12.1	15.3	19.0	–	–	–	–
29.0	–	–	15.3	18.4	27.7	–	–	–
31.0	–	–	15.2	18.3	27.4	33.9	–	–
33.0	–	–	15.2	18.3	26.8	33.5	40.1	–
35.0	–	–	–	18.2	26.2	33.2	39.8	45.7

Heating

Outdoor / Suction air temperature	°CWB									
	-9.0	-7.0	-5.0	-2.9	0.0	2.0	4.0	6.0	10.0	14.0
°CDB	Capacity [kW]									
-7.0	23.0	–	–	–	–	–	–	–	–	–
-5.0	–	25.2	–	–	–	–	–	–	–	–
-3.0	–	–	23.5	–	–	–	–	–	–	–
0.0	–	–	–	20.8	–	–	–	–	–	–
3.0	–	–	–	18.5	18.5	18.5	–	–	–	–
7.0	–	–	–	–	–	15.1	15.1	15.1	–	–
11.0	–	–	–	–	–	–	11.8	11.8	11.8	–
15.0	–	–	–	–	–	–	–	8.4	8.4	8.4

MMD-UP1281HFP-E1/TR1

Cooling

Outdoor /Suction air temperature	°CWB							
	15.0	17.0	20.0	23.0	26.0	28.0	30.0	32.0
°CDB	Capacity [kW]							
21.0	11.8	14.8	–	–	–	–	–	–
23.0	11.8	14.8	18.8	–	–	–	–	–
25.0	11.8	14.7	18.7	23.1	–	–	–	–
27.0	–	14.6	18.6	23.0	–	–	–	–
29.0	–	–	18.5	22.3	33.4	–	–	–
31.0	–	–	18.5	22.3	33.0	40.5	–	–
33.0	–	–	18.4	22.2	32.2	40.0	48.3	–
35.0	–	–	–	22.1	31.5	39.6	47.9	55.5

Heating

Outdoor /Suction air temperature	°CWB									
	-9.0	-7.0	-5.0	-2.9	0.0	2.0	4.0	6.0	10.0	14.0
°CDB	Capacity [kW]									
-7.0	28.0	–	–	–	–	–	–	–	–	–
-5.0	–	30.6	–	–	–	–	–	–	–	–
-3.0	–	–	28.5	–	–	–	–	–	–	–
0.0	–	–	–	25.2	–	–	–	–	–	–
3.0	–	–	–	22.4	22.4	22.4	–	–	–	–
7.0	–	–	–	–	–	18.3	18.3	18.3	–	–
11.0	–	–	–	–	–	–	14.3	14.3	14.3	–
15.0	–	–	–	–	–	–	–	10.2	10.2	10.2

NOTE :

1. The above capacities are based on the following conditions:
   - Connecting the Outdoor unit : SMMS-u
   - Air discharge setup temperature : 18 °C for Cooling mode, 25 °C for Heating mode
   - Air volume : Standard air volume(HH)
   - Equivalent piping length: 7.5m / Height difference: 0m
2. The above capacity values are general average which can be occurred in the control of the system
3. The above heating capacity values are mentioned when there is no frost.
4. The value enclosed in a box means rated capacity value
5. The below comments have shown the effect of capacity values:

   [Due to condition of instalation]
   - System combination (connect with other Indoor units, all fresh air intake connection)
   - System diversity (total indoor units capacity, occupy ratio of the fresh air intake unit)
   - Piping length
   - Height difference

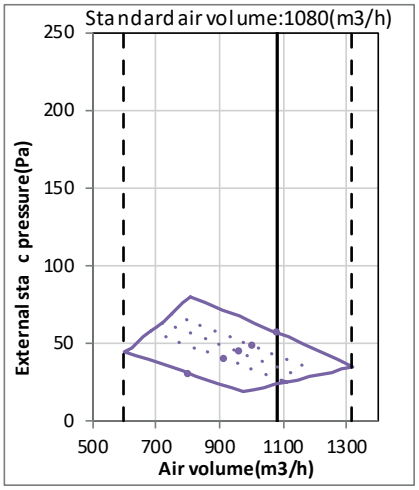
   [Due to condition of Temperature/Humidity]
   - Outdoor / Suction air temperature, humidity
   - Indoor units temperature, humidity (when connected other normal indoor units)

   [Due to condition of utilization]
   - (Installed into one refrigerant line) the number of operation units (fresh air intake units, normal indoor units)
   - Indoor units temperature, humidity (when connected other normal indoor units)

