

SINGLE

Technical Data Book

Big Duct for Europe (R410A, 50Hz, H/P)



Model : AC180JNHPKH/EU

AC180JXAPNH/EU

AC200JNHPKH/EU

AC200JXAPNH/EU

History

Version	Modification	Date	Remark
Ver.1.0	Release SINGLE Big Duct for Europe (R410A, 50Hz, H/P) TDB	'14. 11.	
Ver.1.1	Delete Energy Grade	'15. 03. 09.	
Ver.1.2	Modified the cycle diagram (20kW model)	'15. 04. 06.	
Ver.1.3	Add Note information in Specification regarding EU F-Gas regulation.	'15. 06. 16.	
Ver.1.4	Modification for Specification (MCA, MFA)	'16. 02. 17.	
Ver.1.5	Modification for Sound Power Level data and graphs (p.6, p.11) . AC180JNHPKH/EU (ODU: AC180JXAPNH/EU) : 79 → 69 dB(A) . AC200JNHPKH/EU (ODU: AC200JXAPNH/EU) : 80 → 70 dB(A)	'16. 07. 15.	

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1 Nomenclature

Indoor Units

Model Names

AC	180	J	N	H	P	K	H	/	EU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AC	SINGLE
AM	VRF

(2) Capacity

x 1/10 kW (3 digits)

(3) Version

F	2013
H	2014
J	2015

(4) Product Type

N	Indoor Unit
X	Outdoor Unit

(5) Product Notation

1	1Way Cassette
2	2Way Cassette
N	4Way Cassette S (600 x 600)
4	4Way Cassette S
L	LSP Duct (Slim Duct)
M	MSP Duct
H	HSP Duct
C	Ceiling
T	Neo Forte
E	OAP Duct

(6) Feature

D	DELUXE
F	FLAGSHIP
P	Premium
G(EHS)	Cascade (EEV)

(7) Rating Voltage

C	1Ø, 208~230V, 60Hz
E	1Ø, 220~240V, 50Hz
G	3Ø, 380~415V, 50Hz
K	1Ø, 220~240V, 50/60Hz
N	3Ø, 380~415V, 50/60Hz

(8) Mode

C	Cooling Only(R410A)
H	Heat Pump(R410A)
D	Cooling Only(R22)
E	Heat Pump(R22)

1 Nomenclature

Outdoor Units

Model Names

AC	180	J	X	A	P	N	H	/	EU
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AC	SINGLE
AM	VRF

(2) Capacity

x 1/10 kW (3 digits)

(3) Version

E	2012
F	2013
H	2014
J	2015

(4) Product Type

N	Indoor Unit
X	Outdoor Unit

(5) Feature1

A	Inv+Side+General Temp
B	Non Inv+Side+General Temp

(6) Feature2

D	Deluxe
F	Flagship
P	Premium
S	Standard

(7) Rating Voltage

E	1Ø, 220~240V, 50Hz
G	3Ø, 380~415V, 50Hz
K	1Ø, 220~240V, 50/60Hz
N	3Ø, 380~415V, 50/60Hz

(8) Mode

C	Cooling Only(R410A)
H	Heat Pump(R410A)
D	Cooling Only(R22)
E	Heat Pump(R22)

