

**SAMSUNG**

**VRF**

# Technical Data Book

OAP Duct for Europe  
(R410A, 50Hz, HP)



# History

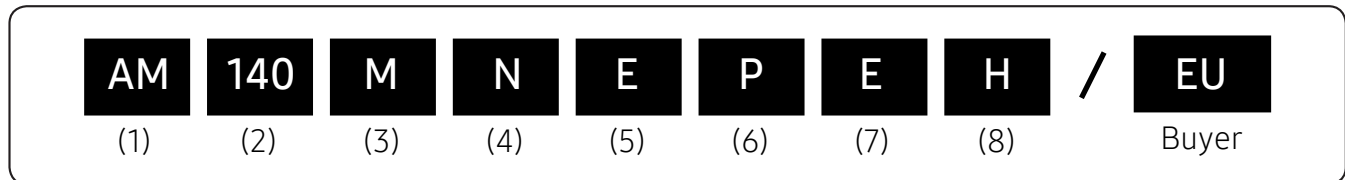
---

Version	Modification	Date	Remark
Ver. 1.0	Release OAP Duct for Europe	17. 2. 8	
Ver. 1.1	Modified the NR Curve of Sound Pressure level	22.09.08	

# Nomenclature

## Indoor Unit

### Model Name



#### (1) Classification

<b>AM</b>	DVM
-----------	-----

#### (2) Capacity

X1/10 kW (3 digits)
---------------------

#### (3) Version

<b>K</b>	2016
<b>M</b>	2017

#### (4) Product Type

<b>N</b>	Indoor Unit
<b>X</b>	Outdoor Unit

#### (5) Product Notation

<b>1</b>	1 Way Cassette
<b>2</b>	2 Way Cassette
<b>N</b>	4 Way Cassette (600x600)
<b>4</b>	4 Way Cassette, 360 Cassette
<b>L</b>	LSP Duct
<b>M</b>	MSP Duct
<b>H</b>	HSP Duct
<b>C</b>	Ceiling
<b>J</b>	Console
<b>F</b>	Floor Standing
<b>A</b>	A3050 (Wall Mounted)
<b>E</b>	Outdoor Air Processing Duct

#### (6) Feature

<b>F</b>	Flagship
<b>P</b>	Premium
<b>D</b>	Deluxe
<b>S</b>	Standard

#### (7) Rating Voltage

<b>E</b>	1Φ, 220~240V, 50Hz
<b>C</b>	1Φ, 208~230V, 60Hz
<b>K</b>	1Φ, 220~240V, 50/60Hz

#### (8) Mode

<b>C</b>	Cooling Only (R410A)
<b>H</b>	Heat Pump (R410A)

# Features & Benefits

## Outdoor Air Processing Duct 100% fresh treated air supply

### Conserve energy and costs with practical, highpowered operation

Samsung's new Outdoor Air Processing Duct is an outside fresh air treatment unit with integrated ventilation, combining fresh air processing and air conditioning via a single system.

Air conditioning indoor units and an Outdoor Air Processing unit can be connected to the same refrigerant line, resulting in enhanced design flexibility and a significant reduction in total system costs.

A BLDC motor extends the savings with considerably less energy consumption.

### High-efficiency motor

The BLDC motor supports the highest efficiency level possible. Its low-consumption design saves up to 32 percent more energy than conventional products for more economical and practical operation.

### Quiet operation

Equipped with the proficient BLDC motor, Outdoor Air Processing Duct operates quietly with a sound level as low as 42 dB, slightly higher than that of a library. Such distraction-free operation ensures optimum comfort and calm for any environment.

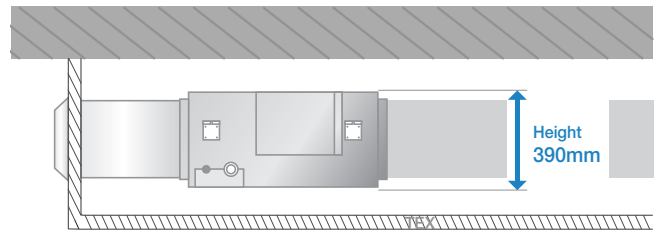


### Full-range temperature processing

Samsung Outdoor Air Processing Duct supplies fresh air to the interior environment by cold or heat processing a wide spectrum of outside temperatures ranging from  $-5^{\circ}\text{C}$  -  $52^{\circ}\text{C}$ .

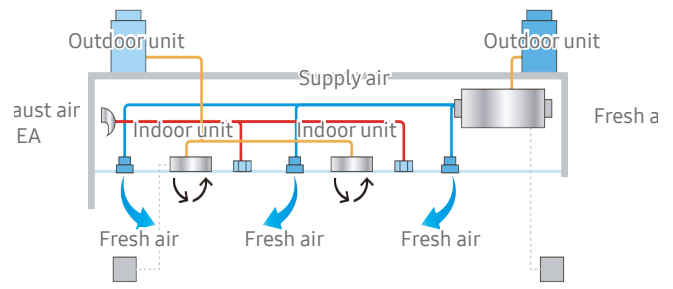
### Flexible installation

This light and compact unit, with its shorter height of 390 mm, enables users to conveniently install and manage it in a variety of areas with a host of installation options.



### Flexible static pressure control





































































































If the installation area of the duct exceeds the standard, then the static pressure control system maintains the optimized air volume by adjusting the fan speed.
























# Line-up

## Indoor Units

Model		Capacity (kW)															
		1.5	1.7	2.2	2.8	3.2	3.6	4.5	5.6	6.0	7.1	8.2	9.0	11.2	12.8	14.0	16.0
1Way CST	JSF-0																
	JSF-1																
	JSF-2																
2Way CST																	
4Way CST																	
360 CST																	
Floor Standing Unit																	
4Way CST S (600X600)																	
Duct S (MSP)																	
Slim Duct																	
MSP Duct																	
Ceiling																	
Console																	
Boracay																	
Boracay (with EEV)																	
AR5000																	
AR5000 (with EEV)																	

# Line-up

## Indoor Units

Model	Capacity (kW)															
	6.0	7.1	8.2	9.0	11.2	12.8	14.0	16.0	18.0	22.0/ 22.4	25.0	28.0	32.0	50.0	500 CMH	1000 CMH
HSP Duct																
OAP Duct																
Big Duct																
PAC																
Hydro Unit HE																
Hydro Unit HT																
ERV Plus																

### NOTE

- Make sure to use an indoor unit that is compatible with DVM S.
- If the total capacity of the connected indoor units exceeds the indicated maximum capacity, cooling and heating capacity of the indoor unit may decrease.
- Total capacity of the connected indoor units can be allowed from 50% to 130% of the total outdoor unit capacity.  
 $0.5 \times \Sigma (\text{Outdoor unit capacity}) \leq \text{Total capacity of the connected indoor units} \leq 1.3 \times \Sigma (\text{Outdoor unit capacity})$ 
  - ※ You can connect maximum 64 indoor units to the outdoor unit. Maximum quantity of connectable indoor unit is set to 64 since outdoor unit only support up to 64 communication address. Indoor unit address can be assigned from 0~63. If the indoor unit address was assigned from 64~79, E201 error will occur.
  - ※ Maximum 32 Wall-mount type indoor units with EEV (AM\*\*\*NQEHE\*\*\*, AM\*\*\*JNVDKH\*\*\*) can be connected.

# Contents

---

1. Specification	8
2. Summary Table	10
3. Capacity Table	11
4. Dimensional Drawing	14
5. Center of Gravity	16
6. Electrical Wiring Diagram	17
7. Sound Data	19
8. Fan Characteristics (PQ curve)	21
9. Piping Diagram	22
10. Installation	23
11. Accessory	28

# 1. Specification

## OAP Duct

Type				OAP Duct	OAP Duct	OAP Duct
Model Name				AM140MNEPEH/EU	AM220MNEPEH/EU	AM280MNEPEH/EU
Power Supply			Φ, #, V, Hz	1,2,220-240,50	1,2,220-240,50	1,2,220-240,50
Mode			-	HP	HP	HP
Performance	Capacity Cooling (ISO/ SASO)	Cooling (ISO/SASO)	kW	14	22.4	28
			Btu/h	47,800	76,400	95,500
		Heating	kW	8.9	13.9	17.4
			Btu/h	30,400	47,400	59,400
Power	Power Input	Cooling	W	300	450	600
				Heating	300	450
	Current Input	Cooling	A	2.2	3.5	4.6
				Heating	2.2	3.5
	Current	MCA	A	3.2	5.2	6.2
		MFA		15	15	15
Heat exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube
	Material	Fin	-	Al	Al	Al
		Tube	-	Cu	Cu	Cu
	Fin Treatment		-	Green Hydrophile	Green Hydrophile	Green Hydrophile
Fan	Type		-	Sirocco Fan	Sirocco Fan	Sirocco Fan
	Quantity		EA	2	2	2
	Air Flow Rate	H/M/L	m <sup>3</sup> /min	18	28	35
			l/s	300	466.7	583.3
	External Pressure	Max. (Min/Std/Max)	mmAq	15.3 / 20.4 / 25.5	18.4 / 23.4 / 29.6	20.4 / 25.5 / 30.6
			Pa	150/200/250	180/230/290	200/250/300
Fan Motor	Model		-	BLDC Motor	BLDC Motor	BLDC Motor
	Output x n		W	183	630	630
Piping Connections	Liquid Pipe		Type	Flare connection	Flare connection	Flare connection
			Φ, mm (inch)	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
	Gas Pipe		Type	Flare connection	Flare connection	Flare connection
			Φ, mm (inch)	15.88 (5/8")	19.05 (3/4")	22.22 (7/8")
	Heat insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
Drain Pipe		Φ, mm	VP25 (OD 32,ID 25)	VP25 (OD 32,ID 25)	VP25 (OD 32,ID 25)	
Wiring connections	Transmission Cable	Min.	mm <sup>2</sup>	0.75	0.75	0.75
		Remark	-	F1,F2	F1,F2	F1,F2
Refrigerant	Type		-	R410A	R410A	R410A
	Electronic Expansion Valve		-	EEV INCLUDED	EEV INCLUDED	EEV INCLUDED
Sound	Sound Pressure Level	H/M/L	dB(A)	42	46	47
		Cooling		65	66	69
Dimensions	Net Weight		kg	49	81.5	81.5
	Shipping Weight		kg	56	90.5	90.5
	Net Dimensions (W×H×D)		mm	1210 x 370 x 656	1360 x 460 x 910	1360 x 460 x 910
	Shipping Dimensions (W×H×D)		mm	1456 x 778 x 434	1612 x 519 x 984	1612 x 519 x 984
Casing	Material		-	EGI Steel Plate	EGI Steel Plate	EGI Steel Plate