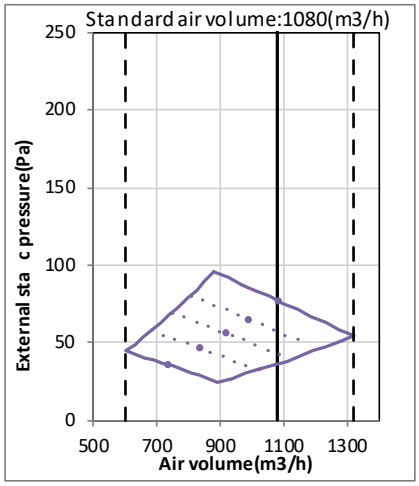
11. Fan characteristics

MMD-UP0481HFP-E/TR

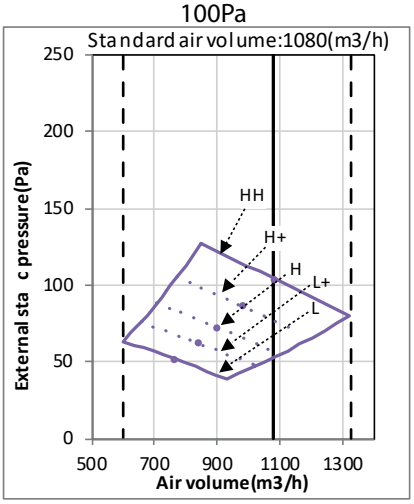
50Pa



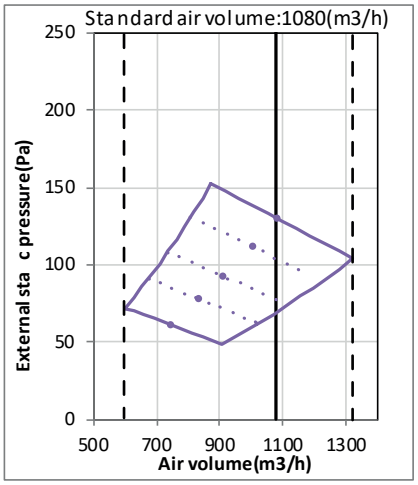
75Pa



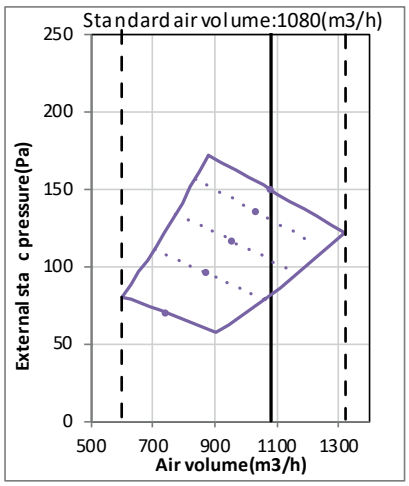
100Pa



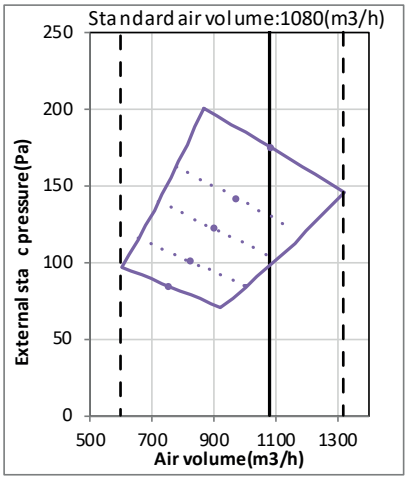
125Pa



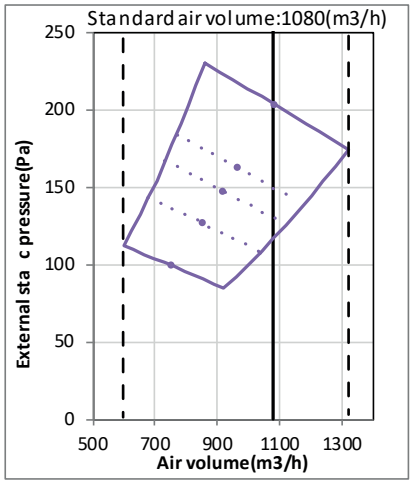
150Pa



175Pa

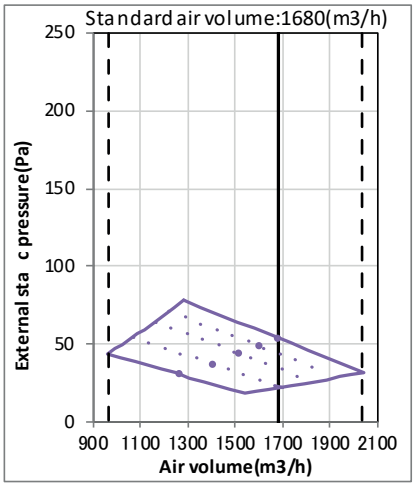


200Pa

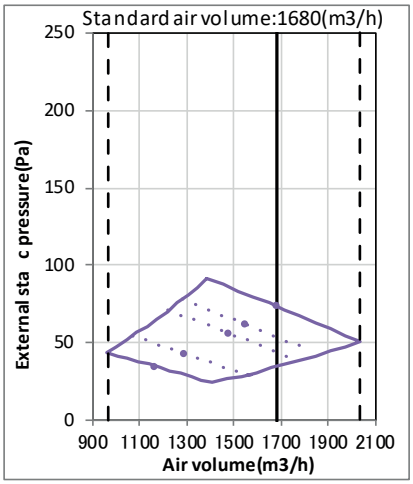


MMD-UP0721HFP-E1/TR1

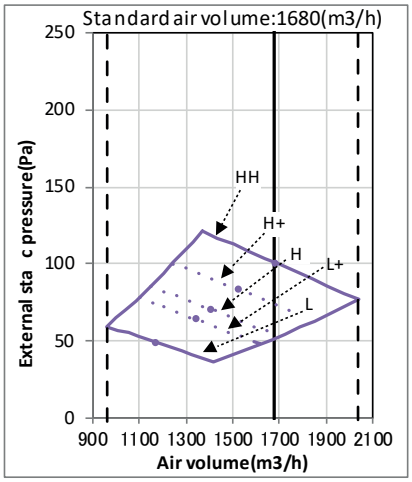
50Pa



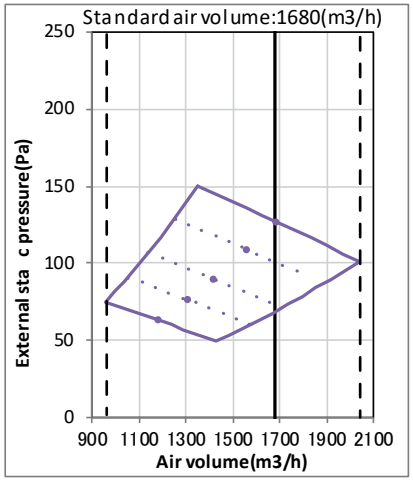
75Pa



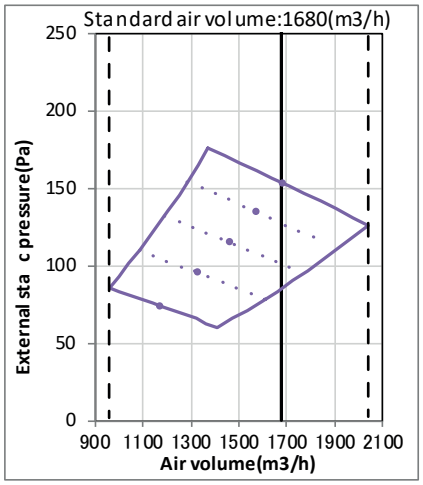
100Pa



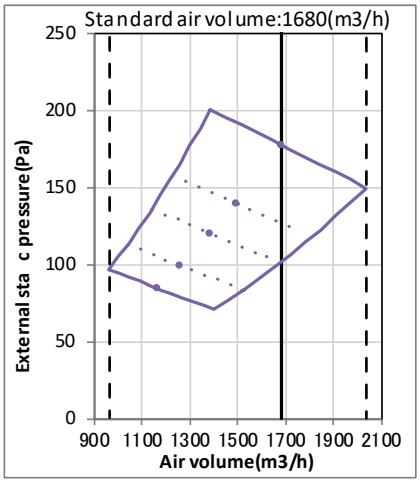
125Pa



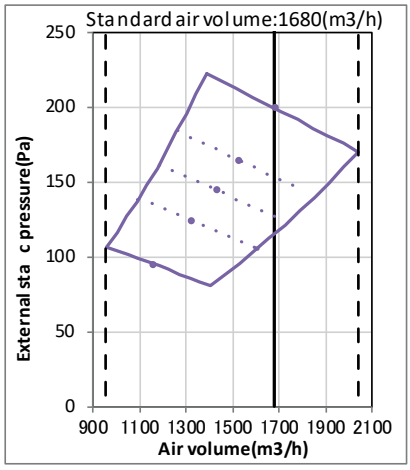
150Pa



175Pa

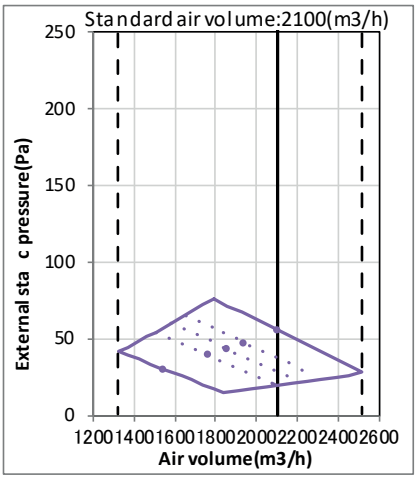


200Pa

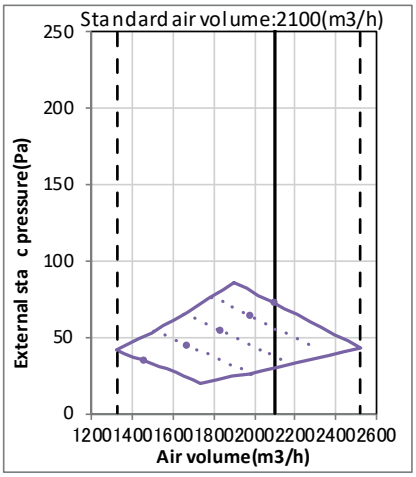


MMD-UP0961HFP-E1/TR1

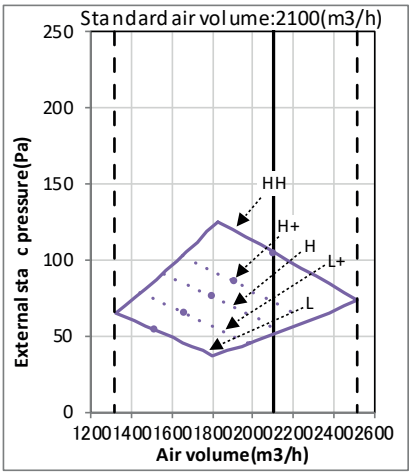
50Pa



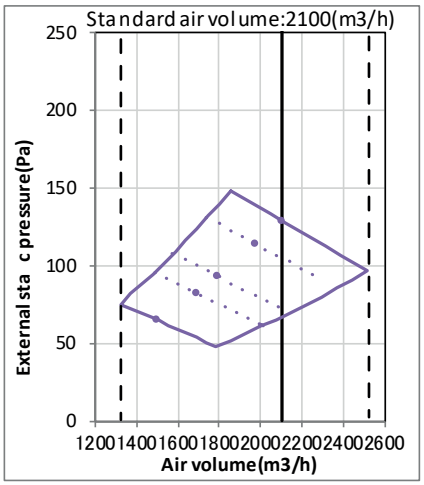
75Pa



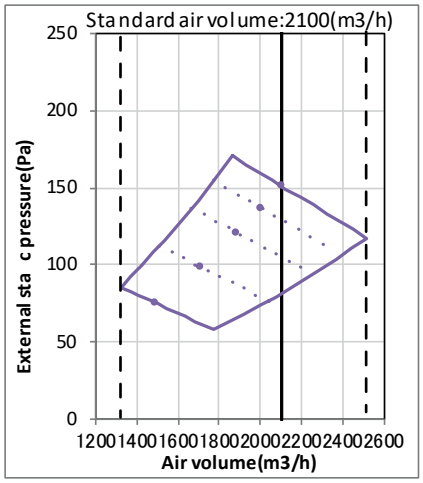
100Pa



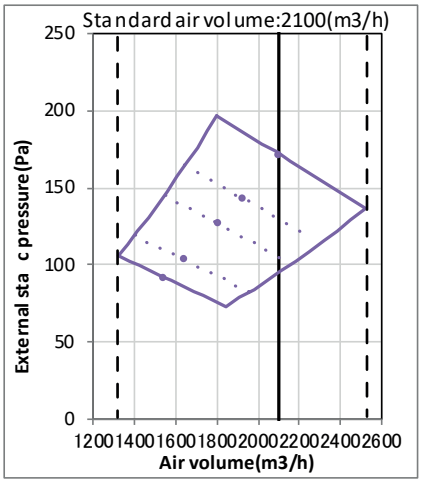
125Pa



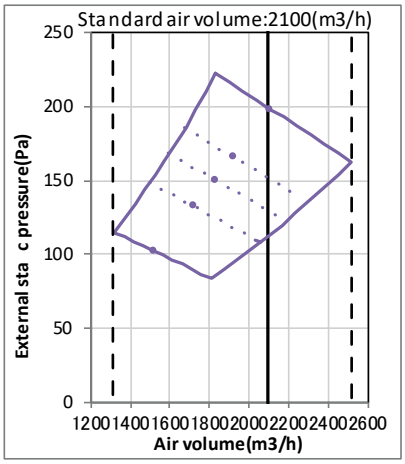
150Pa



175Pa

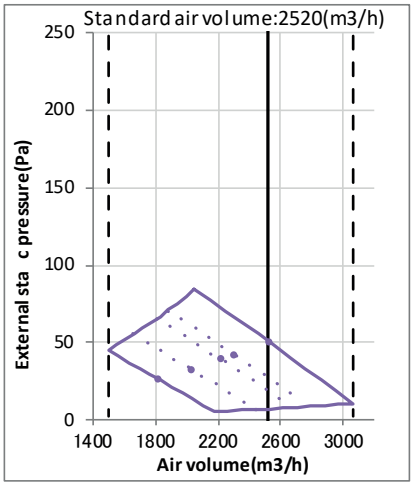


200Pa

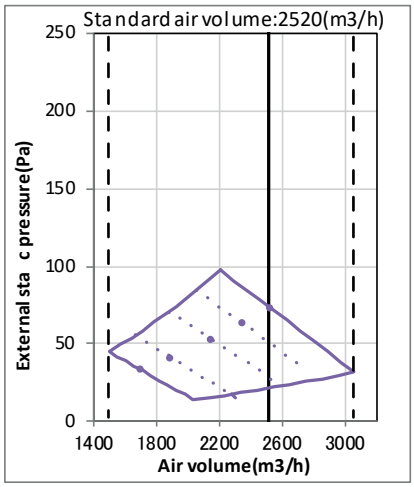


MMD-UP1121HFP-E1/TR1