2 Specifications

HSP Duct

Type				HSP Duct		HSP Duct		
Model Name		Indoor Unit		AC180JNHPKH/EU		AC200JNHPKH/EU		
		Outdoor Unit		AC180JXAPNH/EU		AC200JXAPNH/EU		
System	Mode			Heat Pump		Heat Pump		
	Capacity	Cooling(Min/Std/Max)		kW	6.00 / 18.00 / 20.00		6.20 / 20.00 / 22.50	
				Btu/h	20,500 / 61,400 / 68,200		21,200 / 68,200 / 76,800	
		Heating(Min/Std/Max)		kW	4.80 / 20.00 / 22.50		5.00 / 22.00 / 25.00	
				Btu/h	16,400 / 68,200 / 76,800		17,100 / 75,100 / 85,300	
	Power	Power Input (Nominal)	Cooling(Min/Std/Max)	kW	1.30 / 5.45 / 7.30		1.40 / 6.23 / 11.00	
			Heating(Min/Std/Max)		1.20 / 5.54 / 7.60		2.30 / 6.09 / 11.50	
		Current Input (Nominal)	Cooling(Min/Std/Max)	A	2.30 / 8.40 / 16.10		2.70 / 10.80 / 17.00	
			Heating(Min/Std/Max)		2.20 / 8.60 / 16.10		4.10 / 10.00 / 16.10	
		MCA		A	18.60 (MCA)		25.00 (MCA)	
		MFA		A	20.46		31.25	
	Energy Efficiency	EER (Nominal Cooling)		-	3.30		3.21	
		COP (Nominal Heating)		-	3.61		3.61	
		Energy Grade		-	-		-	
				-	-		-	
	Piping Connections	Liquid Pipe		Ø, mm	9.52		9.52	
				Ø, inch	3/8"		3/8"	
		Gas Pipe		Ø, mm	19.05		19.05	
				Ø, inch	3/4"		3/4"	
		Installation Limitation	Max. Length	m	75		150	
			Max. Height	m	30		50 (40)*	
	Field Wiring	Power Source Wire		Ø, mm	-		-	
		Transmission Cable		Ø, mm	-		-	
	Refrigerant	Type		-	R410A		R410A	
		Control Method		-	-		-	
Factory Charging		kg	4.60		8.00			
Indoor Unit	Power Supply		Ø, #, V, Hz	1,2,220-240,50		1,2,220-240,50		
	Fan	Type		-	Sirocco Fan		Sirocco Fan	
		Motor	Output	W	500		500	
				CMM	71.00 / 60.00 / 50.00		72.00 / 61.00 / 51.00	
		Air Flow Rate	High/Mid/Low	l/s	1,183.33 / 1,000.00 / 833.33		1,200.00 / 1,016.67 / 850.00	
		External Static Pressure		Min/Std/Max	mmAq	5.00 / 6.12 / 20.00		5.00 / 7.34 / 20.00
	Pa			49.00 / 60.00 / 196.00		49.00 / 72.00 / 196.00		
	Drain	Drain Pipe		Ø,mm	VP25 (OD 32,ID 25)		VP25 (OD 32,ID 25)	
	Sound	Pressure	High/Mid/Low	dB(A)	43 / 39 / 35		44 / 40 / 36	
		Power	Cooling		69		70	
	External Dimension	Net Weight		kg	82.50		82.50	
		Shipping Weight		kg	92.00		92.00	
		Net Dimensions (WxHxD)		mm	1,350 x 450 x 910		1,350 x 450 x 910	
		Shipping Dimensions (WxHxD)		mm	1,612 x 519 x 984		1,612 x 519 x 984	
	Panel Size	Panel model		-	-		-	
		Panel Net Weight		kg	-		-	
		Shipping Weight		kg	-		-	
		Net Dimensions (WxHxD)		mm	-		-	
		Shipping Dimensions (WxHxD)		mm	-		-	
	Additional Accessories	Drain pump	External	-	MDP-G075SP		MDP-G075SP	
Internal			-	MDP-G075SQ		MDP-G075SQ		
Air Filter		-	-		-			
Outdoor Unit	Power Supply		Ø, #, V, Hz	3,4,380-415,50		3,4,380-415,50		
	Compressor	Type		-	Twin BLDC Rotary		BLDC Scroll	
		Model		-	UG5T520FUBJX		DS-GB052FAVA	
		Output		kW	-		-	
		Oil	Type	-	-		-	
	Fan			Air Flow Rate	Cooling	CMM	110.00	
	Sound	Pressure	Cooling/Heating	dB(A)	1,833.33		2,933.33	
			55 / 57		57 / 59			
		Power	Cooling	76	77			
	External Dimension	Net Weight		kg	107.50		190.00	
		Shipping Weight		kg	117.50		195.00	
		Net Dimensions (WxHxD)		mm	940 x 1,420 x 330		880 x 1,695 x 765	
		Shipping Dimensions (WxHxD)		mm	995 x 1,598 x 426		948 x 1,887 x 832	
	Operating Temp. Range	Cooling		°C	-15.0 ~ 50.0		-15.0 ~ 50.0	
		Heating		°C	-20.0 ~ 24.0		-20.0 ~ 24.0	

- All figures comply with EN14511

- Nominal cooling capacities are based on;

Indoor temperature : 27°C DB, 19°C WB / Outdoor temperature : 35°C DB, Refrigerant piping : 5m(18kW) / 7.5m(20kW) , Level differences : 0m

- Nominal heating capacities are based on;

Indoor temperature : 20°C DB, 15°C WB / Outdoor temperature : 7°C DB, 6°C WB, Refrigerant piping : 5m(18kW) / 7.5m(20kW), Level differences : 0m

- Sound level was acquired in an anechoic room. Thus actual noise level may be different depending on the installation conditions.

- Specifications may be subject to change without prior notice.

- These products contain R410A which is fluorinated greenhouse gas.

- If indoor unit is located in a higher position than outdoor unit, please refer to the ()* value of Installation Height Limitation.

3 Capacity table

HSP Duct

AC180JNHPKH/EU + AC180JXAPNH/EU

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor temperature (°C, DB)	Indoor temperature (°C, WB)																	
	14.0			16.0			18.0			19.0			22.0			24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15.0	19.91	15.93	4.15	20.40	16.32	4.26	20.91	16.72	4.36	21.42	17.14	4.47	21.93	17.55	4.58	22.46	17.97	4.69
21.0	20.75	16.60	4.31	21.26	17.01	4.41	21.78	17.43	4.52	22.32	17.86	4.63	22.86	18.28	4.74	23.40	18.72	4.86
35.0	16.73	13.39	5.07	17.15	13.72	5.19	17.57	14.05	5.32	18.00	14.40	5.45	18.43	14.75	5.58	18.87	15.10	5.71
46.0	13.22	10.58	5.83	13.55	10.84	5.97	13.88	11.10	6.12	14.22	11.38	6.27	14.56	11.65	6.42	14.91	11.93	6.57
52.0	10.86	8.69	5.32	11.13	8.90	5.45	11.40	9.12	5.59	11.68	9.35	5.72	11.96	9.57	7.10	12.25	9.80	7.27