# 1. Specification

---

Type				OAP Duct	OAP Duct	OAP Duct
Model Name				AM140MNEPEH/EU	AM220MNEPEH/EU	AM280MNEPEH/EU
Additional Accessories	Drain Pump	External Model	-	-	MDP-G075SP	MDP-G075SP
		Internal Model	-	MDP-M075SGU2D	-	-
		Max. lifting Height / Displacement	mm / Liter/h	750/24	750/24	750/24
	Air Filter	-	Removable / Washable	Removable / Washable	Removable / Washable	

## NOTE

- Specification may be subject to change without prior notice.
- 1) Mode : HP(Heat Pump), HR(Heat Recovery)
  - 2) Capacities are based on (Equivalent refrigerant piping 7.5m, Level differences 0m);
    - Cooling : Indoor temperature : 35°C DB, 28°C WB / Outdoor temperature : 35°C DB, 28°C WB
    - Heating : Indoor temperature : 0°C DB, -3°C WB / Outdoor temperature : 0°C DB, -3°C WB
  - 3) Sound level was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.
  - 4) These products contain R410A (GWP=2,088) which is fluorinated greenhouse gas.
  - 5) Select wire size based on the value of MCA



## 2. Summary Table

### OAP Duct

#### Performance Characteristics

Model Code	Fan Speed	Capacity (kW)			Airflow (CMM)	Sound Pressure (dBA)	Sound Power (dBA)	Static Pressure (Min/Std/Max) (mmAq)
		Cooling	Sensible	Heating				
AM140MNEPEH/EU	High	14.0	6.8	8.9	18	42	65	15.3 / 20.4 / 25.5
AM220MNEPEH/EU	High	22.4	10.8	13.9	28	46	66	18.4 / 23.4 / 29.6
AM280MNEPEH/EU	High	28.0	13.8	17.4	35	47	69	20.4 / 25.5 / 30.6

#### NOTE

- Sound data is based on cooling operation.

#### Electrical Characteristics

Model Code	Power Supply (Φ, #, V, Hz)	Power Input (W)	Current Input (A)	MCA (A)	MFA (A)	FLA (A)
AM140MNEPEH/EU	1,2,220-240,50	300	2.2	3.2	15	2.5
AM220MNEPEH/EU	1,2,220-240,50	450	3.5	5.2	15	4.1
AM280MNEPEH/EU	1,2,220-240,50	600	4.6	6.2	15	4.9

#### NOTE

- MCA : Minimum circuit amperes
- MFA : Maximum fuse amperes
- Select wire size based on the value of MCA

# 3. Capacity Table

## OAP Duct

### AM140MNEPCH

#### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)																	
	17		17		20		23		26		28		30		32		36	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
	Cooling Capacity (kW)																	
20	3.7	3.2	3.9	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	3.7	3.4	3.9	3.0	5.2	2.7	-	-	-	-	-	-	-	-	-	-	-	-
25	3.7	3.5	3.9	3.2	5.2	3.2	6.8	3.2	-	-	-	-	-	-	-	-	-	-
27	-	-	3.8	3.8	5.2	3.9	6.8	3.9	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	5.2	4.6	6.8	4.6	11.1	4.7	-	-	-	-	-	-	-	-
31	-	-	-	-	5.1	5.0	6.7	5.1	11.1	5.3	14.2	5.4	-	-	-	-	-	-
33	-	-	-	-	5.1	5.1	6.7	5.9	11.0	6.0	14.0	6.0	16.3	5.7	-	-	-	-
35	-	-	-	-	-	-	6.7	6.5	11.0	6.8	14.0	6.8	16.2	6.3	17.5	5.7	-	-
37	-	-	-	-	-	-	6.6	6.6	10.8	7.1	13.3	7.0	15.2	6.6	16.3	6.0	16.8	4.1
40	-	-	-	-	-	-	-	-	10.4	7.2	11.4	7.2	11.9	6.5	13.1	6.0	13.4	4.2
45	-	-	-	-	-	-	-	-	9.7	7.7	10.4	7.6	10.7	6.7	11.6	6.2	12.0	4.4

#### Heating

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)								
	-7	-5	-2.9	0	2	4	6	10	14
	Heating Capacity (kW)								
-5	9.9	9.9	-	-	-	-	-	-	-
0	-	-	8.9	-	-	-	-	-	-
3	-	-	7.9	7.9	7.9	-	-	-	-
7	-	-	-	-	6.4	6.4	6.4	-	-
11	-	-	-	-	-	5.0	5.0	5.0	-
15	-	-	-	-	-	-	3.6	3.6	3.6

# 3. Capacity Table

## OAP Duct

### AM220MNEPCH

#### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)																	
	17		17		20		23		26		28		30		32		36	
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
Cooling Capacity (kW)																		
20	5.7	4.7	6.1	4.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	5.7	4.9	6.1	4.3	8.2	3.9	-	-	-	-	-	-	-	-	-	-	-	-
25	5.7	5.1	6.1	4.6	8.2	4.7	10.8	4.8	-	-	-	-	-	-	-	-	-	-
27	-	-	6.1	5.7	8.1	5.9	10.7	5.9	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	8.1	7.0	10.5	7.0	17.6	7.2	-	-	-	-	-	-	-	-
31	-	-	-	-	8.0	7.8	10.5	8.2	17.6	8.3	22.6	8.4	-	-	-	-	-	-
33	-	-	-	-	8.0	8.0	10.6	9.3	17.5	9.5	22.4	9.6	26.2	9.2	-	-	-	-
35	-	-	-	-	-	-	10.6	10.4	17.5	10.6	22.4	10.8	26.2	10.1	27.8	9.0	-	-
37	-	-	-	-	-	-	10.6	10.6	17.2	11.3	21.4	11.4	24.4	10.4	26.1	9.4	26.8	6.4
40	-	-	-	-	-	-	-	-	16.7	11.6	18.2	11.7	19.0	10.2	21.0	9.4	21.4	6.6
45	-	-	-	-	-	-	-	-	15.5	12.2	16.6	12.2	17.2	10.6	18.5	9.8	19.2	6.9

#### Heating

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)								
	-7	-5	-2.9	0	2	4	6	10	14
	Heating Capacity (kW)								
-5	15.5	15.5	-	-	-	-	-	-	-
0	-	-	13.9	-	-	-	-	-	-
3	-	-	12.2	12.2	12.2	-	-	-	-
7	-	-	-	-	10.0	10.0	10.0	-	-
11	-	-	-	-	-	7.8	7.8	7.8	-
15	-	-	-	-	-	-	5.6	5.6	5.6

# 3. Capacity Table

## OAP Duct

### AM280MNEPCH

#### Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)																		
	17		17		20		23		26		28		30		32		36		
	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	
	Cooling Capacity (kW)																		
20	7.1	5.0	7.6	4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	7.1	5.5	7.6	4.8	10.3	4.1	-	-	-	-	-	-	-	-	-	-	-	-	-
25	7.1	5.8	7.6	5.1	10.2	5.2	13.5	5.4	-	-	-	-	-	-	-	-	-	-	-
27	-	-	7.6	6.5	10.1	6.6	13.4	6.8	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	10.1	8.0	13.4	8.3	22.0	9.2	-	-	-	-	-	-	-	-	-
31	-	-	-	-	10.0	9.4	13.3	9.7	21.9	10.7	28.2	10.9	-	-	-	-	-	-	-
33	-	-	-	-	10.0	10.0	13.3	11.1	21.9	12.1	28.0	12.3	32.8	11.7	-	-	-	-	-
35	-	-	-	-	-	-	13.2	12.5	21.8	13.1	28.0	13.8	32.7	12.9	34.8	11.5	-	-	-
37	-	-	-	-	-	-	13.2	13.2	21.6	14.0	26.7	14.7	30.5	13.4	32.7	12.2	33.5	8.4	-
40	-	-	-	-	-	-	-	-	20.8	14.4	22.8	15.0	23.7	13.2	26.2	12.1	26.8	8.6	-
45	-	-	-	-	-	-	-	-	19.4	15.3	20.8	15.7	21.5	13.7	23.2	12.5	24.0	9.0	-

#### Heating

Outdoor Temperature (°C, DB)	Outdoor Air Temperature (°C WB)								
	-7	-5	-2.9	0	2	4	6	10	14
	Heating Capacity (kW)								
-5	19.2	19.2	-	-	-	-	-	-	-
0	-	-	17.4	-	-	-	-	-	-
3	-	-	15.3	15.3	15.3	-	-	-	-
7	-	-	-	-	12.5	12.5	12.5	-	-
11	-	-	-	-	-	9.8	9.8	9.8	-
15	-	-	-	-	-	-	7.0	7.0	7.0