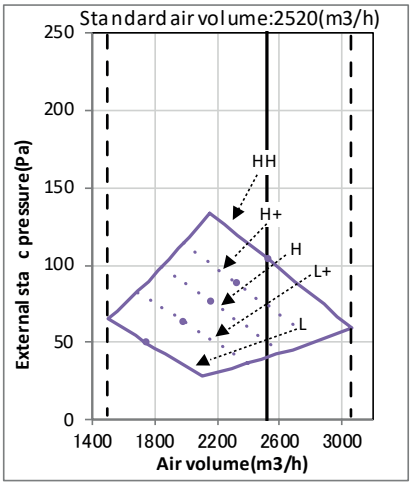
50Pa



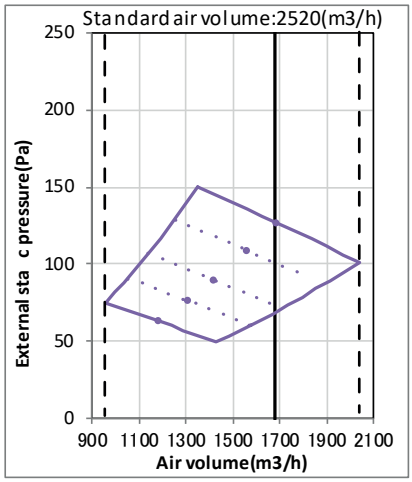
75Pa



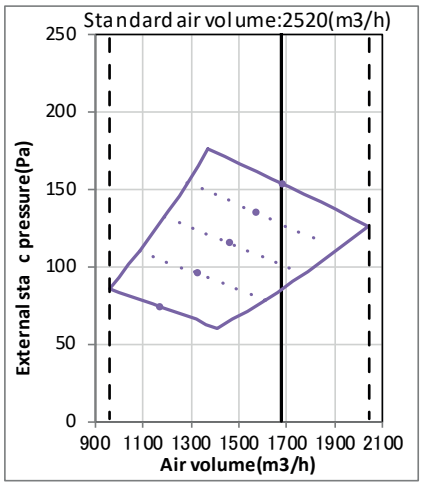
100Pa



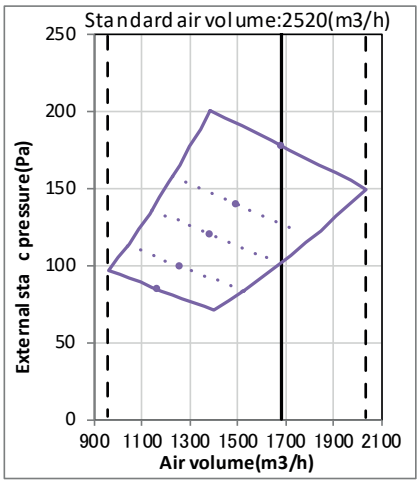
125Pa



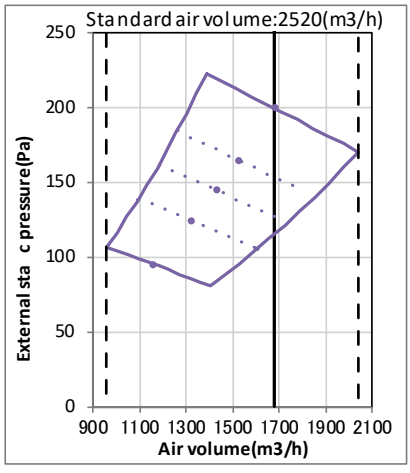
150Pa



175Pa

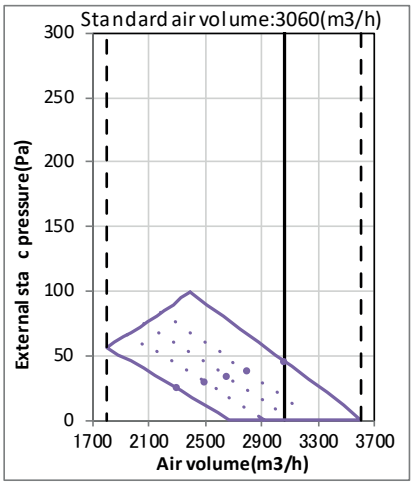


200Pa

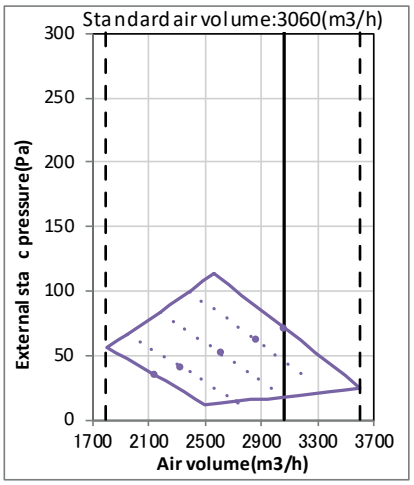


MMD-UP1281HFP-E1/TR1

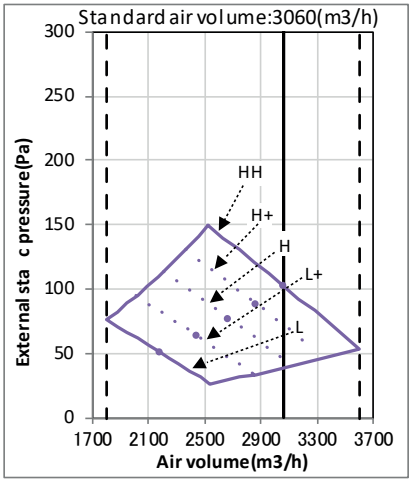
50Pa



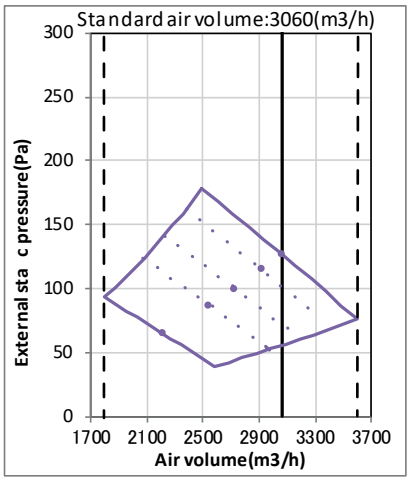
75Pa



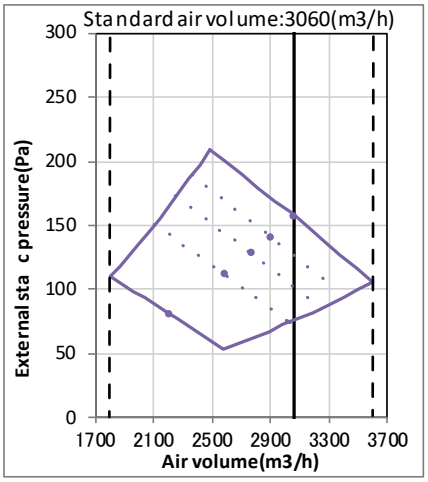
100Pa



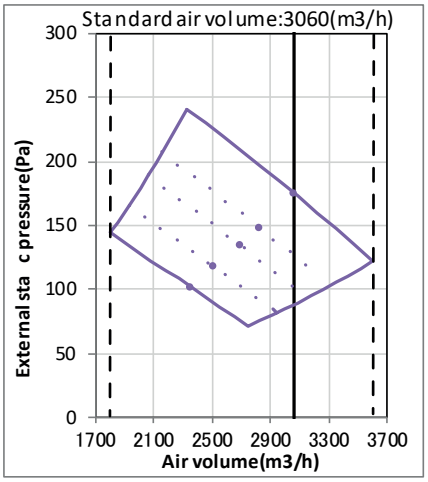
125Pa



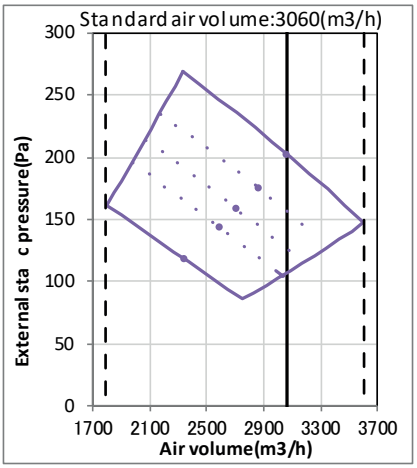
150Pa



175Pa

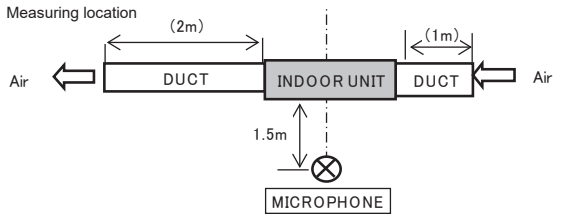


200Pa

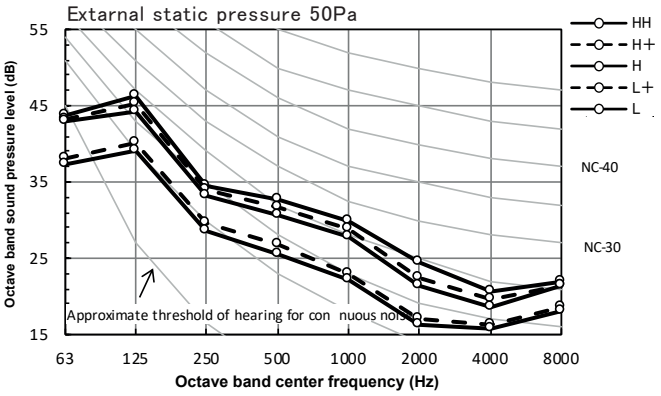


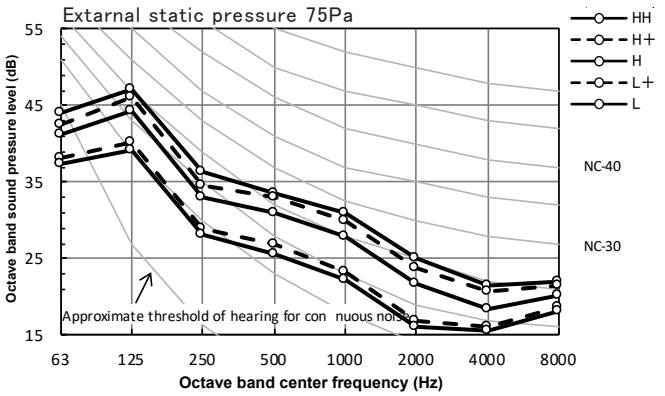
12. Sound data

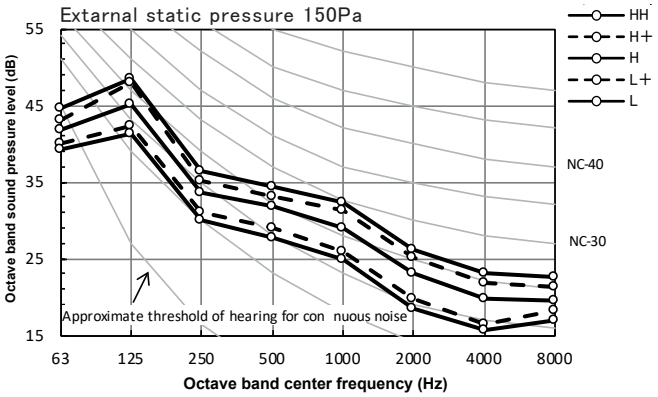
MMD-UP0481HFP-E/TR

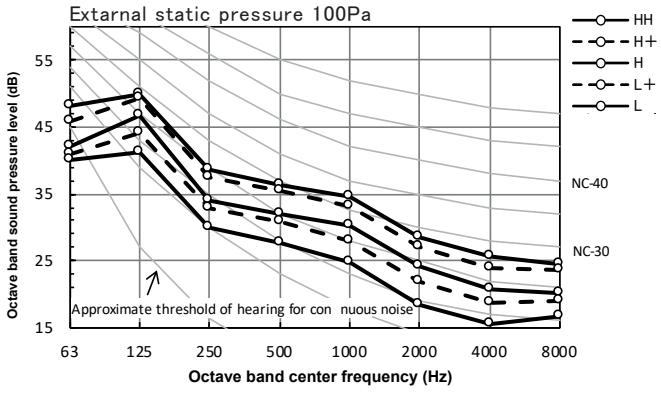


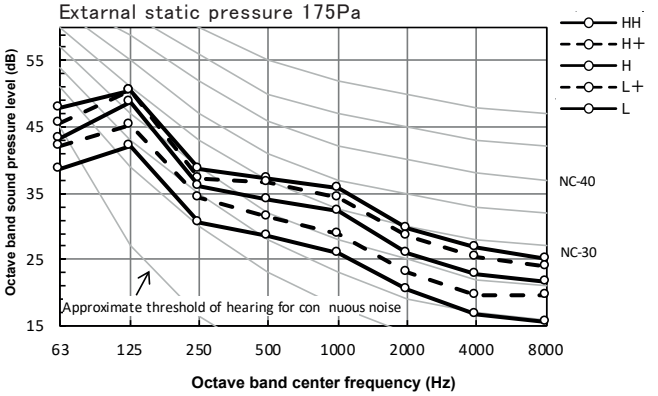
ESP (Pa)	Sound Pressure Level (dBA)				
	HH	H+	H	L+	L
50	36.0	35.0	34.0	30.0	29.0
75	37.0	36.0	34.0	30.0	29.0
100	38.0	37.0	35.0	32.0	31.0
125	40.0	39.0	36.0	34.0	31.0
150	41.0	40.0	38.0	35.0	32.0
175	43.0	40.0	38.0	35.0	34.0
200	43.0	42.0	40.0	38.0	35.0