Heating

TC : Total Capacity, PI: Power Input

Outdoor temperature (°C, DB)	Indoor temperature (°C, DB)											
	16.0		18.0		20.0		21.0		22.0		24.0	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-20.0	14.08	7.06	13.94	6.99	13.80	6.93	13.66	6.86	13.53	6.79	13.39	6.72
-10.0	19.18	8.19	18.99	8.11	18.80	8.03	18.61	7.95	18.43	7.87	18.24	7.79
7.0	20.40	5.65	20.20	5.60	20.00	5.54	19.80	5.48	19.60	5.43	19.41	5.38
24.0	27.34	6.50	27.07	6.43	26.80	6.37	26.53	6.31	26.27	6.24	26.00	6.18

AC200JNHPKH/EU + AC200JXAPNH/EU

Cooling

TC(Total Capacity), SHC(Sensible Heat Capacity), PI(Power Input)

Outdoor temperature (°C, DB)	Indoor temperature (°C, WB)																	
	14.0			16.0			18.0			19.0			22.0			24.0		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-15.0	22.13	17.70	4.75	22.67	18.14	4.87	23.23	18.58	4.99	23.80	19.04	5.11	24.37	19.50	5.23	24.96	19.96	5.36
21.0	23.06	18.45	4.92	23.62	18.90	5.04	24.20	19.36	5.17	24.80	19.84	5.30	25.40	20.32	5.42	26.00	20.80	5.55
35.0	18.59	14.88	5.79	19.05	15.24	5.93	19.52	15.62	6.08	20.00	16.00	6.23	20.48	16.38	6.38	20.97	16.78	6.53
46.0	14.69	11.75	6.66	15.05	12.04	6.82	15.42	12.34	6.99	15.80	12.64	7.16	16.18	12.94	7.34	16.57	13.25	7.51
52.0	12.07	9.65	6.08	12.36	9.89	6.23	12.67	10.13	6.38	12.98	10.38	6.54	13.29	10.63	8.11	13.61	10.89	8.31

Heating

TC : Total Capacity PI: Power Input

Outdoor temperature (°C, DB)	Indoor temperature (°C, DB)											
	16.0		18.0		20.0		21.0		22.0		24.0	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
-20.0	15.49	7.77	15.33	7.69	15.18	7.61	15.03	7.54	14.88	7.46	14.73	7.39
-10.0	21.10	9.01	20.89	8.92	20.68	8.83	20.47	8.74	20.27	8.65	20.07	8.57
7.0	22.44	6.21	22.22	6.15	22.00	6.09	21.78	6.03	21.56	5.97	21.35	5.91
24.0	30.07	7.14	29.77	7.07	29.48	7.00	29.19	6.93	28.89	6.86	28.60	6.80

- Capacities are based on following conditions;

- . Cooling mode indoor air temperature (°C, DB/WB) : 22/16, 27/19, 30/22
- . Heating mode outdoor air : 85%RH. However, the condition rated capacity is 7°C DB / 6°C WB.
- . Refrigerant piping length : 5m(18kW) / 7.5m(20kW)
- . Level difference : 0m.