#### NOTE

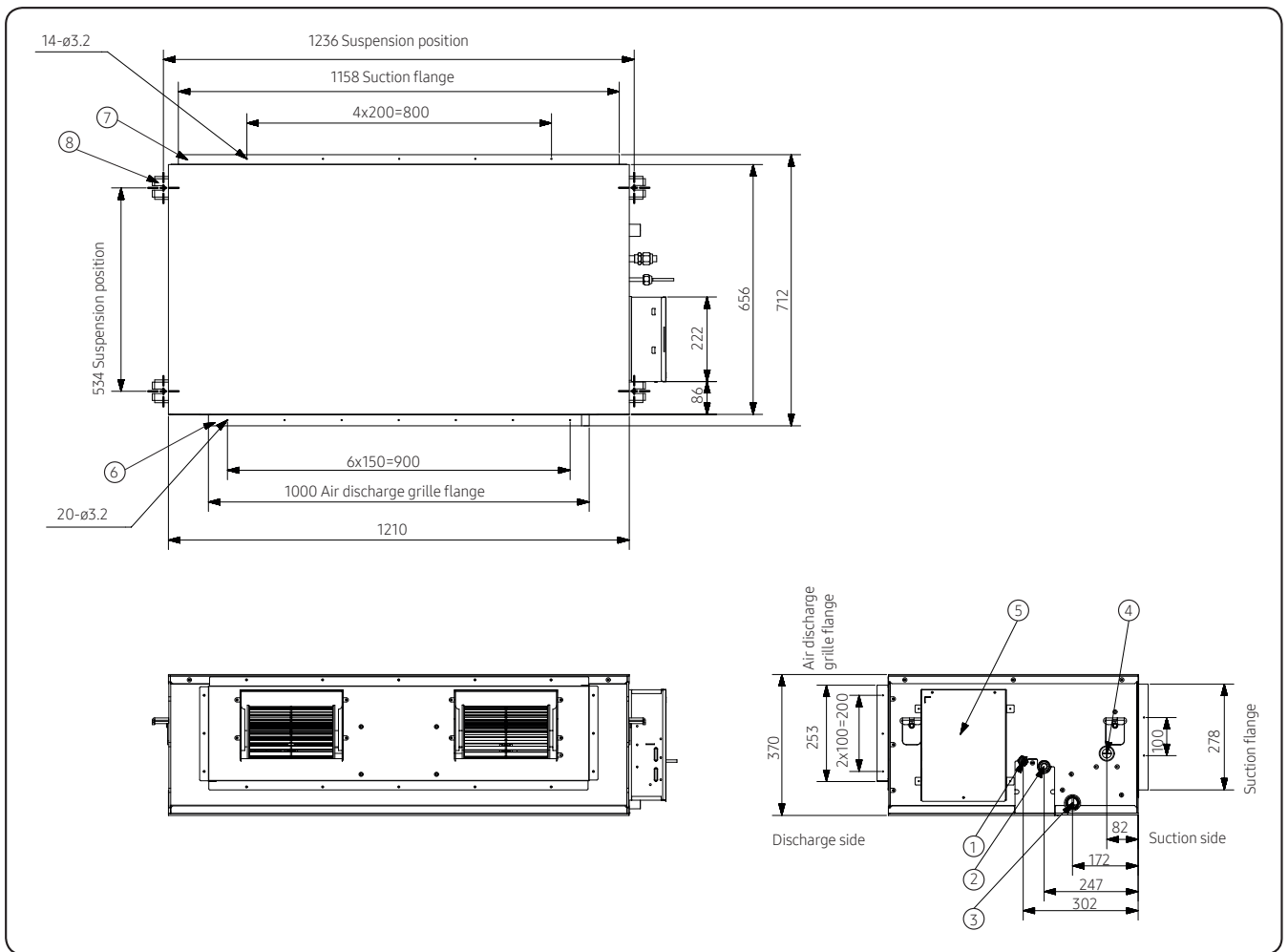
- Capacity Table data may be subject to change without prior notice
- Tested under following conditions
  - Temperature setting for cooling : 18°C
  - Temperature setting for heating : 25°C

# 4. Dimensional Drawing

## OAP Duct

### AM140MNEP×H

Units : mm



NO	Name	Description
1	Diameter of liquid pipe	Φ9.52
2	Diameter of air pipe	Φ15.88
3	Diameter of drain pipe	OD Φ25, ID Φ20
4	Diameter of drain pipe (Optional drain pump)	OD Φ25, ID Φ20
5	Power supply / Communication connection	-
6	Air discharge grille flange	-
7	Suction flange	-
8	Hook	Φ9.52 or M10

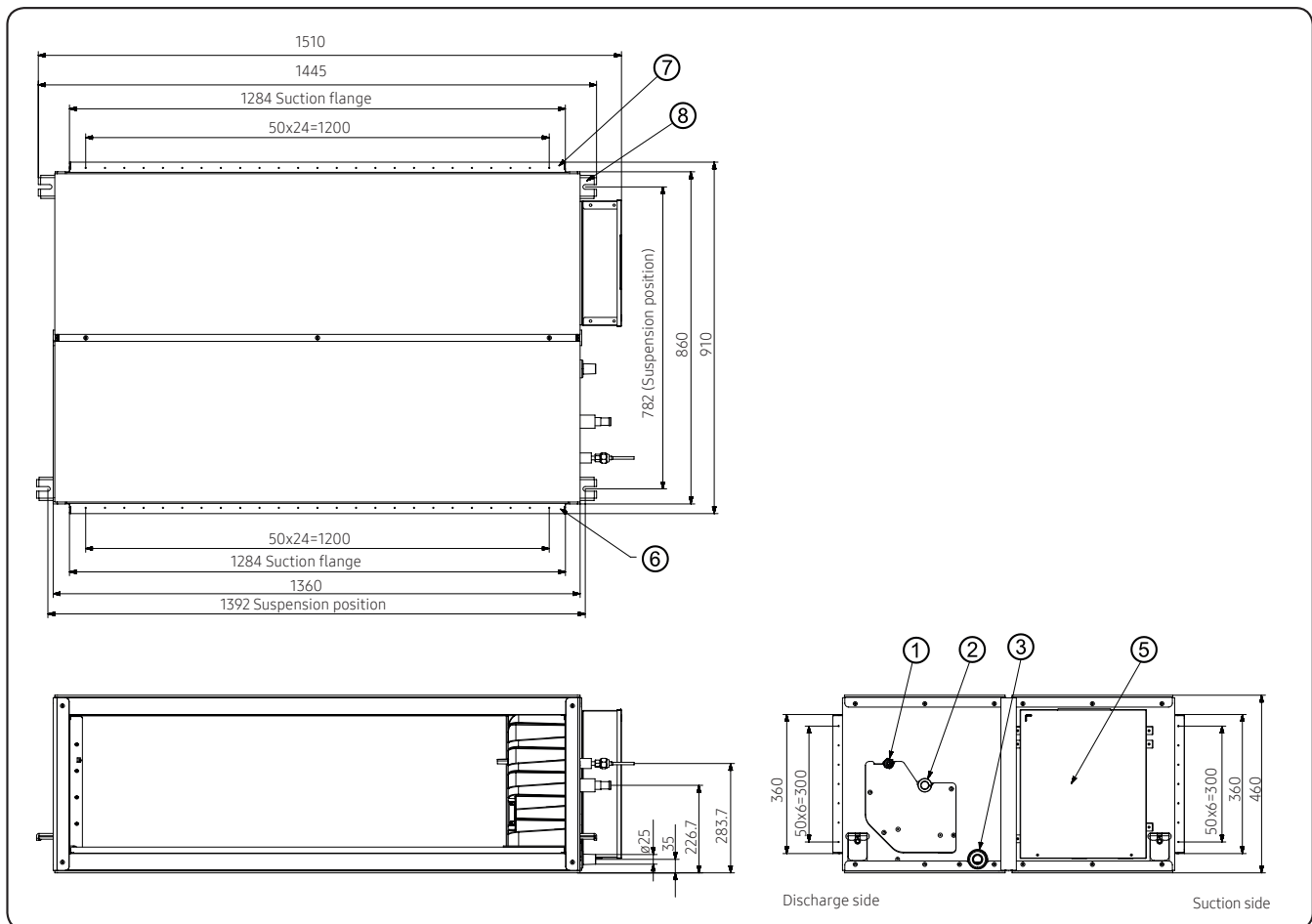


# 4. Dimensional Drawing

## OAP Duct

AM220/280MNEP\*H

Units : mm



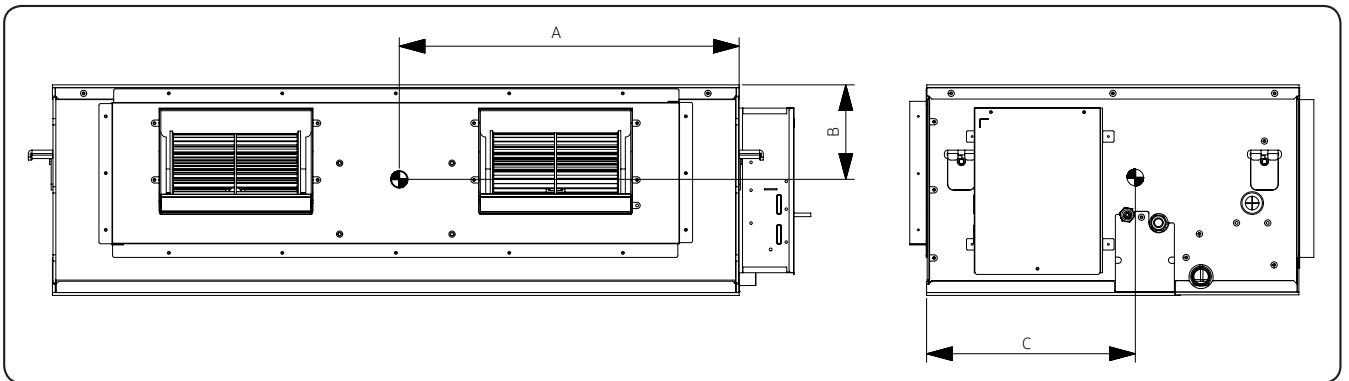
NO	Name	Description
1	Diameter of liquid pipe	$\phi 9.52$
2	Diameter of air pipe	AM220*** : $\phi 19.05$ AM280*** : $\phi 22.22$
3	Diameter of drain pipe	OD $\phi 25$ , ID $\phi 20$
4	Diameter of drain pipe (Optional drain pump)	OD $\phi 25$ , ID $\phi 20$
5	Power supply / Communication connection	-
6	Air discharge grille flange	-
7	Suction flange	-
8	Hook	$\phi 9.52$ or M10