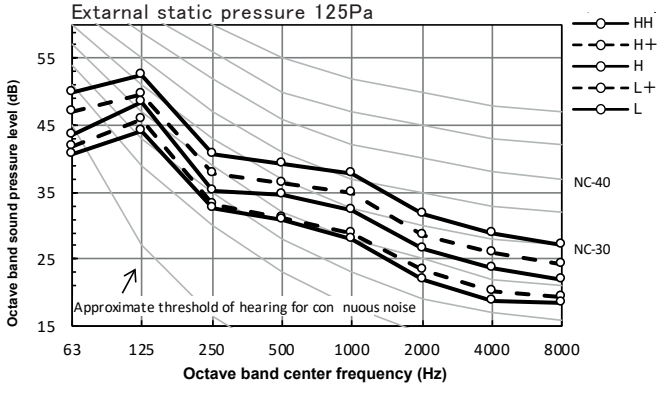


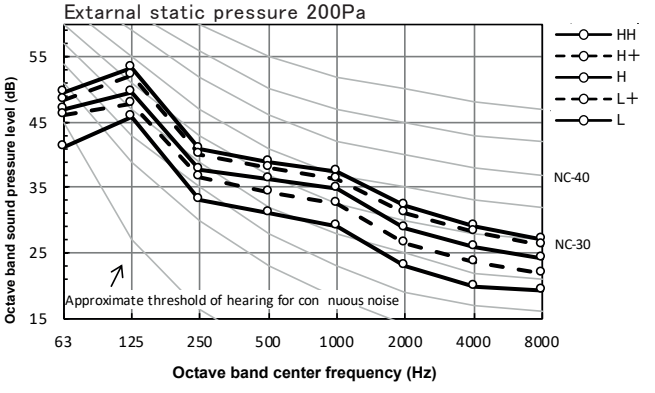




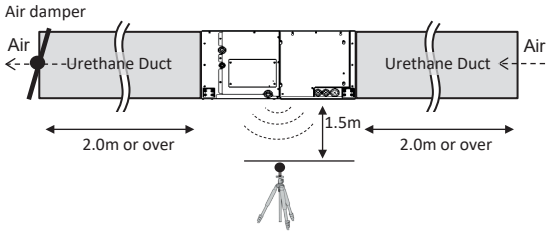






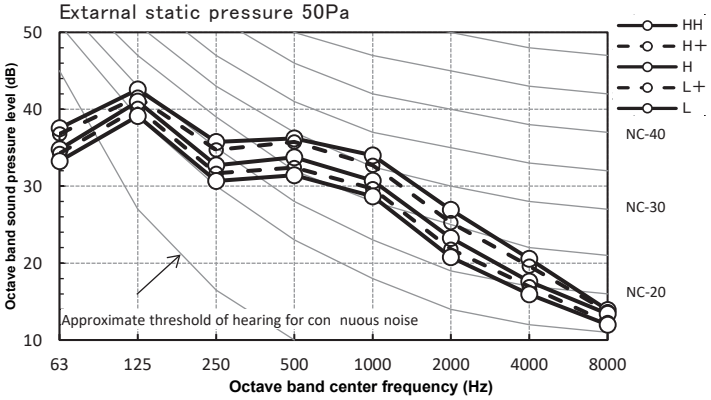


MMD-UP0721HFP-E1/TR1

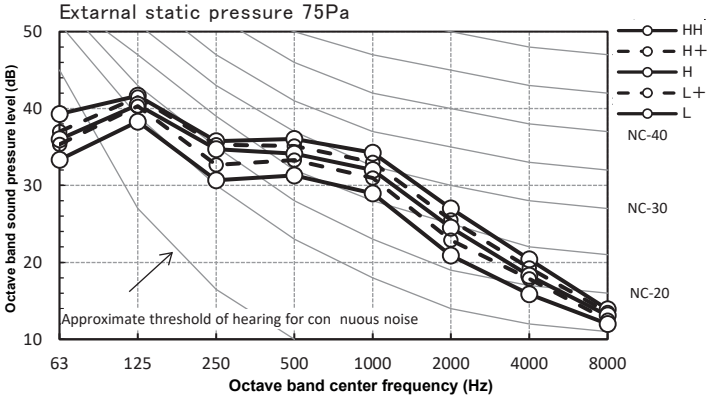


ESP (Pa)	Sound Pressure Level (dBA)				
	HH	H+	H	L+	L
50	38.0	37.0	35.0	34.0	33.0
75	38.0	37.0	36.0	35.0	33.0
100	38.0	37.0	36.0	35.0	33.0
125	38.0	37.0	36.0	35.0	33.0
150	40.0	39.0	36.0	35.0	34.0
175	40.0	39.0	37.0	36.0	34.0
200	40.0	39.0	38.0	37.0	34.0