4 Dimensional drawing

HSP Duct

AC180JNHPKH/EU, AC200JNHPKH/EU

Units : mm / inches

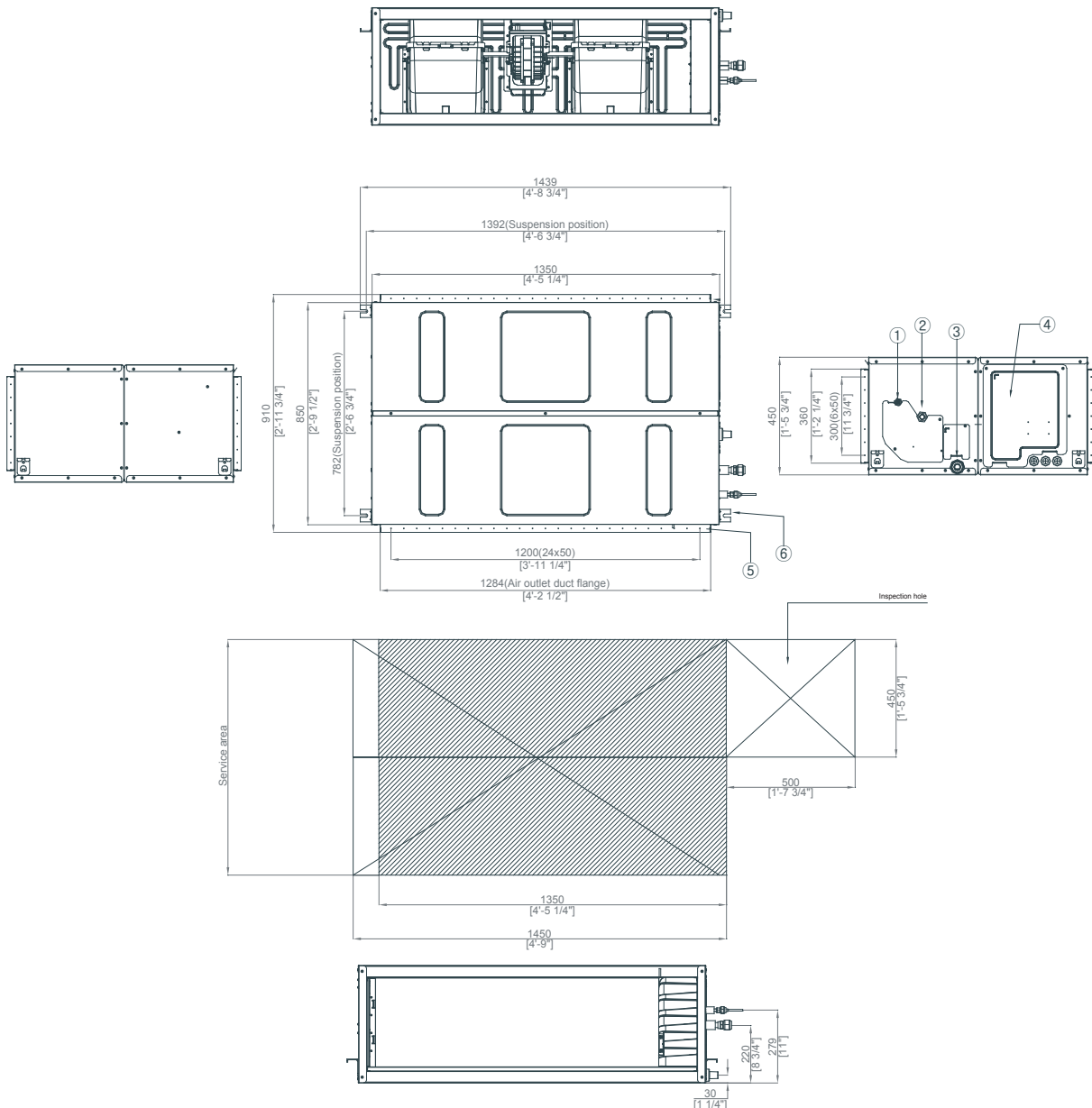


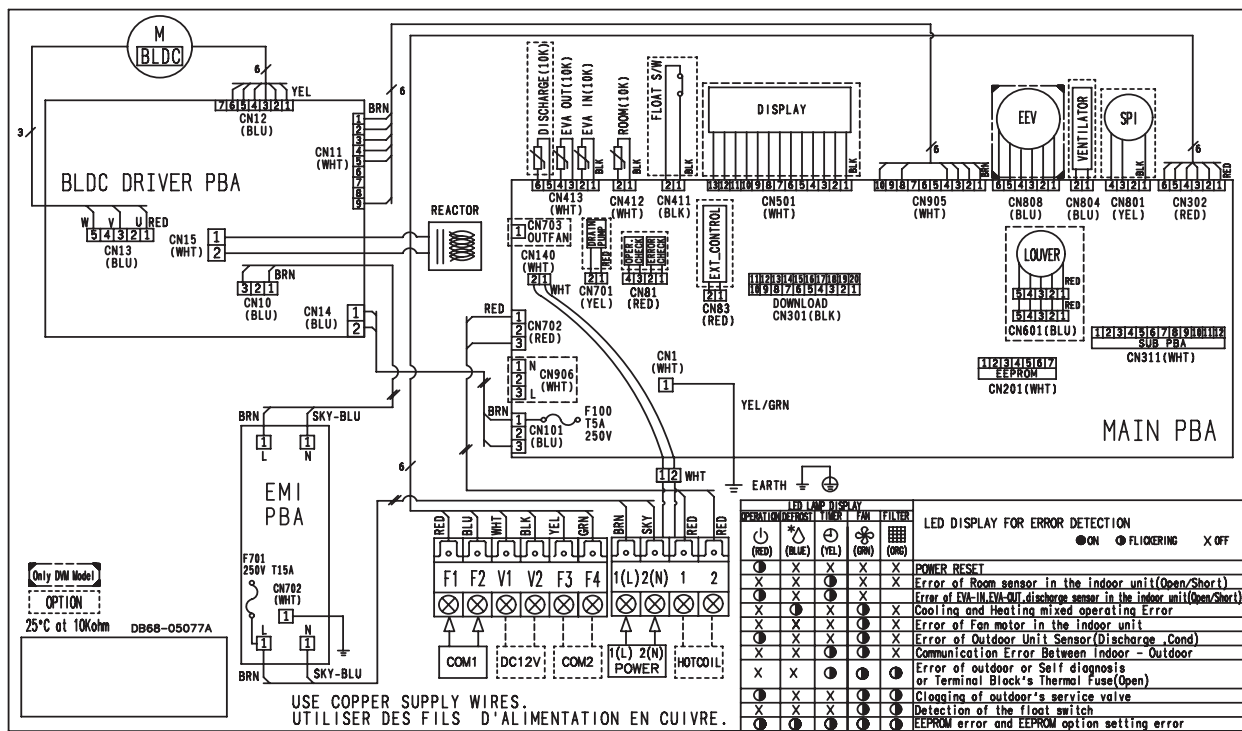
Table of descriptions

1	Liquid pipe connection	7	
2	Gas pipe connection	8	
3	Drain pipe connection	9	
4	Power supply connection	10	
5	Air discharge flange	11	
6	Hook	12	