# 5. Center of Gravity

## OAP Duct

### AM140MNEP×H

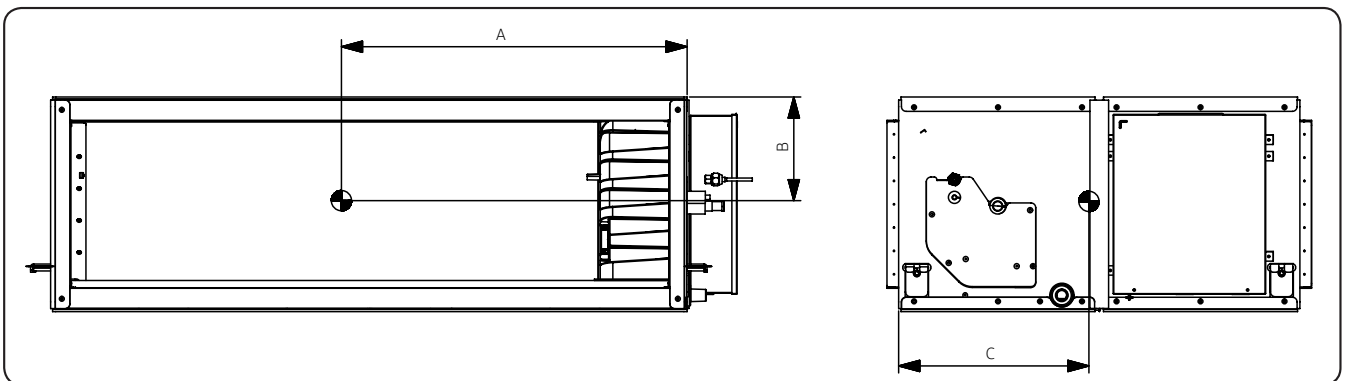
Units : mm



Model	A	B	C
AM140MNEP	590	180	320

### AM220/280MNEP×H

Units : mm

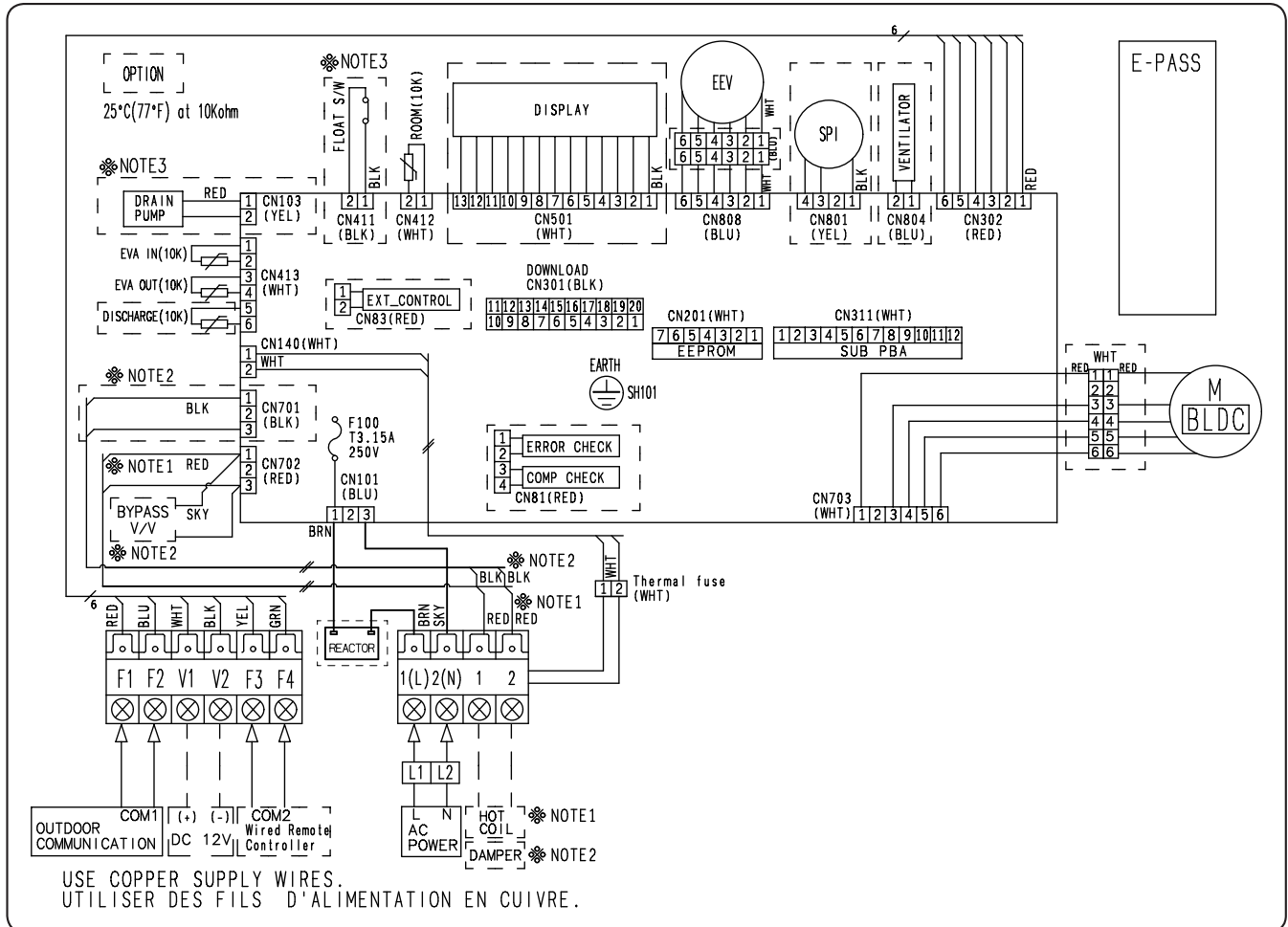


Model	A	B	C
AM220MNEP×H	670	220	420
AM280MNEP×H	670	220	420

# 6. Electrical Wiring Diagram

## OAP Duct

### AM140MNEP\*H



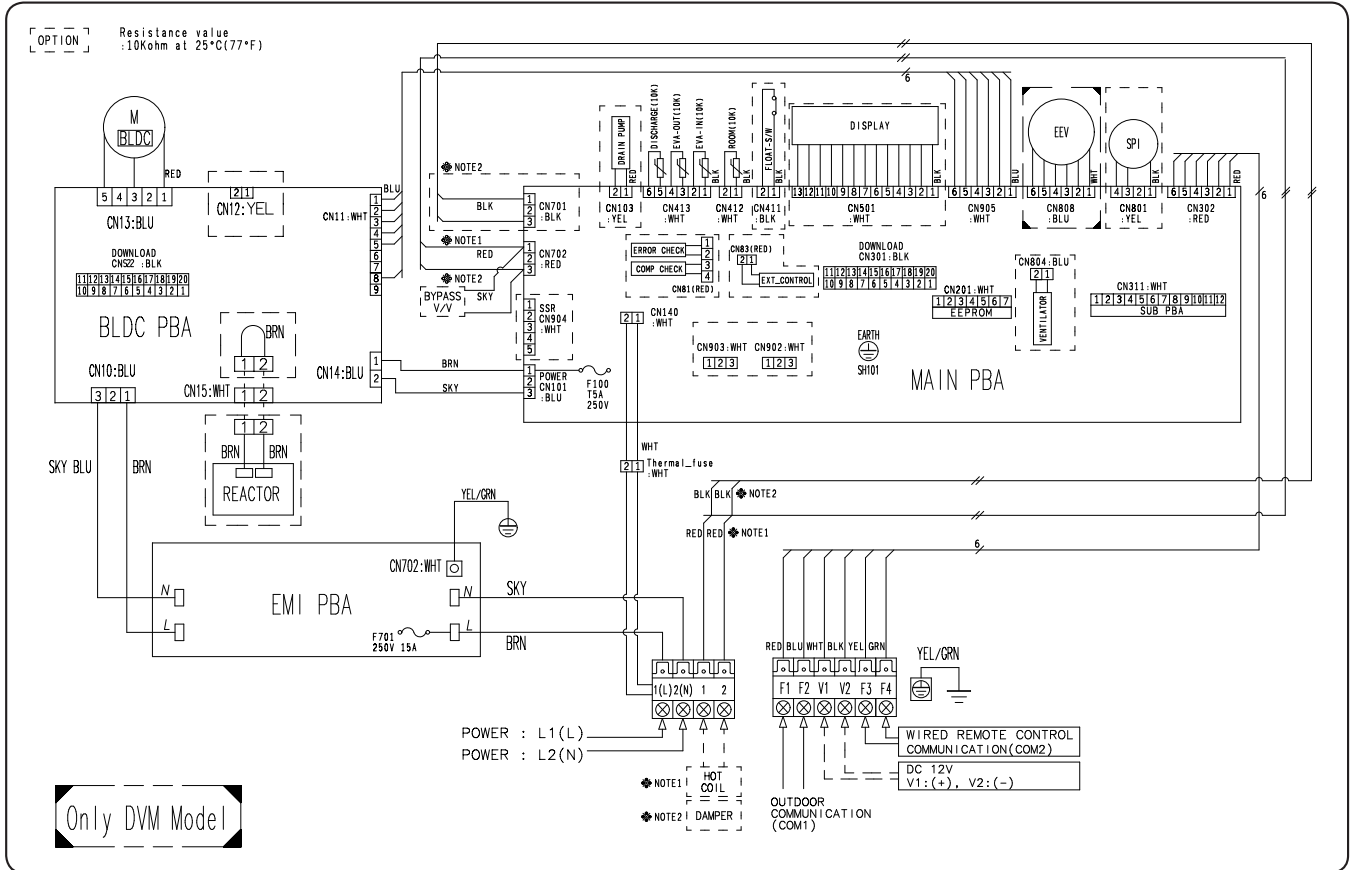
### NOTE

- This wiring diagram applies only to the indoor unit.
- Symbols show as follow : BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue, GRN: green
- For connection wiring indoor-outdoor transmission F1-F2, indoor-wired controller transmission F3-F4.
- Protective earth(SCREW)

# 6. Electrical Wiring Diagram

## OAP Duct

### AM220/280MNEP×H



MAIN PBA	Printed Circuit Board (MAIN)	REACTOR	AC_REACTOR	ROOM (10K)	Thermistor ROOM (10K)
BLDC PBA	Printed Circuit Board (BLDC Driver)	F701	FUSE	EVA-IN (10K)	Thermistor EVA IN (10K)
EMI PBA	Printed Circuit Board (EMI)	F100	FUSE	EVA-OUT (10K)	Thermistor EVA OUT (10K)
M [BLDC]	Motor (IDU fan)	SPI	S-Plasma ion	DISCHARGE (10K)	Thermistor DISCHARGE (10K)
BYPASS V/V	SOLENOID VALVE (Hotgas-bypass)	EEV	Electronic expansion valve		

#### NOTE

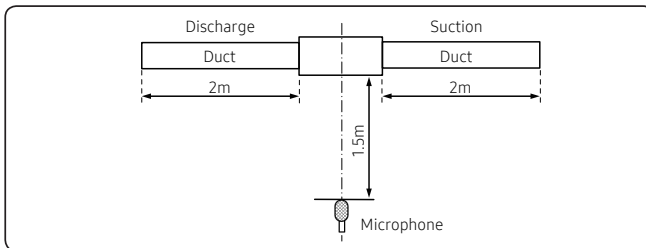
- This wiring diagram applies only to the indoor unit.
- Symbols show as follow : BLK: black, RED: red, BLU: blue, WHT: white, YEL: yellow, BRN: brown, SKY: skyblue, GRN: green
- For connection wiring indoor-outdoor transmission F1-F2, indoor-wired controller transmission F3-F4.
- Protective earth(SCREW)

# 7. Sound Data

## OAP Duct

### Sound Pressure level

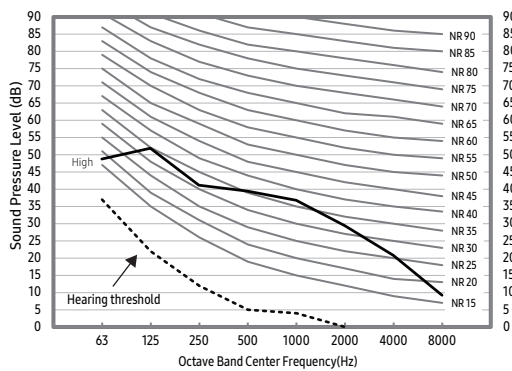
Unit: dB(A)