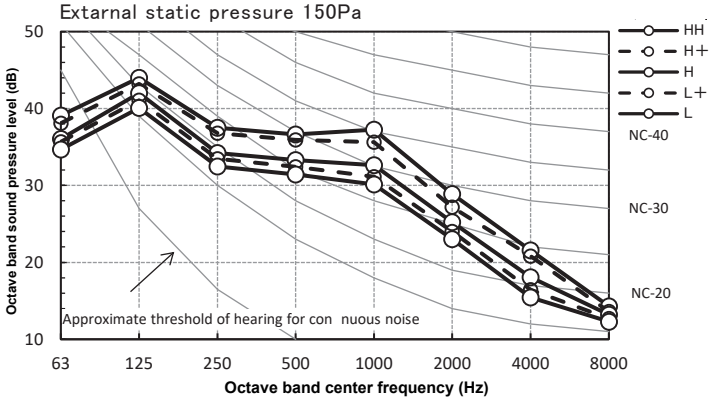
Extarnal static pressure 50Pa



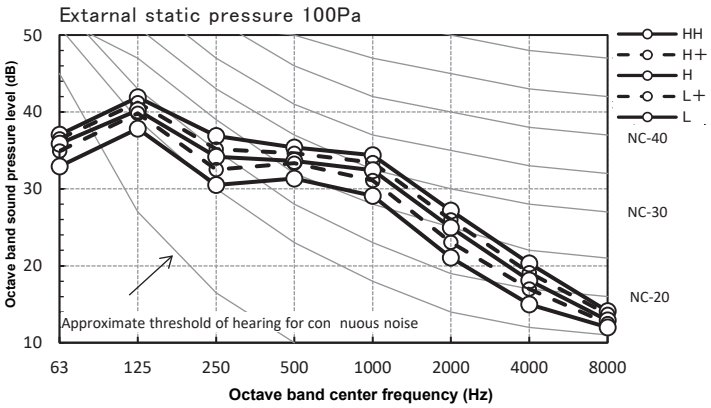
Extarnal static pressure 75Pa



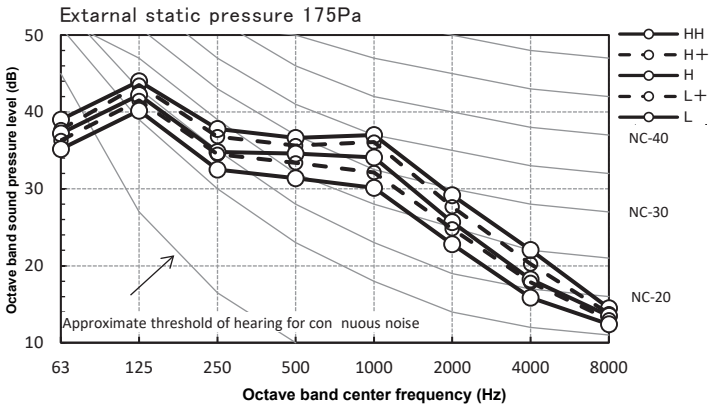
Extarnal static pressure 150Pa



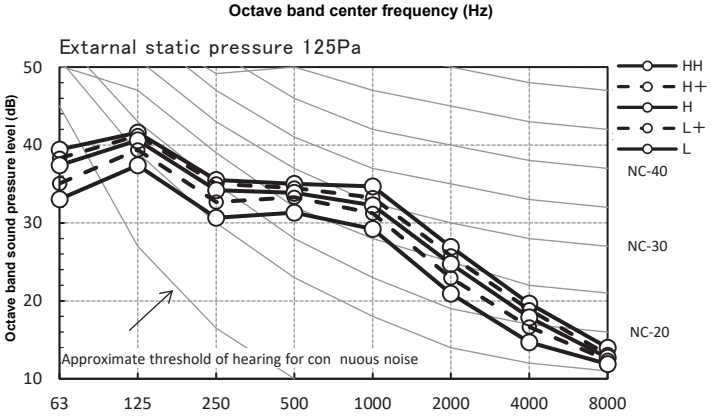
Extarnal static pressure 100Pa



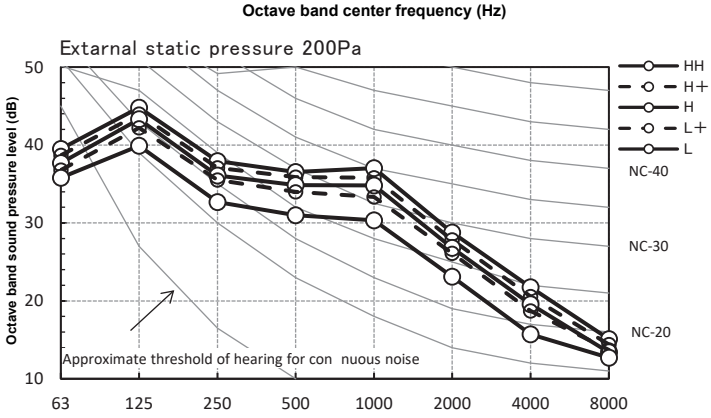
Extarnal static pressure 175Pa



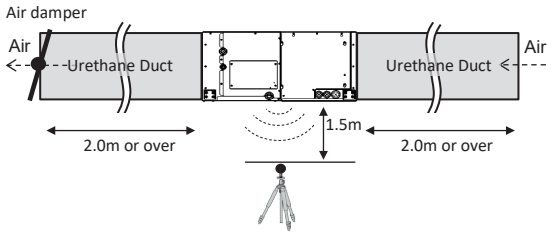
Extarnal static pressure 125Pa



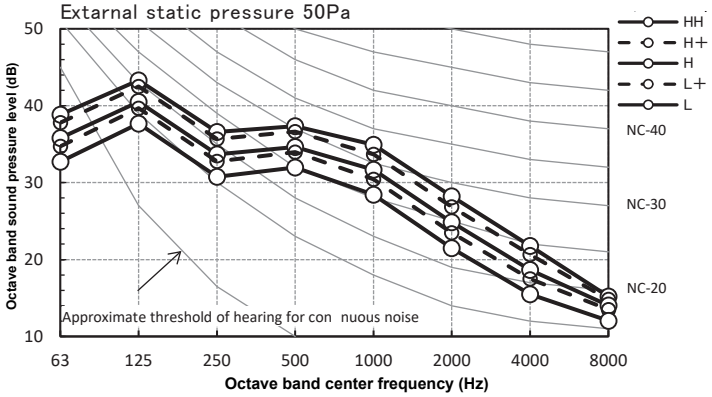
Extarnal static pressure 200Pa

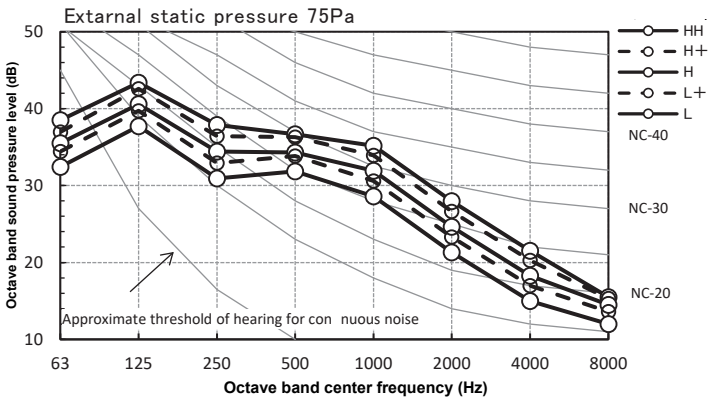


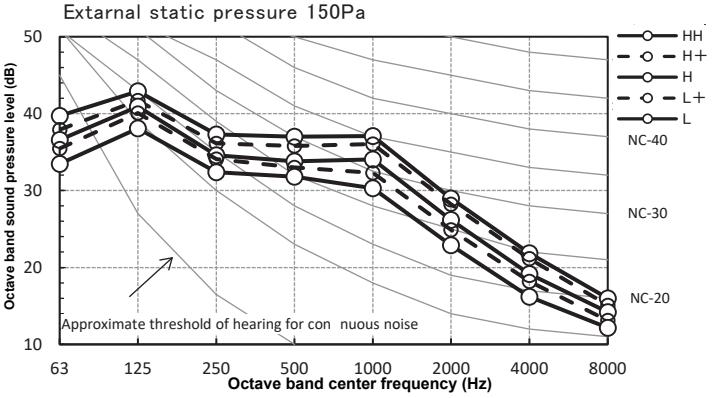
MMD-UP0961HFP-E1/TR1

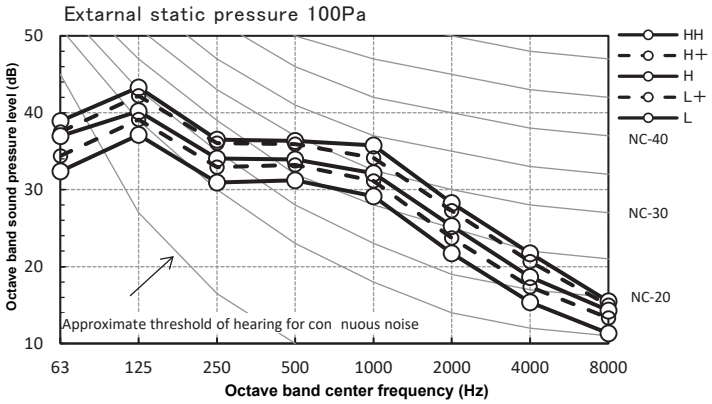


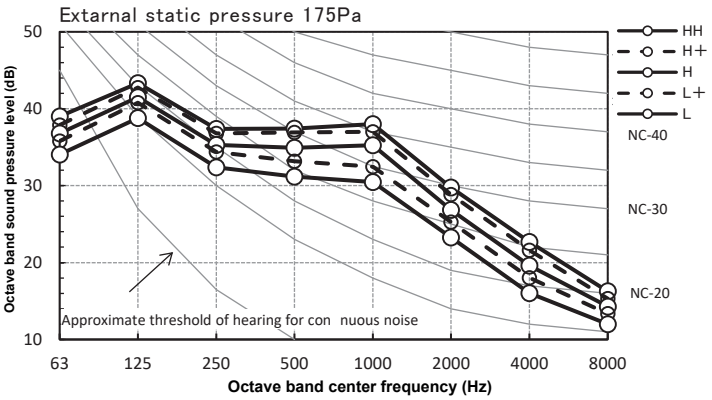
ESP (Pa)	Sound Pressure Level (dBA)				
	HH	H+	H	L+	L
50	39.0	38.0	36.0	35.0	33.0
75	39.0	38.0	36.0	35.0	33.0
100	39.0	38.0	36.0	35.0	33.0
125	40.0	39.0	36.0	35.0	34.0
150	40.0	39.0	37.0	36.0	34.0
175	41.0	40.0	38.0	36.0	34.0
200	41.0	40.0	39.0	38.0	35.0

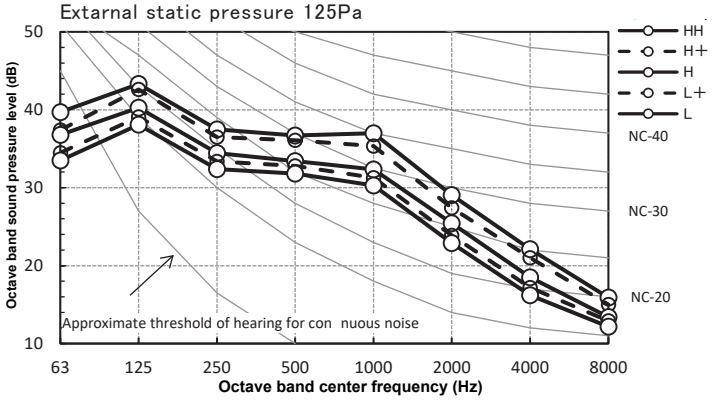


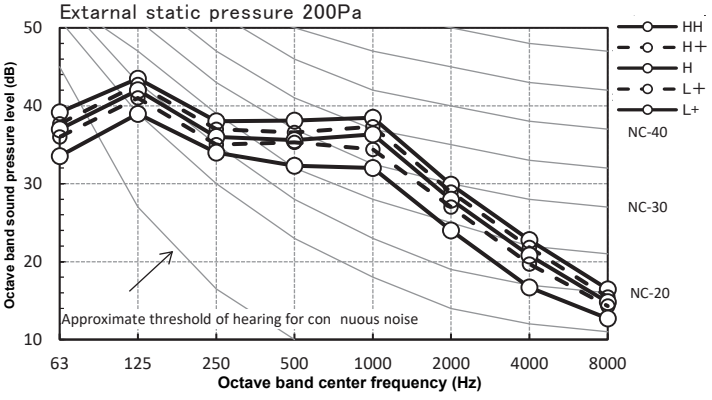




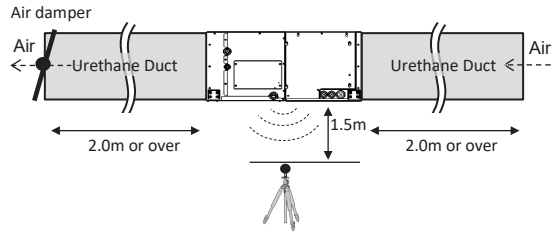






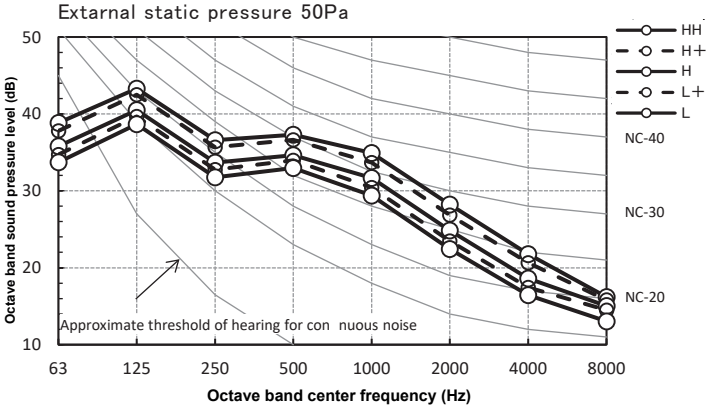


MMD-UP1121HFP-E1/TR1

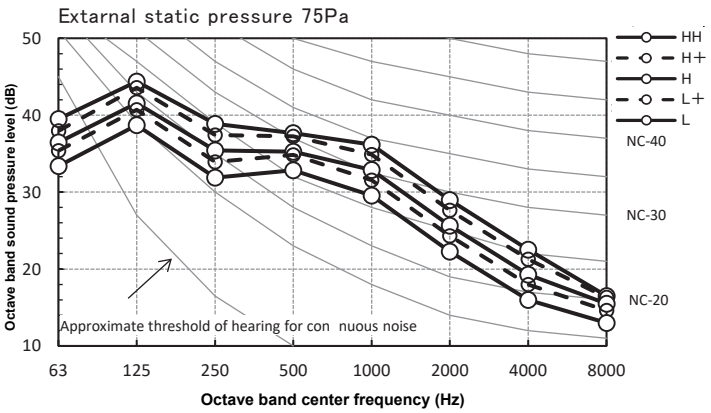


ESP (Pa)	Sound Pressure Level (dBA)				
	HH	H+	H	L+	L
50	39.0	38.0	36.0	35.0	34.0
75	40.0	39.0	37.0	36.0	34.0
100	40.0	39.0	37.0	36.0	34.0
125	40.0	39.0	37.0	36.0	34.0
150	41.0	40.0	38.0	37.0	35.0
175	42.0	41.0	39.0	37.0	35.0
200	42.0	41.0	40.0	39.0	35.0