5) Electrical wiring diagram

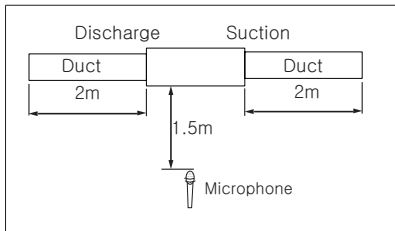
HSP Duct

AC180JNHPKH/EU, AC200JNHPKH/EU



6 Sound pressure level

HSP Duct



Unit: dB(A)

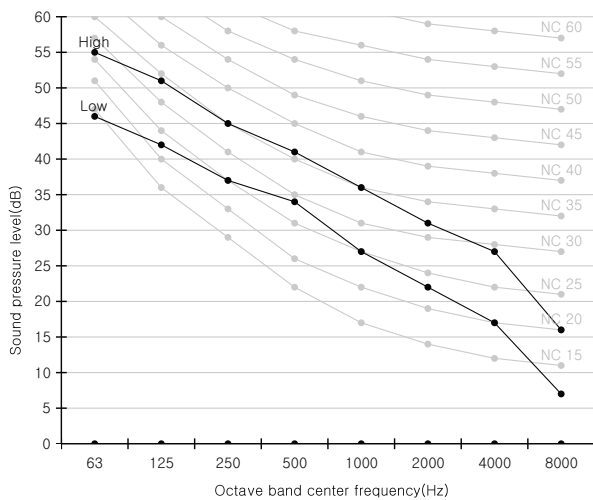
Model	High	Low
AC180JNHPKH/EU (ODU : AC180JXAPNH/EU)	43	35
AC200JNHPKH/EU (ODU : AC200JXAPNH/EU)	44	36

Note

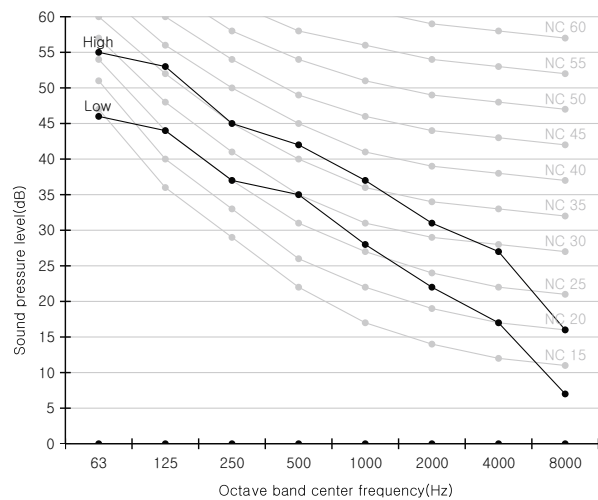
- These operation values were obtained in an anechoic room.
- Sound pressure level will vary depending on a range of the factors such as the construction of the particular room where the equipment is installed.

NC curve

1) AC180JNHPKH/EU (ODU : AC180JXAPNH/EU)



2) AC200JNHPKH/EU (ODU : AC200JXAPNH/EU)



7 Sound Power Level

HSP Duct

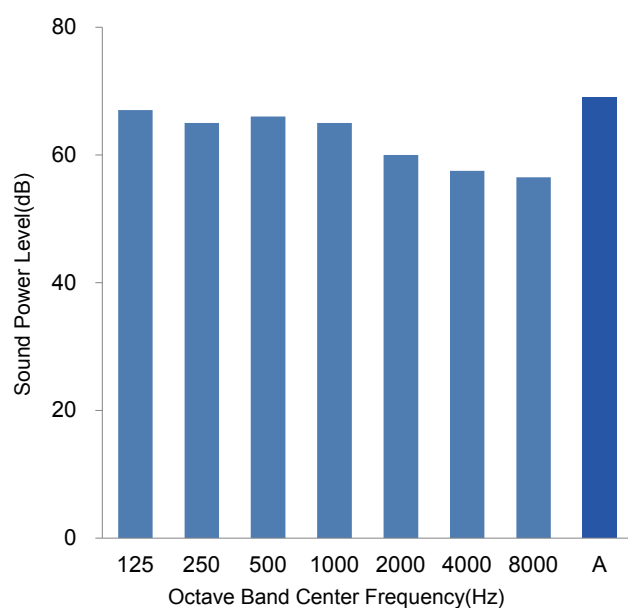
Note

dBA = A-weighted sound power level.
Reference power : 1pW.
Measured according to ISO 3741.