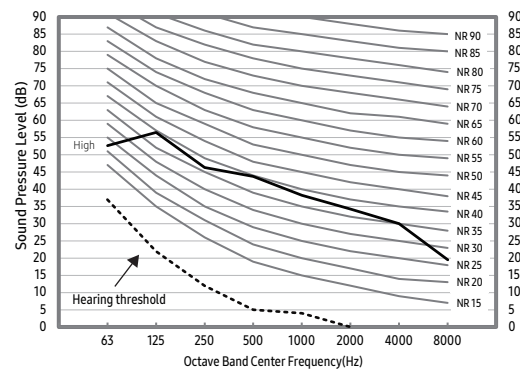
Model	High
AM140MNEP×H××	42
AM220MNEP×H××	46
AM280MNEP×H××	47

- NR Curve

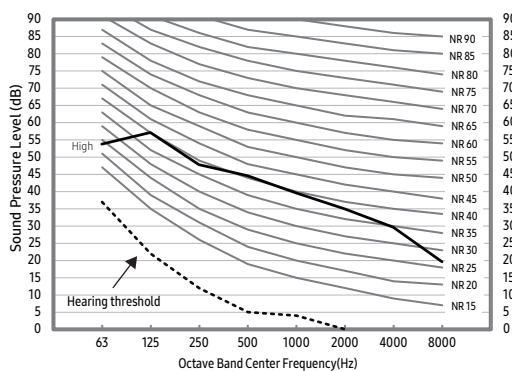
1) AM140MNEP×H



2) AM220MNEP×H



3) AM280MNEP×H



### NOTE

- Specifications may be subject to change without prior notice.
- Sound pressure Level
  - Sound pressure level is obtained in an anechoic room.
  - Sound pressure level is a relative value, depending on the distance and acoustic environment.
  - Sound pressure level may differ depending on operation condition.
  - dBA = A weighted sound pressure level
  - Reference acoustic pressure 0 dB = 20μPa



# 7. Sound Data

## OAP Duct

### Sound Power level

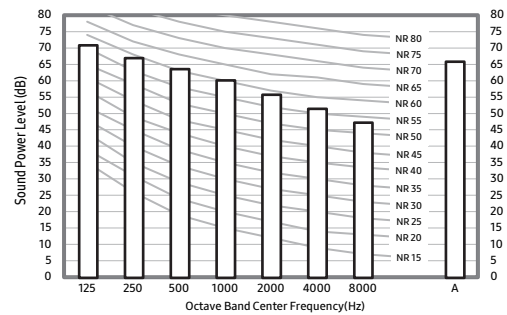
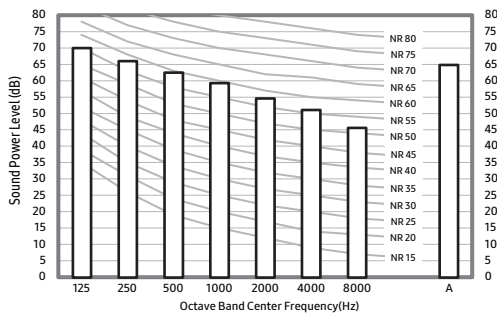
Unit: dB(A)

**NOTE**

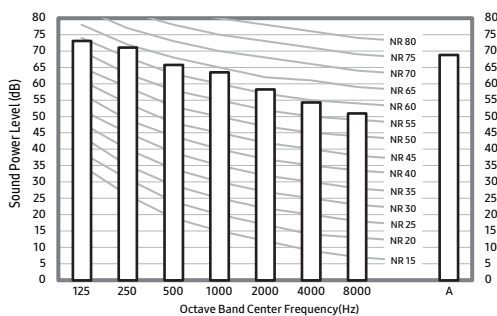
- Specifications may be subject to change without prior notice
- Sound Power Level
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

Model	Power
AM140MNEP×H	65
AM220MNEP×H	66
AM280MNEP×H	69

1) AM140MNEP×H



3) AM280MNEP×H

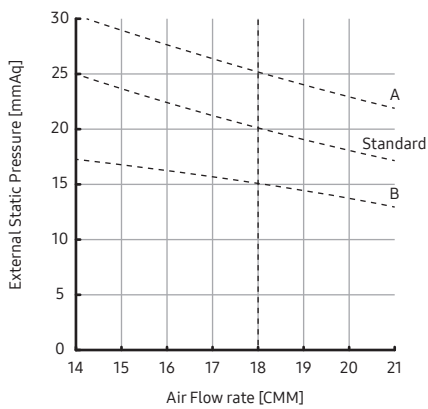


# 8. Fan Characteristics (PQ curve)

## OAP Duct

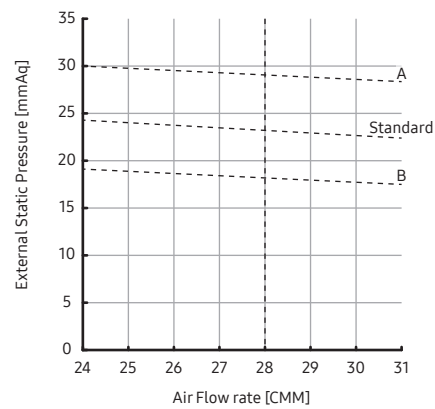
(1) AM140MNEP×H

Classification	ESP	Option Code
A	25	01B064-193520-23E0E0-333000
Standard	20	01B064-1930EB-23E0E0-333000
B	15	01B064-193075-23E0E0-333000



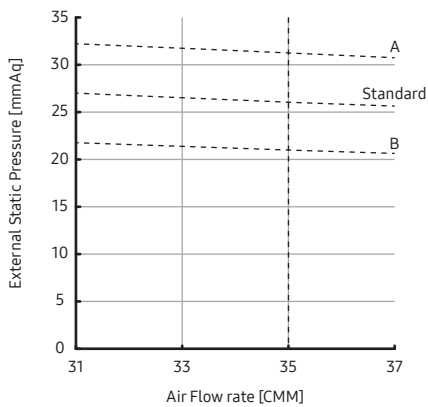
(2) AM220MNEP×H

Classification	ESP	Option Code
A	29	01B064-193520-23E0E0-333000
Standard	23	01B064-1930EB-23E0E0-333000
B	18	01B064-193097-23E0E0-333000



(3) AM280MNEP×H

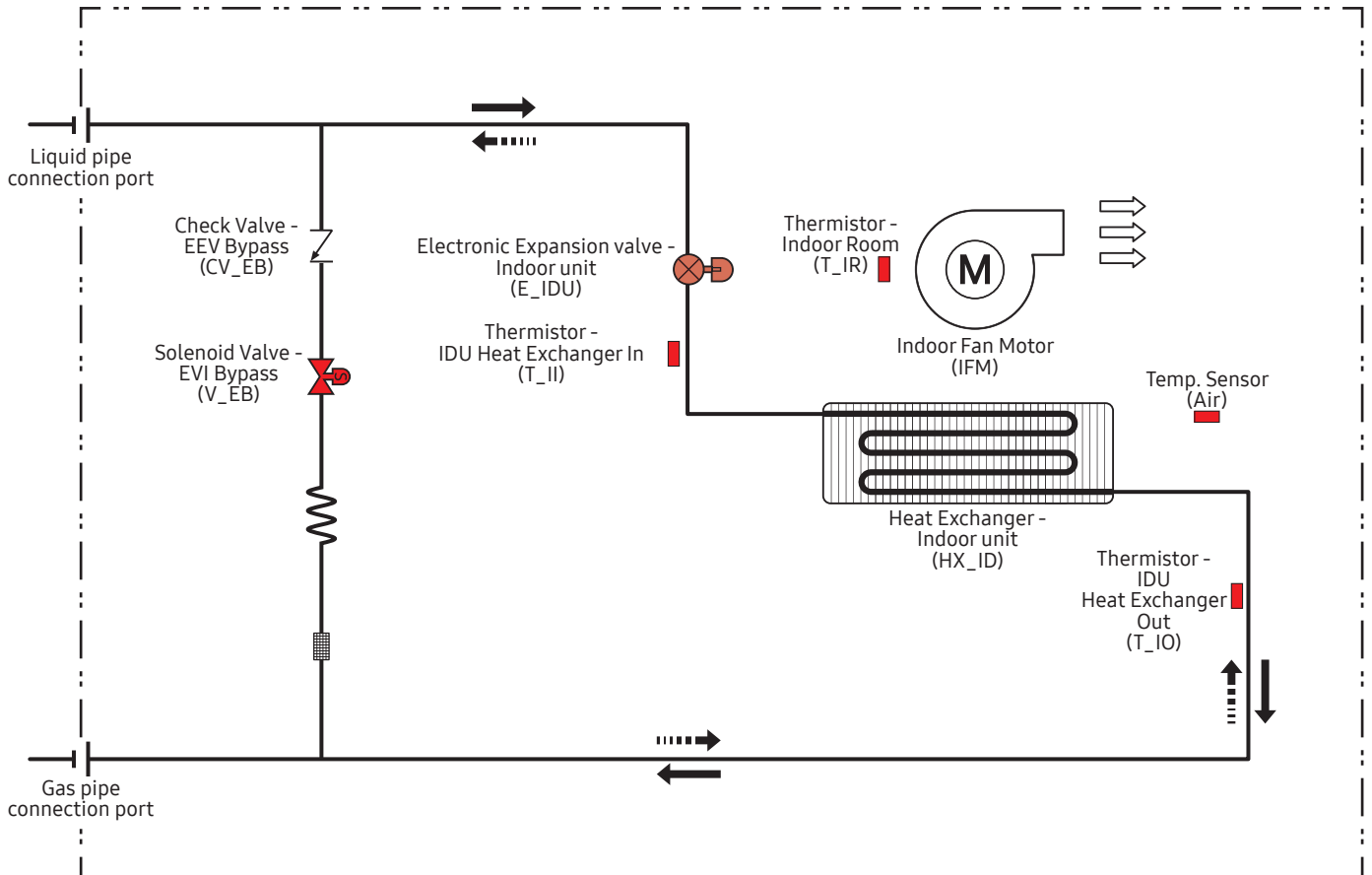
Classification	ESP	Option Code
A	30	01B064-193553-231C1C-333000
Standard	25	01B064-19341F-231C1C-333000
B	20	01B064-1930CA-231C1C-333000