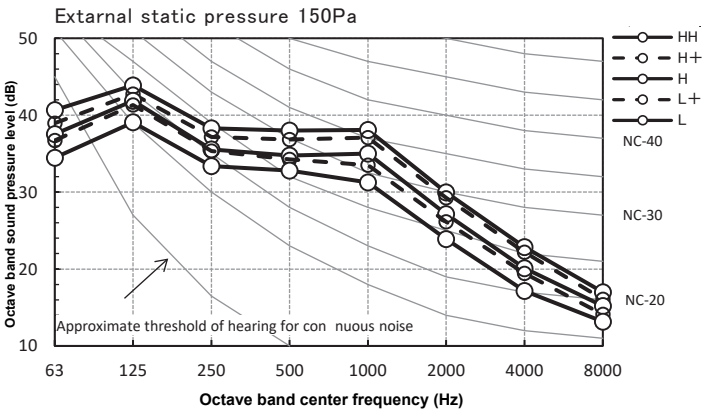
Extarnal static pressure 50Pa



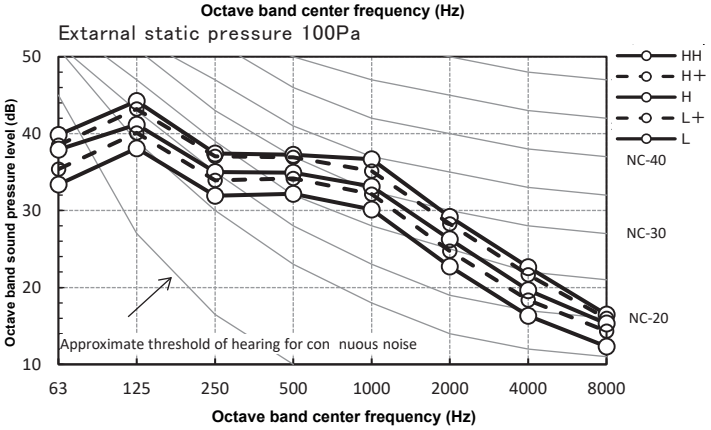
Extarnal static pressure 75Pa



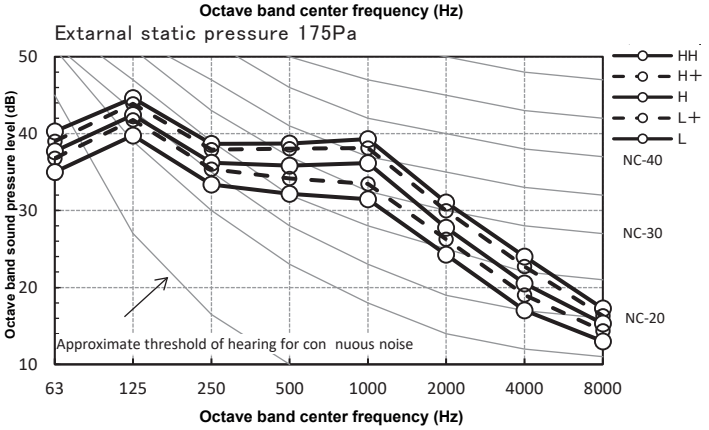
Extarnal static pressure 150Pa



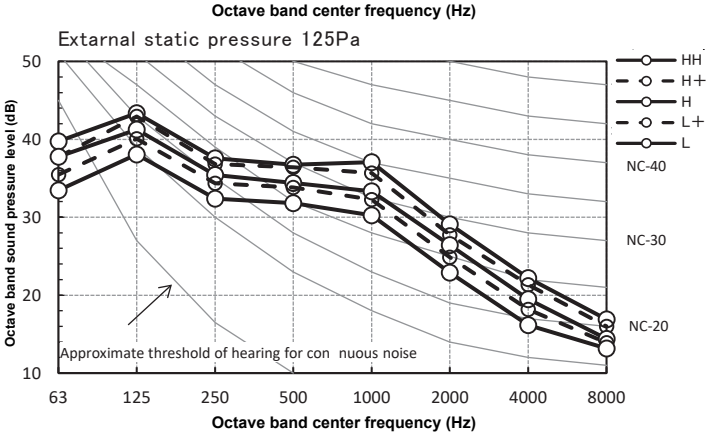
Extarnal static pressure 100Pa



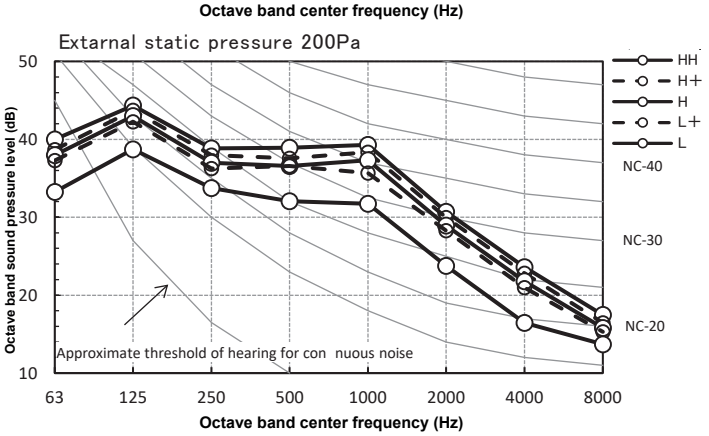
Extarnal static pressure 175Pa



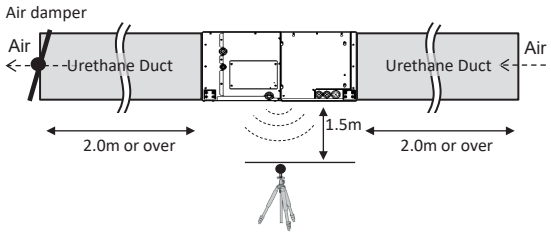
Extarnal static pressure 125Pa



Extarnal static pressure 200Pa

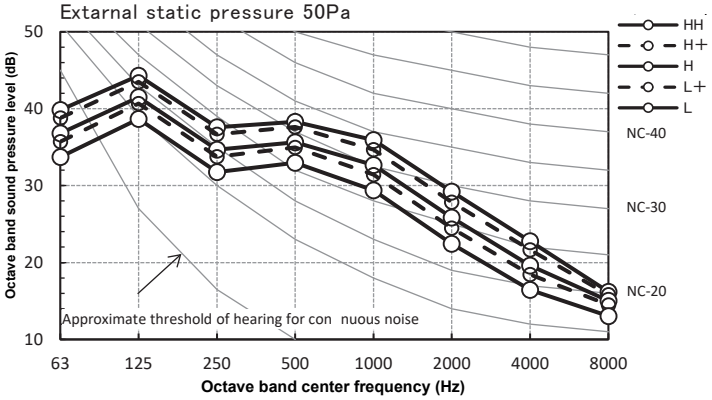


MMD-UP1281HFP-E1/TR1

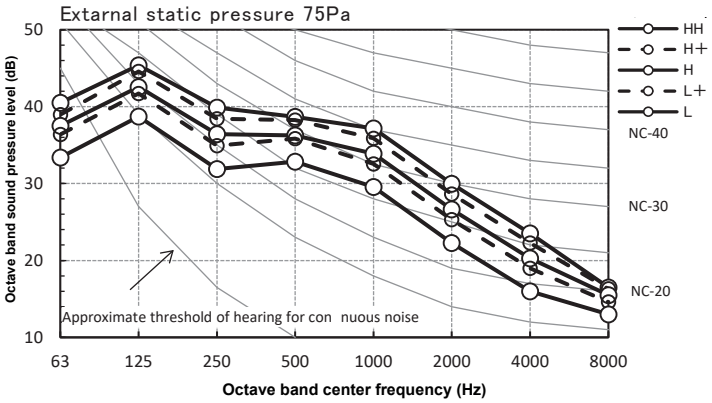


ESP (Pa)	Sound Pressure Level (dBA)				
	HH	H+	H	L+	L
50	40. 0	39. 0	37. 0	36. 0	34. 0
75	41. 0	40. 0	38. 0	37. 0	34. 0
100	42. 0	40. 0	38. 0	37. 0	35. 0
125	42. 0	41. 0	38. 0	37. 0	35. 0
150	43. 0	42. 0	39. 0	38. 0	36. 0
175	44. 0	43. 0	40. 0	38. 0	36. 0
200	44. 0	43. 0	42. 0	40. 0	37. 0

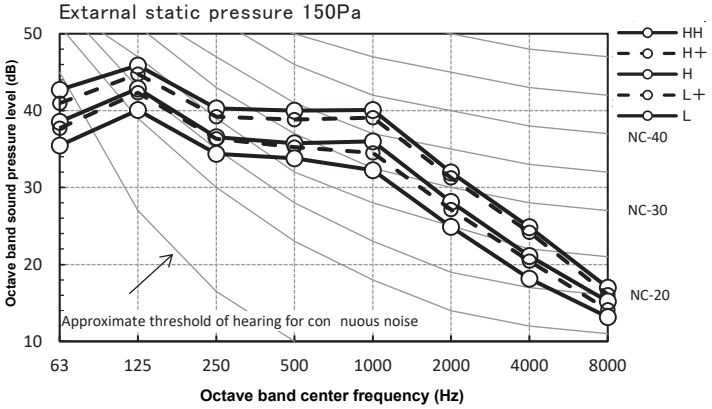
Extarnal static pressure 50Pa



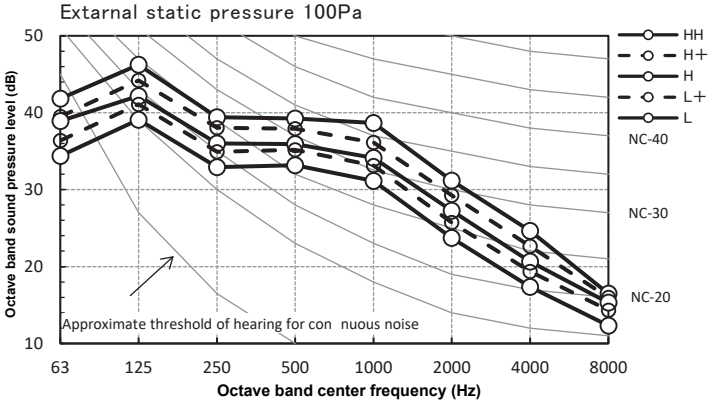
Extarnal static pressure 75Pa



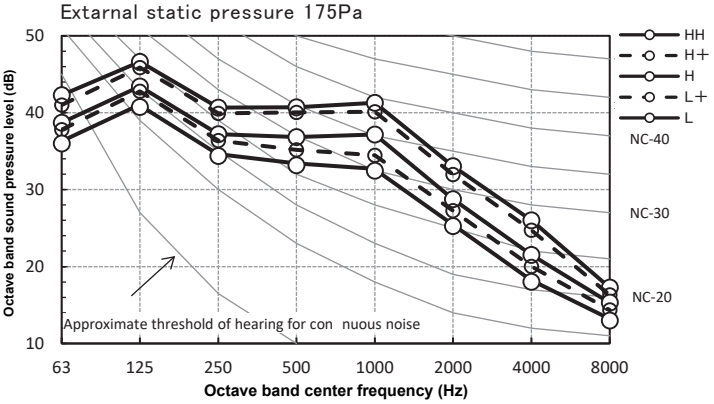
Extarnal static pressure 150Pa



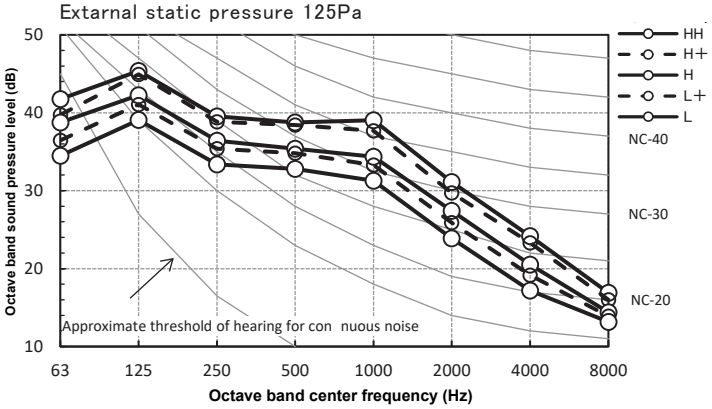
Extarnal static pressure 100Pa



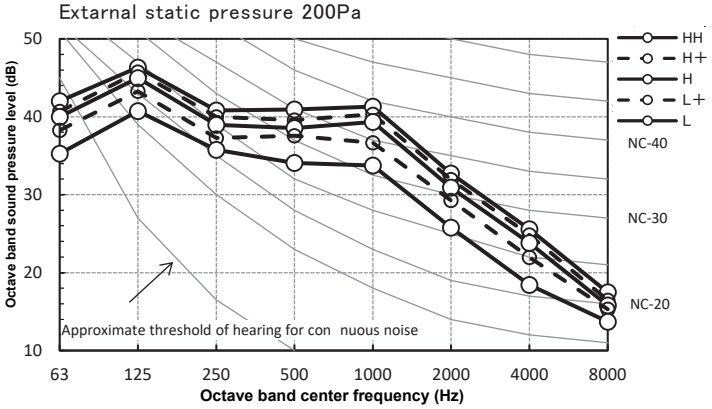
Extarnal static pressure 175Pa



Extarnal static pressure 125Pa



Extarnal static pressure 200Pa



13. Applicable controls

13 - 1 Summary of Digital input / output function

Optional connector specifications of indoor P.C. board (Fresh Air Intake Unit)

Connector No.	Color	Function	Model Name: MMD-UP 048*HFP*	Model Name: MMD-UP 072*HFP* to 128*HFP*	Pin No.	Specifications	Remarks
CN32	White	Ventilation output	○	○	① ②	DC12V（COM） Output (Open collector))	Setting at shipment: Interlock of ON by indoor unit operation, with OFF by stop operation ＊The single operation setting by FAN button on the remote controller is performed on the remote controller (DN=31).
CN34	Red	Input for float SW	●	●	① ② ③	DC12V NC Float SW input	Normal when between - short-circuits, but abnormal when open-circuits. (check code "P10" appears)
CN60	White	Option output	○	×(＊)	① ② ③ ④ ⑤ ⑥	DC12V（COM） Defrost output (Open collector) Thermostat-off output (Open collector) Cooling output (Open collector) Heating output (Open collector) Fan output (Open collector)	 ON when outdoor unit is on defrost operation. ON when actual thermostat is ON (Comp. ON). ON when the operation mode is on cooling system (Cool, Dry, Auto (Cooling)). ON when the operation mode is on heating system (Heat, Auto (Heating)). ON when the indoor fan is on, (When an air cleaner is used) OFF when the clean operation is on.
CN61	Yellow	HA	○	○	① ② ③ ④ ⑤ ⑥	Changeable by DN[2E] 0V（COM） Remote controller prohibited input Operation output (Open collector) DC12V（COM） Warning output (Open collector)	HA ON/OFF input (J01 ; Connect - PLUSE input(At shipment)、 Cut - STATIC input) Please see "13 - 5 Function code No. (DN code) table". Permission/Prohibition of remote controller operation stop is performed by input. Operation ON (Answer back of HA) Warning output (Open collector)
CN70	White	Filter Option abnormality	○	×(＊)	① ②	Input 0V	Option abnormal input（Display of protective operation for equipment installed to the outside） ＊Perform the settings having option abnormal input from the remote controller. （ＤＮ「2A」＝０００２→０００１）
CN71	White	CHK Operation check	○	○	① ②	Check mode input 0V	Use for operation check of indoor unit. (Performs operation of indoor fan “H”, Louver horizontal and Drain pump ON without communication with outdoor and remote controller)
CN72	White	DISP Exhibition mode	○	○	① ②	DISP mode input 0V	Communication is available by indoor unit and remote controller only （When the power is turned on). Shortening time of timer（Always）
CN73	Red	EXCT demand	○	×(＊)	① ②	Changeable by DN[0B] 0V	Please see "13 - 5 Function code No. (DN code) table".
CN80	Green	External abnormal input	○	×(＊)	① ② ③	DC12V NC External abnormal input	Make the check code of "L30" occur (by continuing operation for one min) and perform the forced stop.
CN81	Black	Output for Flow selector unit	△	△	① ② ③ ④ ⑤	DC12V EP valve output (Open collector) Balance valve output (Open collector) Suction valve output (Open collector) Discharge valve output (Open collector)	Fresh Air Intake Unit is not connectable to SHRM (Super Heat Recovery Multi system) series.
CN309	Yellow	Output power supply	○	○	① ③	AC230V	This can be used as power supply for option devices.
CN521	Red	Connect with Input / Output P.C. board	×	●	① ② ③ ④ ⑤	DC12V DC5V Signal transmit Signal receive 0V	Connect with P.C. board (MCC-1610)

●: Use in standard, ○: Available, △: Use by connecting parts sold separately, ×: Unavailable
(*) : Available by Application control kit (TCB-PCUC2E)

13 - 2 All Fresh Air Intake Unit connection setting (Case of SMMS-e, SMMS-7 series)

When only Fresh Air Intake Units connected to Outdoor unit, set the all Fresh Air Intake Unit connection setting at Fresh Air Intake Units. Set DN data is below:-

DN	SET DATA
C8	0000
AE	0016
AF	0010

13 - 3 Setting for the Fresh Air unit fan ON during defrost

It is possible to set up the Fresh Air unit fan ON during defrost due to prioritize a ventilation. Set DN data is below:-

DN	SET DATA
72	0000
9B	0002

NOTE : If change above setting, please consider that cold air may blow out for up to 10 minutes.