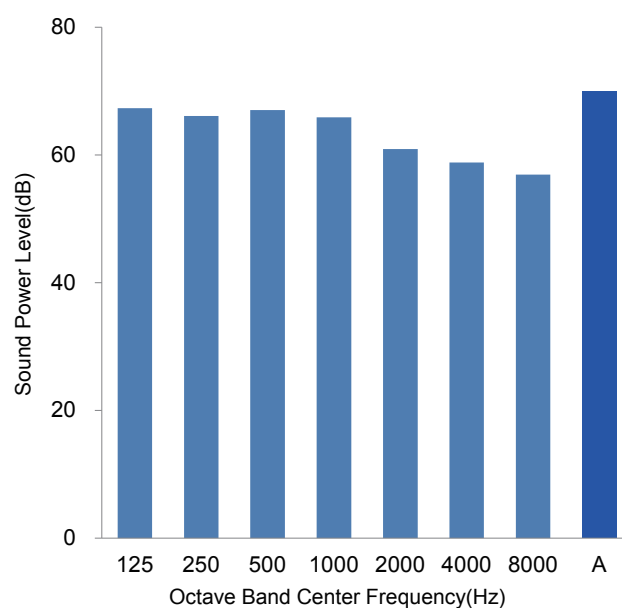
Unit: dB(A)

Model	Power
AC180JNHPKH/EU (ODU : AC180JXAPNH/EU)	69
AC200JNHPKH/EU (ODU : AC200JXAPNH/EU)	70

1) AC180JNHPKH/EU (ODU : AC180JXAPNH/EU)



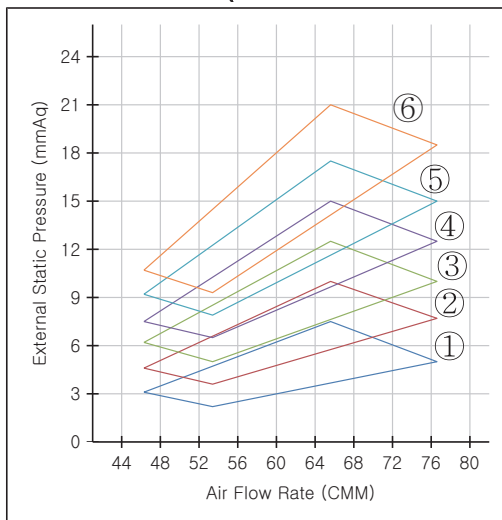
2) AC200JNHPKH/EU (ODU : AC200JXAPNH/EU)



8 Recommended operation range

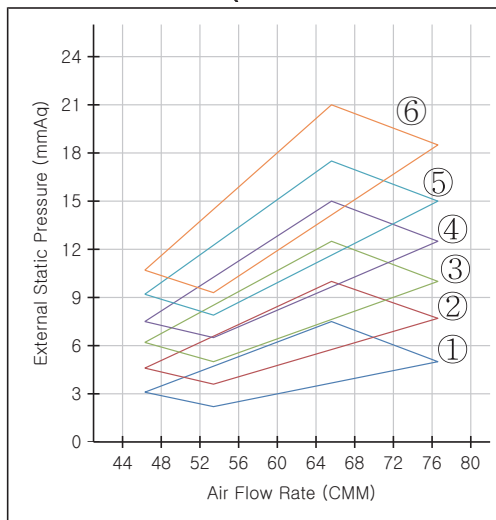
HSP Duct

1) AC180JNHPKH/EU (ODU : AC180JXAPNH/EU)



External Static Pressure (mmAq)	Option Code
① 5-7.5	01107C-1C50B0-27B414-370060
② 7.5-10	01107C-1C50E3-27B414-370060
③ 10-12.5	01107C-1C50F5-27B414-370060
④ 12.5-15	01107C-1C5436-27B414-370060
⑤ 15-17.5	01107C-1C5458-27B414-370060
⑥ 17.5-20	01107C-1C548E-27B414-370060

2) AC200JNHPKH/EU (ODU : AC200JXAPNH/EU)



External Static Pressure (mmAq)	Option Code
① 5-7.5	012474-1C50C0-20C8DC-320000
② 7.5-10	012474-1C50E3-20C8DC-320000
③ 10-12.5	012474-1C50F5-20C8DC-320000
④ 12.5-15	012474-1C5436-20C8DC-320000
⑤ 15-17.5	012474-1C5458-20C8DC-320000
⑥ 17.5-20	012474-1C548E-20C8DC-320000