# 9. Piping Diagram

## OAP Duct

AM140/220/280MNEP×H



Refrigerant flow	
Cooling	Heating
→	⋯→

# 10. Installation

## Selecting the Installation Location

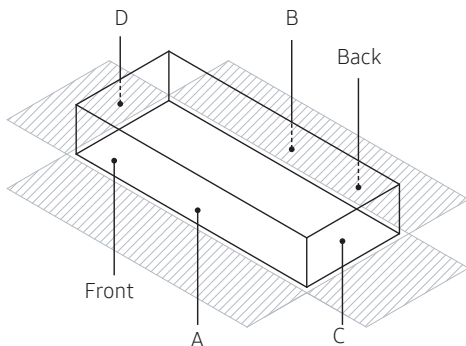
### Indoor unit

- ▶ There must be no obstacles near the air inlet and outlet.
- ▶ Install and mount the indoor unit on a ceiling that can support its weight.
- ▶ Maintain sufficient clearance around the indoor unit.
- ▶ Make sure that the water drains from the hose properly and safely.
- ▶ The indoor unit must be installed in such way that it is out of commonly accessible area. (Not touchable by the users.)
- ▶ Durable walls which can't be shaken.
- ▶ Where it is not exposed to direct sunshine.
- ▶ Where the air filter can be removed and cleaned easily.
- ▶ Cautions on installation
  - 1) Do not install in crowded places. Please install in equipment spaces such as mechanical rooms and adopt measures to prevent noise and vibration.
  - 2) Adopt preventative measures to accommodate noise and vibration according to the ceiling installation condition (washroom, corridor).
  - 3) Separate air outlet shall be installed for the Fresh duct. Do not connect with the inlet of other indoor units, otherwise, the performance of air conditioner will be affected.
  - 4) Please purchase damper to adjust air volume and filter screen for installation.



- In principle, the unit should not be installed at an height of lower than 2.5m from the ground.
- If the unit has proper pipe (300mm in length or more) to avoid contact with the fan motor blower, it is possible to install the unit at a height of between 2.2~2.5m from the ground.
- If the humidity is over 80%, it is required to add 10mm polyethylene foam or other similar insulation to the indoor unit when installing belt or pipe type indoor unit on the ceiling.

### Insulation Guide



Thickness: over 10mm

Fresh duct		A	B	C	D	Front / Rear
AM140***	1210x370x656	1210x370	1210x370	656x370	656x370	Please process the front / rear to sizes suitable for installation of insulation materials on the air inlet / outlet pipes.
AM220/280***	1360x460x910	1360x460	1360x460	910x460	910x460	

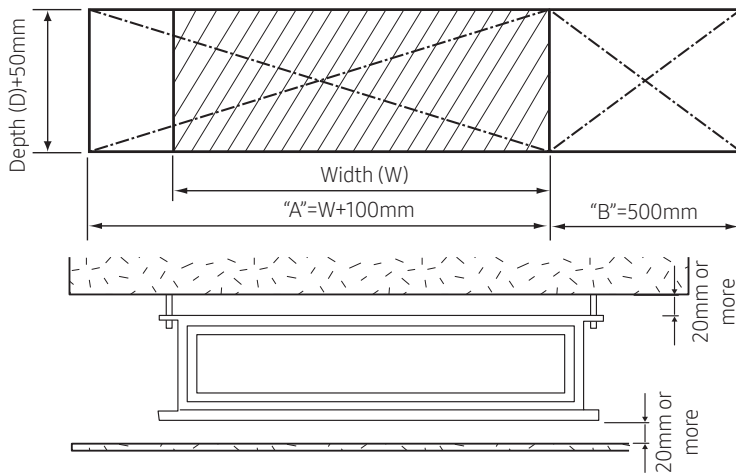
- Insulate the end of the pipe and some curved area by using separate insulator.
- Insulate the discharge and suction part at the same time when you insulate connection duct.
- If the humidity is over 80%, it is required to add 10mm polyethylene foam or other similar insulation to the indoor unit when installing belt or pipe type indoor unit on the ceiling.

# 10. Installation

## Space requirements for indoor unit

► Construction Standard for Inspection Hole.

- 5) In case the ceiling is textile, inspection hole is not necessary.
- 6) In case the ceiling is plaster board, inspection hole depends on the inside height of the ceiling.
  - a. Height is more than 1m : Only "B" [Inspection for PBA] is applied.
  - b. Height is less than 1m : Both "A" & "B" are applied.
  - c. "A" & "B" are inspection holes.

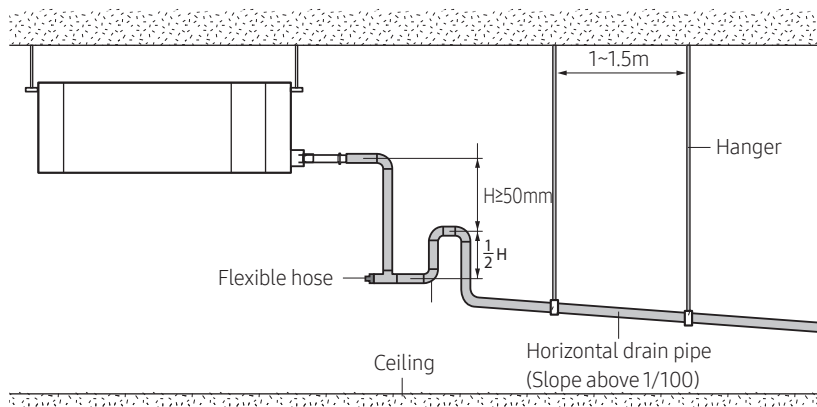


- You must have 20mm or more space between the ceiling and the bottom of indoor unit. Otherwise, the noise from the vibration of indoor unit may bother the user.
- When the ceiling is under construction, the inspection hole must be made to enable servicing, maintenance and cleaning.
- The indoor unit should be installed at a height of 2.5m and/or above ground.

## Connecting Drain Pipe

### Without the drain pump

1. Install horizontal drain pipe with a slope of 1/100 or more and fix it by hanger space of 1.0~1.5m.
2. Install U-trap at the end of the drain pipe to prevent odor to reach the indoor unit.
3. The drain pipe should not be installed at an upward position; it may cause water flowing back to the unit.





# 10. Installation

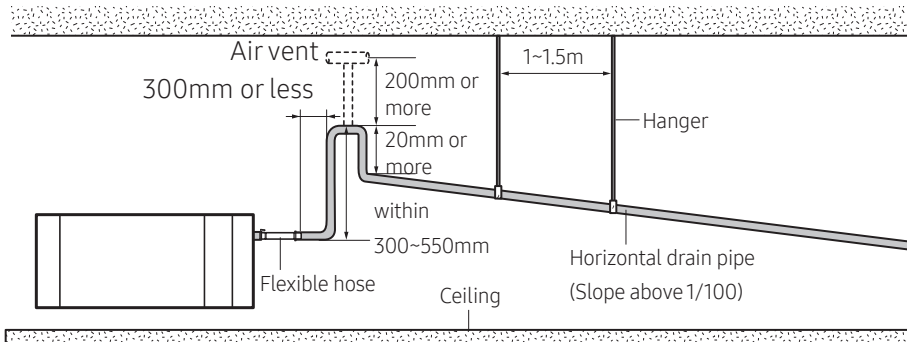
## With the drain pump

1. The drain pipe should be installed within 300mm to 550mm from the flexible hose and then lift down 20mm or more.
2. Install horizontal drain pipe with a slope of 1/100 or more and fix it by hanger space of 1.0~1.5m.
3. Install the air vent in the horizontal drain pipe to prevent water flow back to the indoor unit.



- You may not need to install it if there were proper slope in the horizontal drain pipe.

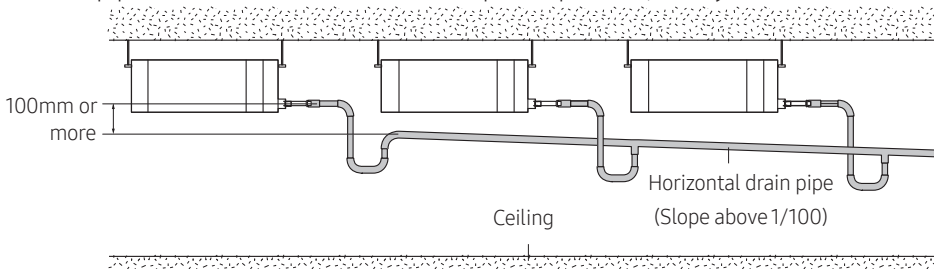
4. The flexible hose should not be installed at an upward position; it may cause water flowing back to the indoor unit.



## Centralized drainage

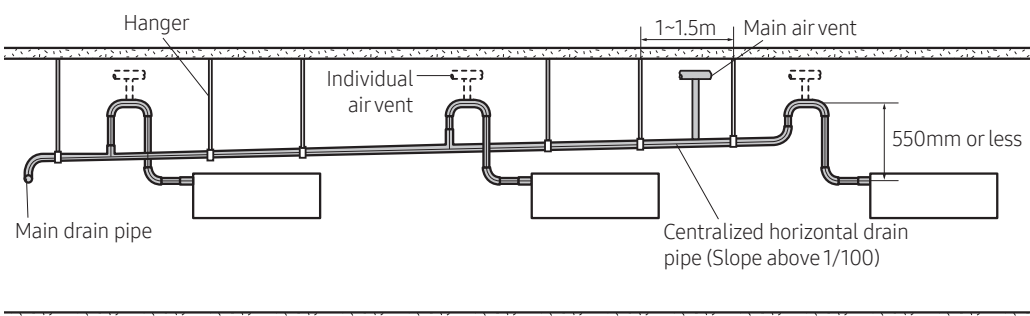
### Without the drain pump

1. Install horizontal drain pipe with a slope of 1/100 or more and fix it by hanger space of 1~1.5m.
2. Install U-trap at the end of the drain pipe to prevent odor to reach the indoor unit.
3. The drain pipe should not be installed at an upward position; it may cause water flowing back to the unit.



### With the drain pump

1. Install main air vent at the front of the farthest indoor unit from the main drain pipe when installed indoor units are more than 3.
2. You may need to install individual air vent to prevent water flow back at the top of each indoor unit drain pipe.