13 - 4 Details of Card key input

This function controls the indoor units individually. It is connected to the control P.C. board of the indoor unit. For the card switch box that does not involve contact operation described below, convert signals with a relay including a normally-closed.

Function	External contact terminal	
	Close (Status that card is inserted)	Open (Status that card is taken out)
Card Input 1	Manual prohibition release (Manual operation)	Manual prohibition (Operation stop)
Card Input 2	Manual prohibition release (Automatic operation)	Manual prohibition (Operation stop)
Card Input 3	Operation status continues (Do nothing)	Operation status continues and setting temperature changes (COOL/DRY: 29ºC, HEAT: 18ºC)
Card Input 4	Manual prohibition release (The status returns to operating condition before removing the card.)	Manual prohibition (Operation stop)
Card Input 5	1) To change a setting temperature by changing date at DN code No. "172" - "173". 2) The operation mode can be set by changing date(0000, 0001, 0002) at DN code No. "16B". 0000 : Operation mode is the same at the current mode. (Factory setting default) 0001 : Operation mode returns to the previous mode when card was inserted. (In case of the previous mode is OFF operation, the operation mode is also OFF. 0002 : Operation mode starts at the same previous mode when card was inserted. (The operation mode is ON operation even the previous mode is OFF operation)	1) To change a setting temperature, fan speed and wind direction by changing date at DN code No. "16C" - "16D". 2) The operation mode can be set by changing data(0000, 0001) at DN code No. "16A". 0000 : Operation mode is the same at the current mode. (Factory setting default) 0001 : Operation automatically starts.

13 - 5 Function code No. (DN code) table

Includes functions needed to perform applied control on site

DN	Item	Description	At shipment
01	Filter display delay timer	0000: None 0001: 150H 0002: 2500H 0003: 5000H type 0004: 10000H	Depending on model
02	Dirty state of filter	0000: Standard 0001: High degree of dirt (Half of standard time)	0000: Standard
03	Central control address	0001: No.1 unit to 0064: No.64 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
04	Specific indoor unit priority	0000: No priority 0001: Priority	0000: No priority
0B	Demand control (CN73/ TCB-PCUC2E:CN4)	0000: Demand input 0001: O2 sensor input 0002: Card input setup.3 0003: Fire alarm input (Normal open) 0004: Card input setup.4 0005: Fire alarm input (Normal close) 0006: Notice code (202) signal 0007: Card input setup.5 0008: Card input setup.1 0009: Card input setup.2 (Notice code : TU2C-LINK only)	0000: Demand input
0F	Cooling only	0000: Heat pump 0001: Cooling only (No display of [AUTO] [HEAT])	0000: Heat pump
10	Type	Refer to Type DN code "10" list	Depending on model type
11	Indoor unit capacity	0000: Unfixed 0001 to 0034 Refer to Indoor Unit Capacity DN code "11" list	According to capacity type
12	Line address	0001: No.1 unit to 0064: No.30 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
13	Indoor unit address	0001: No.1 unit to 0064: No.30 unit … TCC-LINK 0001: No.1 unit to 0128: No.128 unit … TU2C-LINK 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
14	Group address	0000: Individual 0001: Header unit of group 0002: Follower unit of group 00Un: Unfixed (When using U series remote controller) 0099: Unfixed (Other than U series remote controller)	00Un/0099: Unfixed *1
28	Automatic restart of power failure	0000: None 0001: Restart	0000: None
2A	Selection of option/Trouble input (TCB-PCUC2E: CN3)	0000: Filter input 0001: Alarm input 0002: None (Air washer, etc.)	0002: None
2E	HA terminal (CN61) select	0000: Usual 0001: Card input setup.1 (3) 0002: Fire prevenion input (Normal open) 0003: Card input setup.2 (4) 0004: Notice code (201) signal 0005: Card input setup.5 (Notice code : TU2C-LINK only)	0000: Usual (HA terminal)
31	Ventilating fan control	0000: Unavailable 0001: Available	0000: Unavailable
33	Temperature unit select	0000: °C 0001: °F	0000: °C
5d	External static pressure setting	0000: 100Pa 0001: 50Pa 0002: 75Pa 0003: 150Pa 0004: 125Pa 0005: 175Pa 0006: 200Pa	0000: 100Pa
60	Timer setting (wired remote controller)	0000: Available (can be performed) 0001: Unavailable (cannot be performed)	0000: Available
72	Fan Control during defrost	0000: Fan ON 0001: Fan OFF	0001: Fan OFF
79	Alarm output setup of the header unit	0000: Not including the state of following unit 0001: Including the state of following unit	0000: Not including the state of following unit
F6	Presence of Application control kit (TCB-PCUC2E)	0000: None 0001: Exist	0000: None
FC	Communication protocol *2	0000: TCC-LINK 0003: TU2C-LINK	0000: TCC-LINK

DN	Item	Description	At shipment
16A	Open mode Operation	0000: No change 0001: Run operation	0000: No change
16B	Close mode Operation	0000: No change 0001: Run operation 0001: Card ON mode operation 0002: Run operation(Card ON mode setting)	0000: No change
16C	Open mode Set temp. (Cool,Dry)	-0015: -15°C ~ 0060: 60°C	0018: 18°C
16D	Open mode Set temp. (Heat)	-0015: -15°C ~ 0060: 60°C	0025: 25°C
172	Close mode Set temp. (Cool,Dry)	-0015: -15°C ~ 0060: 60°C	0018: 18°C
173	Close mode Set temp. (Heat)	-0015: -15°C ~ 0060: 60°C	0025: 25°C
180	Effective Notice code* number 01	0000: None 0001 ~ 0255 : Notice code 0129: Notice code (201) 0129: Notice code (202) (0001 ~ 0255 : TU2C-LINK only)	0000: None
181	Effective Notice code* number 02		0000: None
182	Effective Notice code* number 03		0000: None
183	Effective Notice code* number 04		0000: None
184	Effective Notice code* number 05		0000: None
185	Effective Notice code* number 06		0000: None
186	Effective Notice code* number 07		0000: None
187	Effective Notice code* number 08		0000: None
188	Effective Notice code* number 09		0000: None
189	Effective Notice code* number 10		0000: None
1FB	Central device control state	0000: No central device control (Remote controller use is possible) 0001: Central device control (Remote controller use is impossible	0000: No central device control
1FC	Indoor Unit terminating resistance	0000: OFF 0001: ON	0000: OFF
402	Cooling forced thermostat OFF temp. Tαc (Minimum Outdoor/Suction air temp.)	0018: 18°C ~ 0025: 25°C	0019: 19°C
403	Heating forced thermostat OFF temp. Tαh (Maximum Outdoor/Suction air temp.)	0000: 0°C ~ 0017: 17°C	0015: 15°C
404	Cooling design thermostat ON/OFF temp. Tβc (Difference the setup temp. and Outdoor/Suction air temp.)	0000: 0°C ~ 0010: 10°C	0003: 3°C
405	Heating design thermostat ON/OFF temp. Tβh (Difference the setup temp. and Outdoor/Suction air temp.)	0000: 0°C ~ 0010: 10°C	0003: 3°C
406	Cooling forced thermostat OFF temp. Tγc (Minimum Discharge air temp.)	0000: 0°C ~ 0060: 60°C	0003: 3°C
407	Heating forced thermostat OFF temp. Tγh (Maximum Discharge air temp.)	0000: 0°C ~ 0060: 60°C	0060: 60°C

*1 Display order of “00Un”and “0099” varies depending on remote controller models or communication types.

For Central control address (DN [03]), Indoor unit address (DN [13]), FS unit address (DN [FE])

Remote controller	Communication type	Display order
U series	TU2C-LINK	·· ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔···
	TCC-LINK	·· ⇔ 0064 ⇔ 00Un ⇔ 0001 ⇔···
Other than U series	TCC-LINK	·· ⇔ 0064 ⇔ 0099 ⇔ 0001 ⇔···

For Line address (DN [12])

Remote controller	Communication type	Display order
U series	TU2C-LINK	·· ⇔ 0128 ⇔ 00Un ⇔ 0001 ⇔···
	TCC-LINK	·· ⇔ 0030 ⇔ 00Un ⇔ 0001 ⇔···
Other than U series	TCC-LINK	·· ⇔ 0030 ⇔ 0099 ⇔ 0001 ⇔···

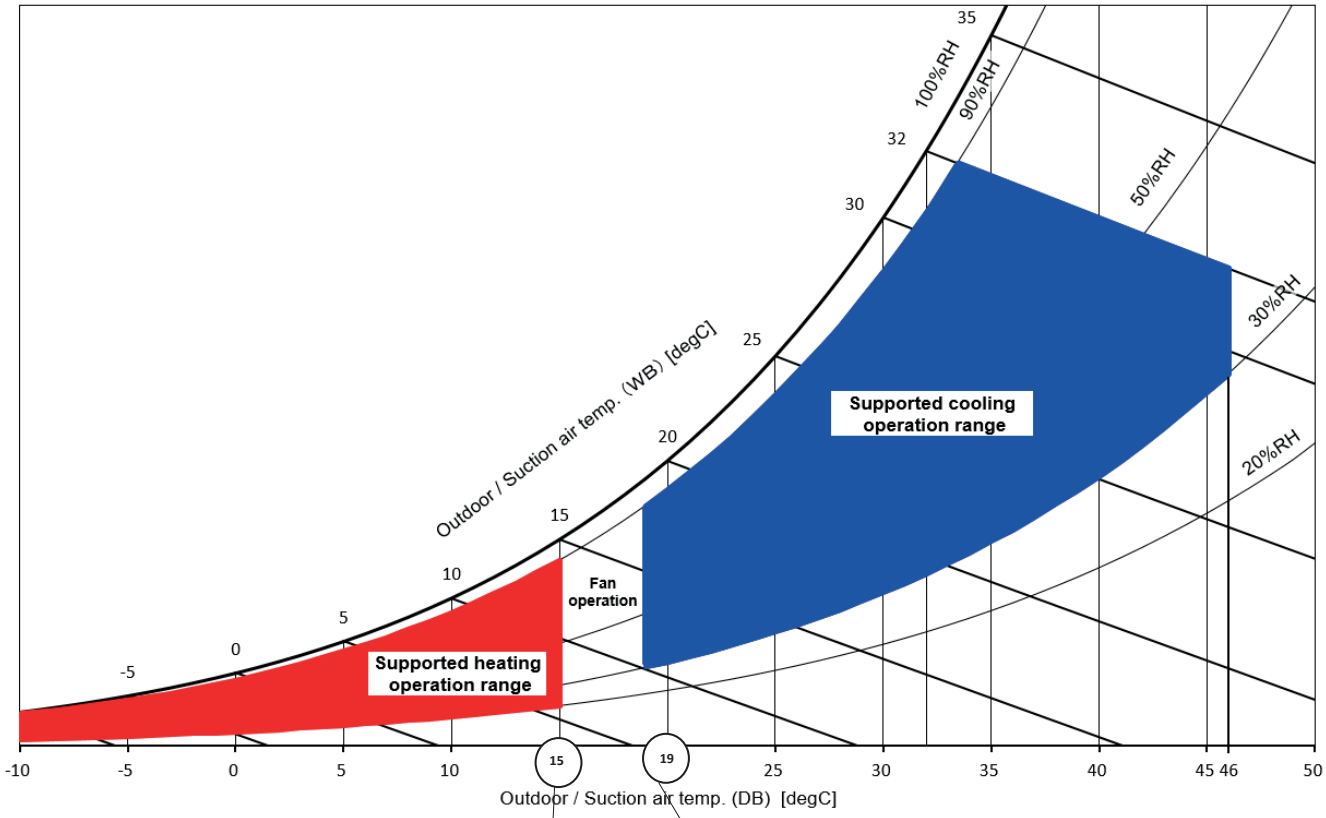
For Group address (DN [14])