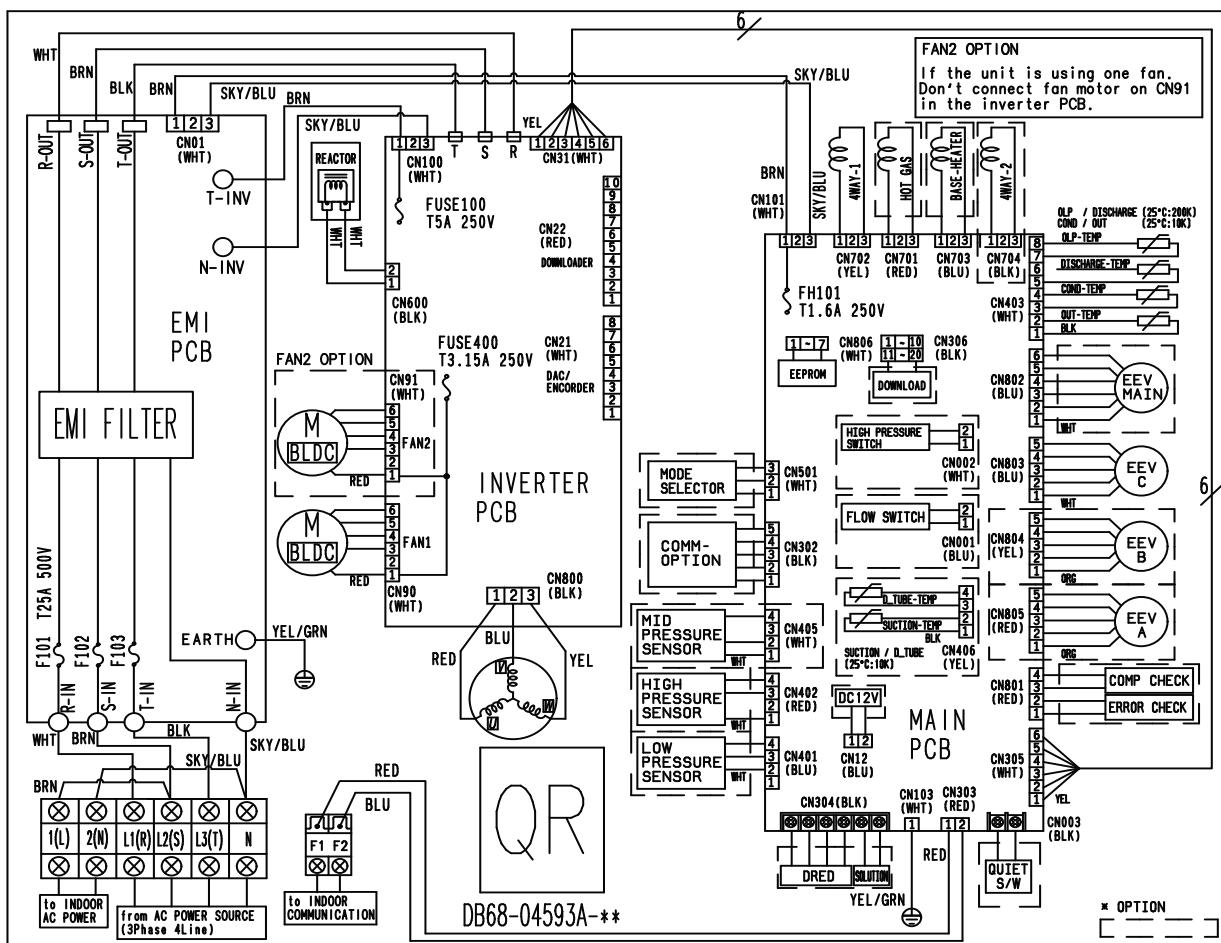
Note

- Adjust option code according to the actual installation condition (external static pressure).
- The graphs display the available external static pressure range of installed indoor units. Therefore, they do not reflect the actual change of external static pressure and airflow rate according to adjusted airflow (High-Mid-Low) of installed indoor units.