# 10. Installation

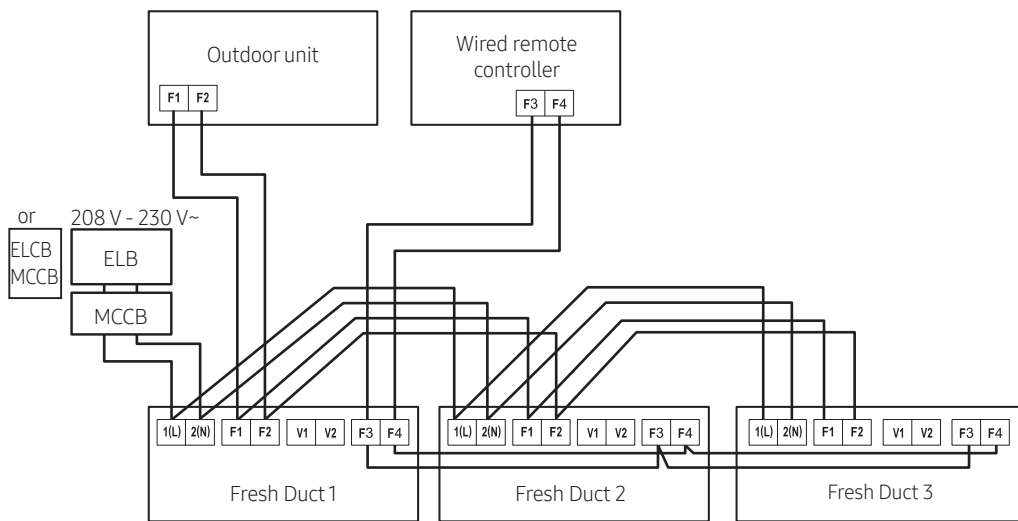
## Wiring Work

### Power and communication cable connection

1. Before wiring work, you must turn off all power source.
2. Indoor unit power should be supplied through the breaker (MCCB: Molded Case Circuit Breaker, ELB: Earth Leakage Breaker, ELCB: Earth Leakage Circuit Breaker) separated by the outdoor power.
  - MCCB: overcurrent protection
  - ELB: earth leakage protection
  - ELCB: overcurrent protection + earth leakage protection
3. The power cable should only use copper wires.
4. Connect the power cable {1(L), 2(N)} among the units and communication cables (F1, F2). The maximum length of cables shall be 1000m.
5. When installing the wired remote control, connect F3 and F4 (for communication).  
(Indoor PBA will be damaged if V1, V2, F3, F4 are shorted out.)
6. Installation conditions for a wired remote controller
  - ▶ A fresh duct and an indoor unit should not be installed by one wired remote controller.
  - ▶ The fresh duct has a different operation mode, temperature setting, etc. Therefore, if the fresh duct and an indoor unit are installed by one wired remote controller, a problem may occur.
  - ▶ Installation between fresh ducts can be controlled by one wired remote controller.

### Example of correct installation

Installation between fresh ducts



\* ELCB : Essential installation.

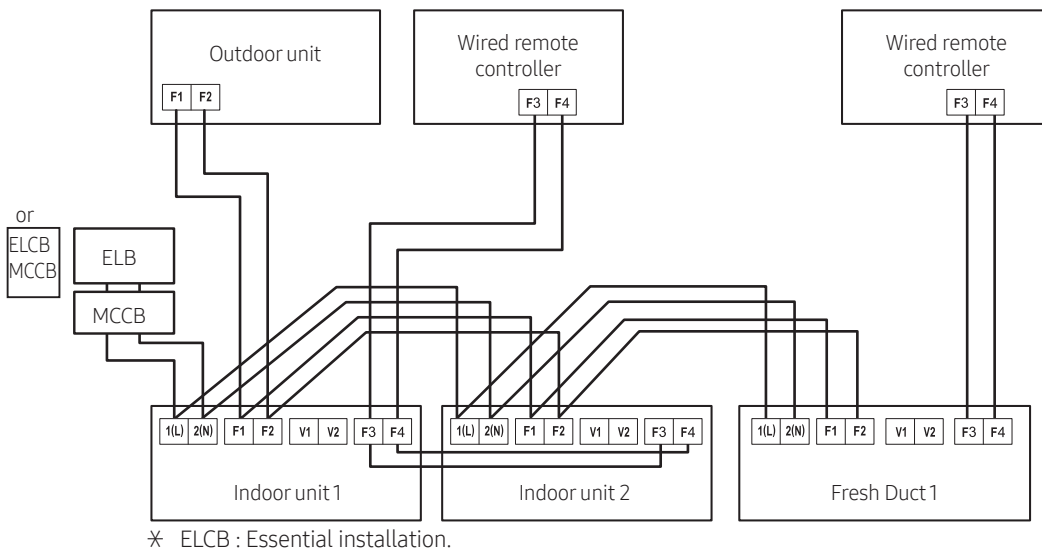


• Power off before connecting any wire. Indoor PBA will be damaged if V1, V2, F3, F4 are shorted out.



• Installation between fresh ducts can be controlled by one wired remote controller.

# 10. Installation



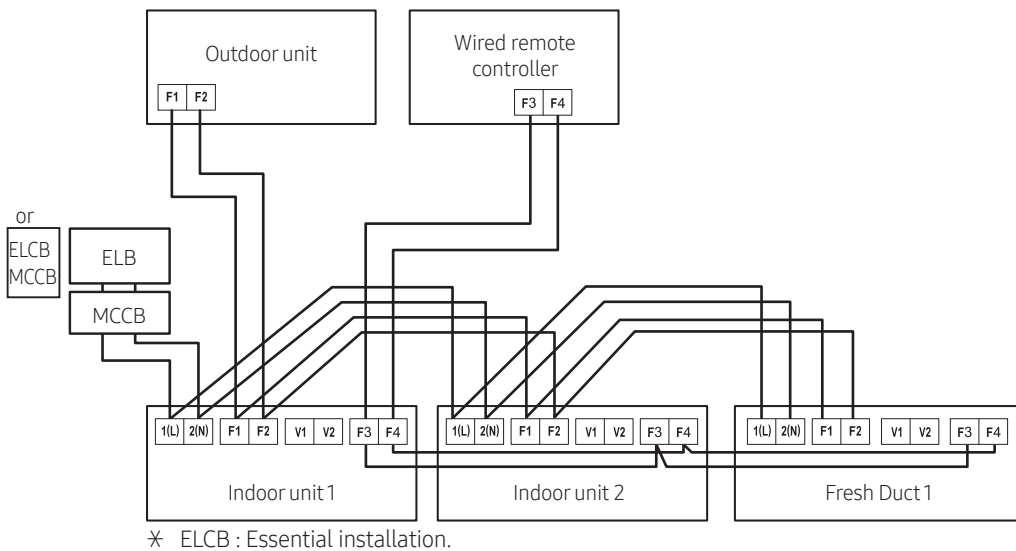
• Power off before connecting any wire. Indoor PBA will be damaged if V1, V2, F3, F4 are shorted out.



• If indoor units are mixed with fresh ducts, they should not be controlled by one wired remote controller.

## Example of incorrect installation

Installation between a fresh duct and an indoor unit














• Power off before connecting any wire. Indoor PBA will be damaged if V1, V2, F3, F4 are shorted out.



• If indoor units mixed with fresh ducts are controlled by one wired remote controller, a problem may occur due to different operation specification.



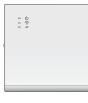
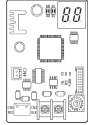
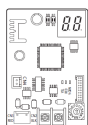




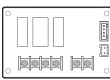
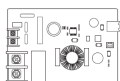


# 11. Accessory

## Controller

Classification	Product	Model	Image	Remark	Using
Individual Control System	Wireless Remote Controller	MR-EH00			DVM, CAC
	Wireless Remote Controller	AR-KH00E		360 CST Only	DVM, CAC
	Wired Remote Controller	MWR-WE11N			DVM, CAC
	Wired Remote Controller - Simple Type	MWR-SH00N			DVM, CAC
	Wired Remote Controller - Touch Simple Type	MWR-SH10N			DVM, CAC
	ERV Wired Remote Controller	MWR-VH12N		ERV Only	DVM, CAC
	Wired Remote Controller	MWR-WW00N		EHS Only	EHS
	Receiver KIT	MRK-A10N			DVM, CAC
	Zone Controller	MWR-ZS00N		Master controller + Damper controller	DVM, CAC
	Zone Controller	MWR-ZS10N		Slave controller	DVM, CAC
	Zone Controller	MRW-TS		External room sensor	DVM, CAC




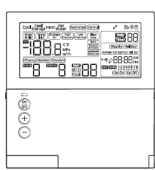
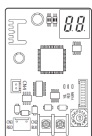
# 11. Accessory

## Controller

Classification	Product	Model	Image	Remark	Using
Centralized Control System	Onoff Controller	MCM-A202DN			DVM, CAC
	Touch Centralized Controller	MCM-A300N			DVM, CAC
	WIFI KIT	MIM-H03N			DVM, CAC
	Interface Module	MIM-N01			DVM, CAC
	ERV Interface Module	MIM-N10			DVM, CAC
Integrated management System	DMS2.5	MIM-D01AN			DVM, CAC
	S-NET3	MST-P3P			DVM, CAC
Gate Way	BACnet Gateway	MIM-B17BN			DVM, CAC
	Lonworks Gateway	MIM-B18BN			DVM, CAC
	External Contact Interface Module	MIM-B14			DVM, CAC
	MTFC (Multi Tenant Function Controller)	MCM-C210N			DVM
	SIM (Signal Interface Module)	MIM-B12N			DVM, CAC
	PIM (Pulse Interface Module)	MIM-B16N			DVM, CAC

# 11. Accessory

## Controller

Classification	Product	Model	Image	Remark	Using
Installation /Test run Solution	S-Converter	MIM-C02N			DVM, CAC
Others	External Room Sensor	MRW-TA			DVM, CAC
	Operation Mode Selection Switch	MCM-C200			DVM
	Module Controller	MCM-A00N		CHILLER Only	CHILLER
	FCU Interface Module	MIM-F10N		CHILLER Only	CHILLER

**NOTE**

- In case you want more information about the accessories, please refer to the control and accessories TDB on [pvi.Samsung.com](http://pvi.Samsung.com) site.