Remote controller	Communication type	Display order
U series	TU2C-LINK	·· ⇔ 0002 ⇔ 00Un ⇔ 0001 ⇔··
	TCC-LINK	
Other than U series	TCC-LINK	·· ⇔ 0002 ⇔ 0099 ⇔ 0001 ⇔···

*2 Communication protocol can be automatically switched with the setup in the outdoor unit during installation.

■ Special Mentions

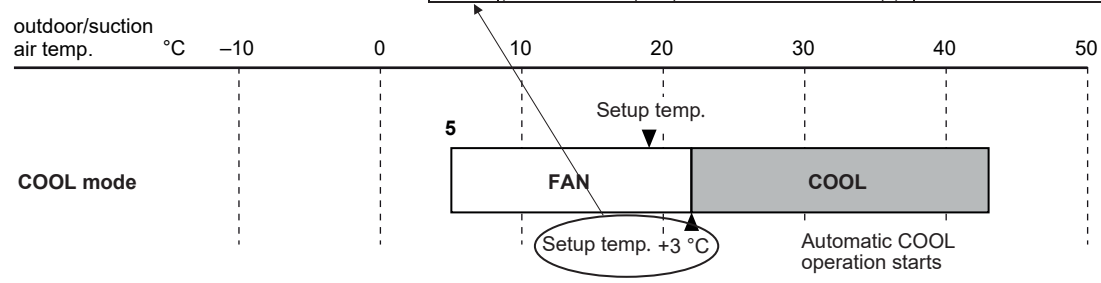
Regarding set on the DN code 402 to 405, please see as below details. It is available change / setting each thermostat value, but when change these value, should be considered the usage environment and so on.Unexpected failure / problems may occur due to setting changes.

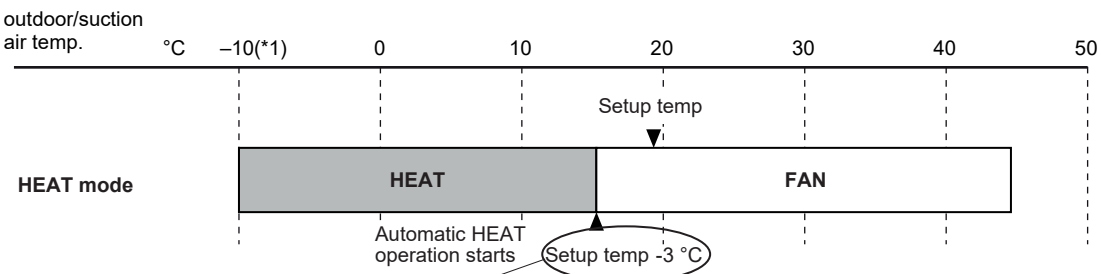


DN		
402	Cooling forced thermostat OFF temp. Tαc (Minimum Outdoor/Suction air temp.)	0018: 18°C ~ 0025: 25°C

DN		
403	Heating forced thermostat OFF temp. Tαh (Maximum Outdoor/Suction air temp.)	0000: 0°C ~ 0017: 17°C

DN		
404	Cooling design thermostat ON/OFF temp. Tβc (Difference the setup temp. and Outdoor/Suction air temp.)	0000: 0°C ~ 0010: 10°C





DN		
405	Heating design thermostat ON/OFF temp. Tβh (Difference the setup temp. and Outdoor/Suction air temp.)	0000: 0°C ~ 0010: 10°C

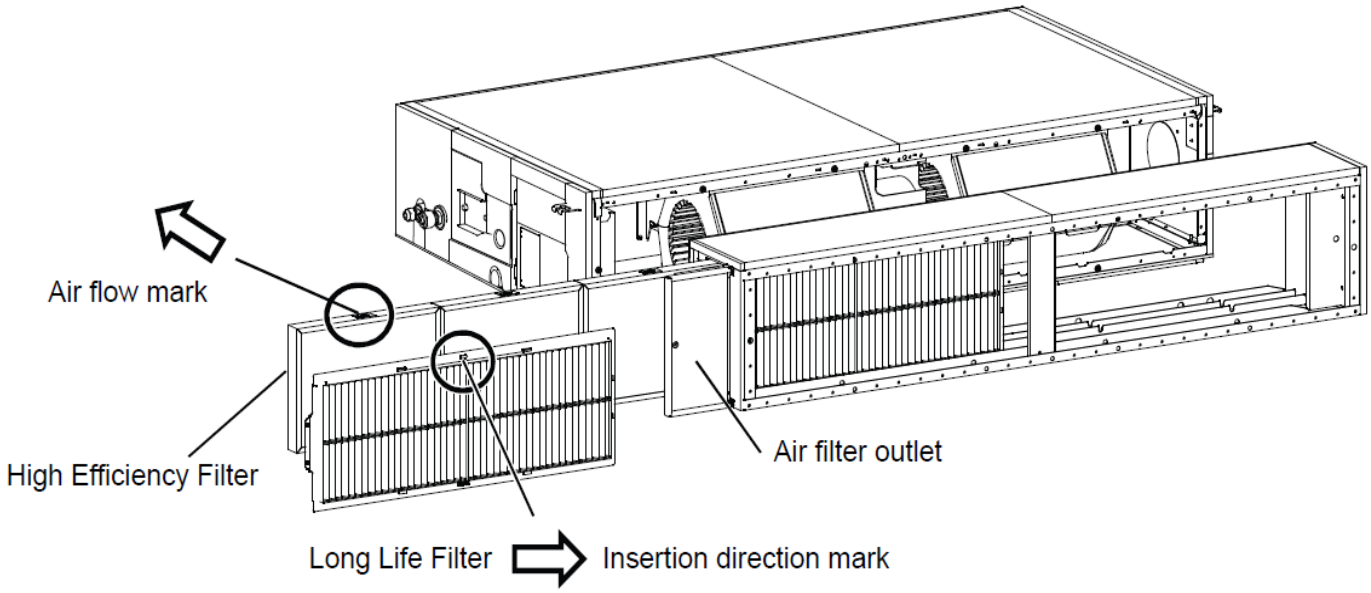
14. Accessories

List

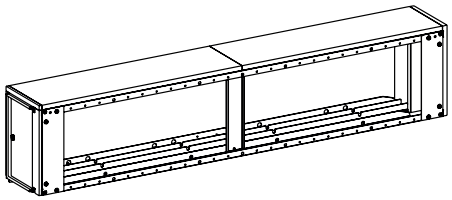
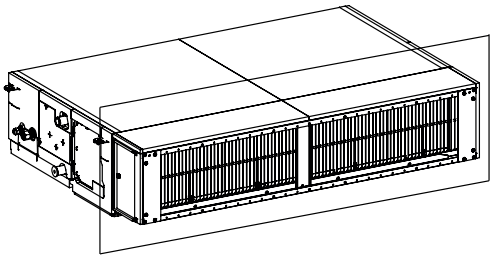
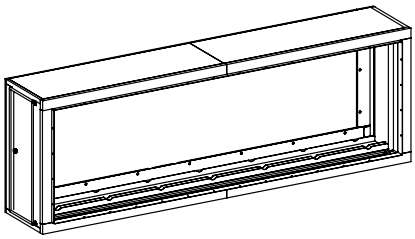
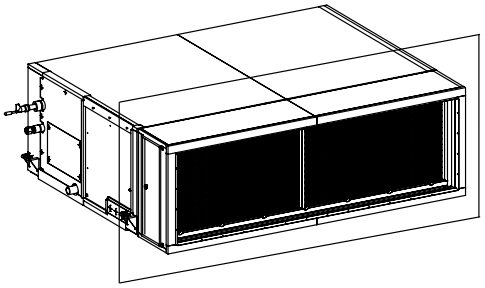
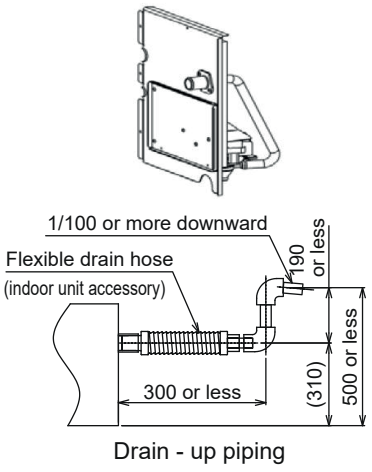
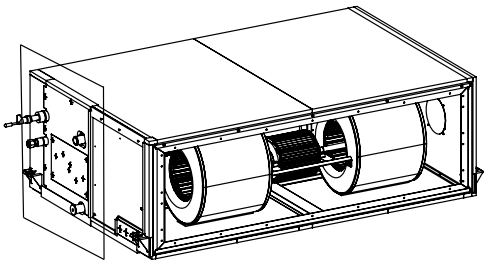
Parts name		Model name	Applied model
Drain Pump kit		(standard equipment)	MMD-UP0481HFP-E/TR
		TCB-DP40DFP-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1
Long Life Filter (*1)		TCB-LK1401D-E	MMD-UP0481HFP-E/TR
		TCB-LK2801D-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1
		TCB-PF1281D-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1
Filter Chamber		TCB-FC0481DF-E	MMD-UP0481HFP-E/TR
		TCB-FC1281DF-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1
High Efficiency Filter (*2)	65%	TCB-UFM0481D-E	MMD-UP0481HFP-E/TR
		TCB-UFM1281D-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1
	90%	TCB-UFH0481D-E	MMD-UP0481HFP-E/TR
		TCB-UFH1281D-E	MMD-UP0721/0961/1121/1281HFP-E1/TR1

(*1) Long Life Filter (TCB-LK***) accompany with Flange that can be connected with Fresh air intake unit. The flange cannot be used with High Efficiency Filter (TCB-UF***). (When assembling with a filter chamber, the flange must be removed.)

(*2) High Efficiency Filter (TCB-UF***) requires Filter Chamber (TCB-FC***) for installation.



Shape

Model name	Shape	Attached shape on the duct unit
TCB-FC0481DF-E		
TCB-FC1281DF-E		
TCB-DP40DFP-E	 Drain - up piping	

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