# 11. Accessory

## Controller & Control Accessory Compatibility


	Item	NASA (DVM S)	Non-NASA (DVM +3/+4)	Remark
Individual Control System	Wireless Remote Controller	MR-EH00	MR-EH00	DVM, CAC
	Wireless Remote Controller	AR-KH00E	AR-KH00E	DVM, CAC (360 CST)
	Wired Remote Controller	MWR-WE11N	MWR-WE10	DVM, CAC
	Wired Remote Controller - Simple Type	MWR-SH00N	MWR-SH00	DVM, CAC
	Wired Remote Controller - Touch Simple Type	MWR-SH10N	-	DVM, CAC
	ERV Wired Remote Controller	MWR-VH12N	-	DVM, CAC (ERV)
	Wired Remote Controller	MWR-WW00N	MWR-WW00	EHS
	Receiver KIT	MRK-A10N	-	DVM, CAC
	Zone Controller	MWR-ZS00N	MWR-ZS00	DVM, CAC
	Zone Controller	MWR-ZS10N	MWR-ZS10	DVM, CAC
	Zone Controller	MRW-TS	MRW-TS	DVM, CAC
Centralized Control System	Onoff Controller	MCM-A202DN	MCM-A202D	DVM, CAC
	Touch Centralized Controller	MCM-A300N	-	DVM, CAC
	WIFI KIT	MIM-H03N	MIM-H03	DVM, CAC
	Interface Module	MIM-N01	MIM-N01	DVM, CAC
	ERV Interface Module	MIM-N10	MIM-N10	DVM, CAC
Integrated management System	DMS2.5	MIM-D01AN	MIM-D00A	DVM, CAC
	S-NET3	MST-P3P	MST-P3P	DVM, CAC
Gate Way	BACnet Gateway	MIM-B17BN	MIM-B17	DVM, CAC
	Lonworks Gateway	MIM-B18BN	MIM-B18	DVM, CAC
	External Contact Interface Module	MIM-B14	MIM-B14	DVM, CAC
	MTCF (Multi Tenant Function Controller)	MCM-C210N	-	
	SIM (Signal Interface Module)	MIM-B12N	MIM-B12	DVM, CAC
	PIM (Pulse Interface Module)	MIM-B16N	MIM-B16	DVM, CAC
	Module Controller	MCM-A00N	-	CHILLER ONLY
	FCU KIT	MIM-F00N	-	CHILLER ONLY
	FCU Interface Module	MIM-F10N	-	CHILLER ONLY
Installation / Test run Solution	S-Converter	MIM-C02N	MIM-C02	DVM, CAC
Others	External Room Sensor	MRW-TA	MRW-TA	DVM, CAC
	Operation Mode Selection Switch	MCM-C200	MCM-C200	DVM

### NOTE

- In case you want more information about the accessories, please refer to the control and accessories TDB on [pvi.Samsung.com](http://pvi.Samsung.com) site.

# 11. Accessory

## Piping

Product	Image	Model	Remark
Y-Joint		MXJ-YA1509M	15.0 kW and below
		MXJ-YA2512M	Over 15.0 kW ~ 40.0 kW and below
		MXJ-YA2812M	Over 40.0 kW ~ 45.0 kW and below
		MXJ-YA2815M	Over 45.0 kW ~ 70.3 kW and below
		MXJ-YA3419M	Over 70.3 kW ~ 98.4 kW and below
		MXJ-YA4119M	Over 98.4 kW ~ 135.2 kW and below
		MXJ-YA4422M	Over 135.2 kW
Y-Joint (Only H/R)		MXJ-YA1500M	22.4 kW and below
		MXJ-YA2500M	Over 22.4 kW ~ 70.3 kW and below
		MXJ-YA3100M	Over 70.3 kW ~ 135.2 kW and below
		MXJ-YA3800M	Over 135.2 kW
Y-Joint Outdoor Unit		MXJ-TA3419M	135.2 kW and below
		MXJ-TA4122M	140.2 kW and Over
Y-Joint (Only H/R) Outdoor Unit		MXJ-TA3100M	135.2 kW and below
		MXJ-TA3800M	140.2 kW and Over
Distribution Header		MXJ-HA2512M	45.0 kW and below (for 4 rooms)
		MXJ-HA3115M	70.3 kW and below (for 8 rooms)
		MXJ-HA3819M	Over 70.3 kW ~ 135.2 kW and below (for 8 rooms)
MCU		MCU-S6NEK2N	6 ports, max 61.6kW (~16kW/1port)
		MCU-S4NEK3N	4 ports, max 61.6kW (~16kW/1port)
		MCU-S2NEK2N	2 ports, max 32.0kW (~16kW/1port)
		MCU-S1NEK1N	1 port, max 16.0kW (~16kW/1port)
EEV KIT		MEV-E24SA	1 Indoor
		MEV-E32SA	
		MXD-E24K132A	2 Indoor
		MXD-E24K200A	
		MXD-E32K200A	
		MXD-E24K232A	3 Indoor
		MXD-E24K300A	
MXD-E32K224A			
MXD-E32K300A			
PDM KIT		MXD-A38K2A	8~12 HP
		MXD-A12K2A	14~16 HP
		MXD-A58K2A	18~26 HP


### NOTE

- In case you want more information about the accessories, please refer to the control and accessories TDB on [pvi.Samsung.com](http://pvi.Samsung.com) site.



# 11. Accessory

## Indoor unit

Product	Image	Model	Remark
Panel		PC1NUSMAN	1Way CST (JSF-1)
		PC1NUPMAN	1Way CST (JSF-1) (Z-sliding)
		PC1MWSKAN	1Way CST (JSF-0)
		PC1NWSMAN	1Way CST (JSF-1)
		PC1BWSMAN	1Way CST (JSF-2)
		PC2NUSMEN	2Way Cassette
		PC4SUSMAN	4Way Cassette S (600x600) (Waffle)
		PC4SUSMEN	4Way Cassette S (600x600) (Classic)
		PC4NUSKAN	4way Cassette S (Waffle)
		PC4NUSKEN	4way Cassette S (Classic)
		PC4NBSKAN	4way Cassette S (Waffle, Black)
		PC4NUDMAN	360 CST Square (White)
		PC4NUNMAN	360 CST Circular (White)
		PC4NBDMAN	360 CST Square (Black)
	PC4NBNMAN	360 CST Circular (Black)	
S-Plasma Ion KIT		MSD-CAN1	[Option] 1Way, 4Way, 4Way (600x600), 360, Big Ceiling [Include] Console
		MSD-EAN1	[Option] Duct S, Big Duct, ERV, ERV Plus
Motion detect Sensor		MCR-SMA	4Way Cassette S (600x600)
ERV CO2 Sensor		MOS-C1	ERV, ERV PLUS

# 11. Accessory

## Indoor unit

Product	Image	Model	Remark			
External room sensor		MRW-TA	Cassette, Wall-mount, Ceiling, Duct, Console			
Drain Pump		MDP-N047SNC0D	OAP Duct (14.0 kW)			
		MDP-N047SNC1D	HSP Duct (22.0 / 28.0 kW) OAP Duct (22.4 / 28.0 kW)			
		MDP-M075SGU1D	MSP-0 / 1 Duct (9.2 / 11.2 kW)			
		MDP-M075SGU2D	MSP-2 Duct (12.8 / 14.0 kW) HSP Duct (11.2 / 12.8 / 14.0 kW)			
		MDP-M075SGU3D	MSP-S Duct (5.6 / 7.1 kW)			
		MDP-E075SEE3D	Slim Duct (2.0~14.0 kW)			
		MDP-G075SP	Duct S (External, All Capacities) BIG Duct			
		MDP-G075SQ	Duct S (Internal, 3.5 kW~14 kW) BIG Duct			
AHU KIT		MXD-K025AN	7.0 kW~8.75 kW			
		MXD-K050AN	14.0 kW~17.5 kW			
		MXD-K075AN	21.0 kW~26.25 kW			
		MXD-K100AN	28.0 kW~35.0 kW			
		MCM-D201N	28kW~35kW	56kW~70kW	84kW~105kW	112kW~140kW
		MDX-A64K100E X 1 EA	MDX-A64K100E X 2 EA	MDX-A64K100E X 3 EA	MDX-A64K100E X 4 EA	

### NOTE

- In case you want more information about the accessories, please refer to the control and accessories TDB on [pvi.Samsung.com](http://pvi.Samsung.com) site.

# 11. Accessory

## Indoor unit's Accessory Compatibility

Product	Model	Remark	1way			2way	4way	360	Mini 4way	Slim duct	MSP Duct					Duct-5	Big Duct	HSP Duct	OAP Duct		RAC	Ceiling	B-Ceiling	Console	PAC	Floor Standing	ERV Plus	AHU		
			JSF-0	JSF-1	JSF-2						MSP-5	MSP-0	MSP-1	MSP-2	5HP				8,10HP											
Panel	PC4NUDMAN	Ceiling																												
	PC4NBDMAN	Ceiling (Black)																												
	PC4NUNMAN	Open																												
	PC4NBNMAN	Open (Black)																												
	PC4NUSKAN	Waffle																												
	PC4NBSKAN	Waffle (Black)																												
	PC4NUSKEN	Classic																												
	PC4SUSMAN	Waffle																												
	PC4SUSMEN	Classic																												
	PC1NUSMAN	Stripe																												
	PC1NUPMAN	Z-Slide																												
	PC1MWSKAN	Fluid																												
	PC1NWSMAN																													
	PC1BWSMAN																													
PC2NUSMEN	Stripe																													
DRAIN PUMP	MDP-N047SNC0D	-																												
	MDP-N047SNC1D	-																												
	MDP-M075SGU1D	-																												
	MDP-M075SGU2D	-																												
	MDP-M075SGU3D	-																												
	MDP-E075SEE3D	-																												
	MDP-G075SP	External, All Capacities																												
	MDP-G075SQ	Internal																												
S-Plasma Ion KIT	MSD-CAN1	-																												
	MSD-EAN1	-																												
Motion detect Sensor	MCR-SMA	-																												
ERV CO2 Sensor	MOS-C1	-																												
EEV KITS	MEV-EXXSA	1 Indoor																												
	MXD-EXXKXXXA	2,3 Indoor																												
MCU-KIT	MCU-S6NEK2N	6 ports, max 61.6kW																												
	MCU-S4NEK3N	4 ports, max 61.6kW																												
	MCU-S2NEK2N	2 ports, max 32.0kW																												
	MCU-S1NEK1N	1 port, max 16.0kW																												
AHU-KIT	MXD-K025AN	only for 2.5Hp's AHU																												
	MXD-K050AN	only for 5Hp's AHU																												
	MXD-K075AN	only for 7.5Hp's AHU																												
	MXD-K100AN	only for 10Hp's AHU																												
	MCM-D201N	only for 10~40Hp's AHU																												

### NOTE

- In case you want to know more information the accessories, please refer to the control and accessories TDB on pvi.samsung.com site

2022.09  
Ver.1.1

**Samsung Electronics Co., LTD.**  
**B2B PM / SE**

Head Office (Suwon Korea) 129, Samsung-Ro, Yeongtong-Gu, Suwon City, Gyeonggi-Do, Korea 16677  
Website : [www.samsung.com](http://www.samsung.com), <http://btsp.samsungsbn.com> Email : [airconditioner@samsung.com](mailto:airconditioner@samsung.com)  
Images and data in this book may subject to change without prior notice.