9 Electrical wiring diagram

Outdoor

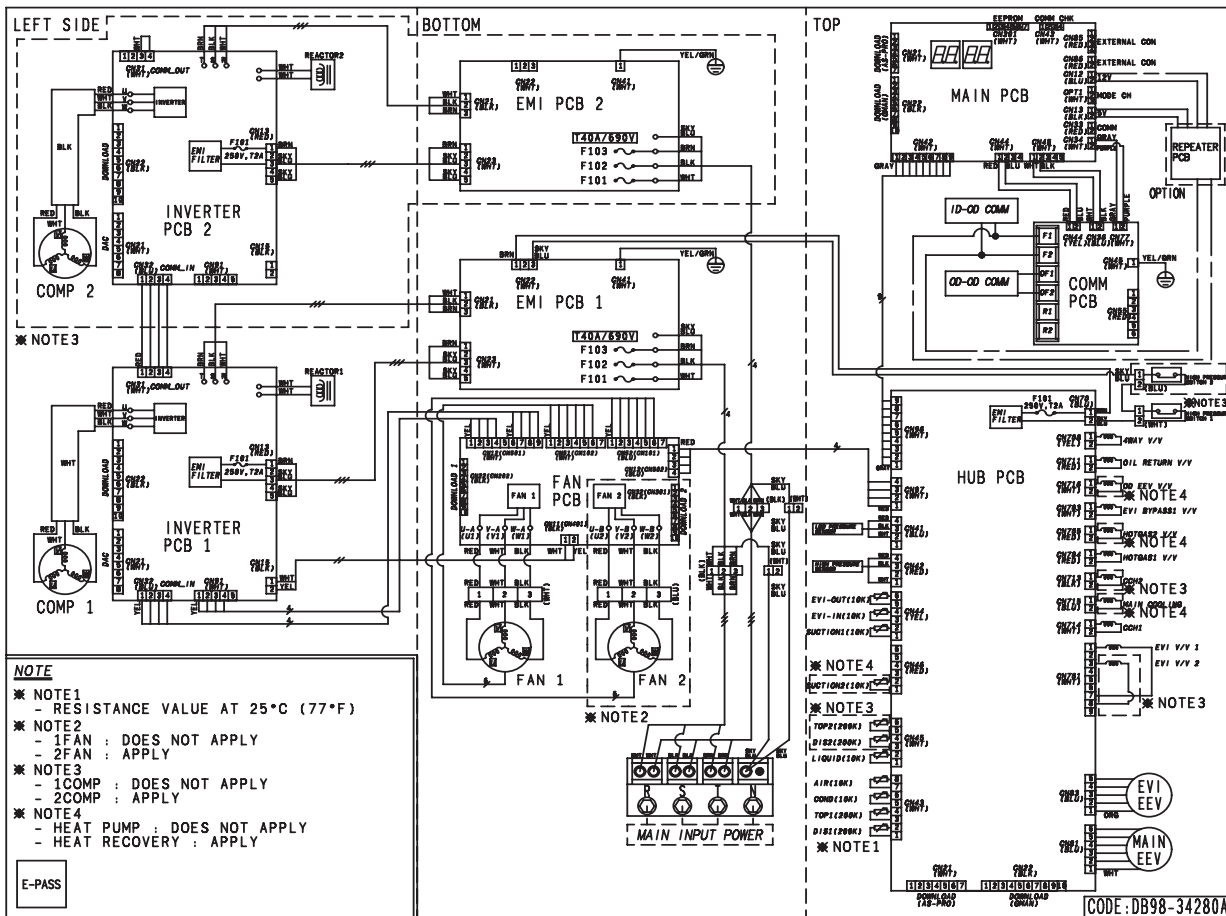
AC180JXAPHN/EU



9 Electrical wiring diagram

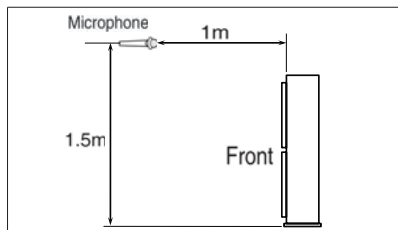
Outdoor

AC200JXAPNH/EU



10 Sound pressure level

Outdoor



Unit: dB(A)

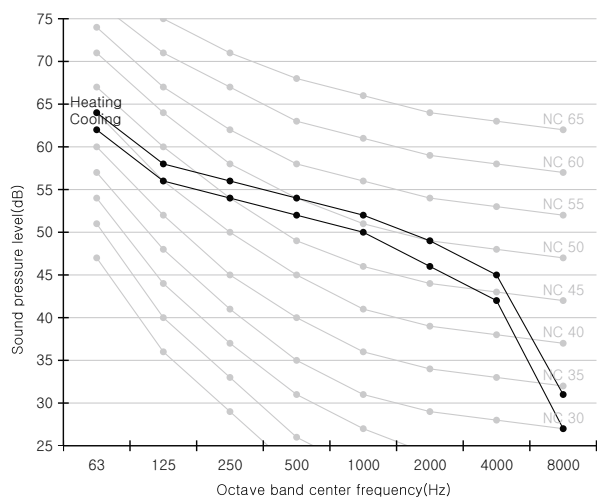
Model	Cooling	Heating
AC180JXAPNH/EU (IDU : AC180JNHPKH/EU)	55.0	57.0

Note

- These operation values were obtained in an anechoic room.(conversion value)
- Operation sound level may differ depending on operation and ambient conditions.

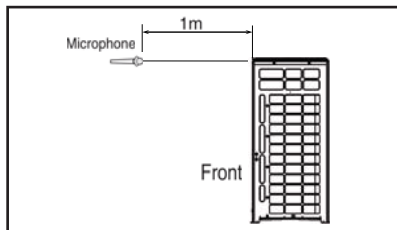
NC curve

1) AC180JXAPNH/EU (IDU : AC180JNHPKH/EU)



10 Sound pressure level

Outdoor



Unit: dB(A)

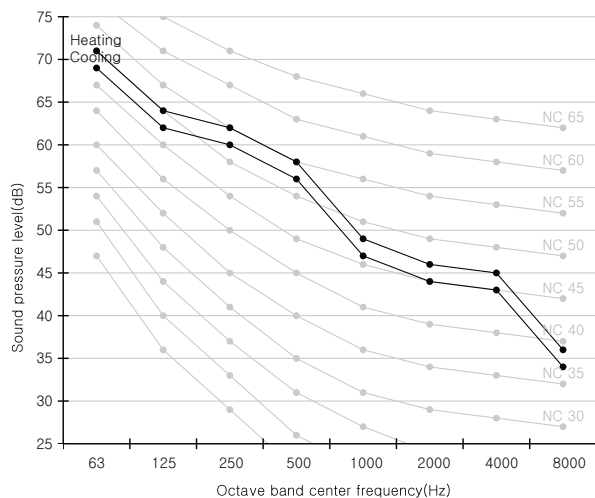
Model	Cooling	Heating
AC200JXAPNH/EU (IDU : AC200JNHPKH/EU)	57.0	59.0

Note

- These operation values were obtained in an anechoic room.(conversion value)
- Operation sound level may differ depending on operation and ambient conditions.

NC curve

2) AC200JXAPNH/EU (IDU : AC200JNHPKH/EU)



11 Sound power level

Outdoor

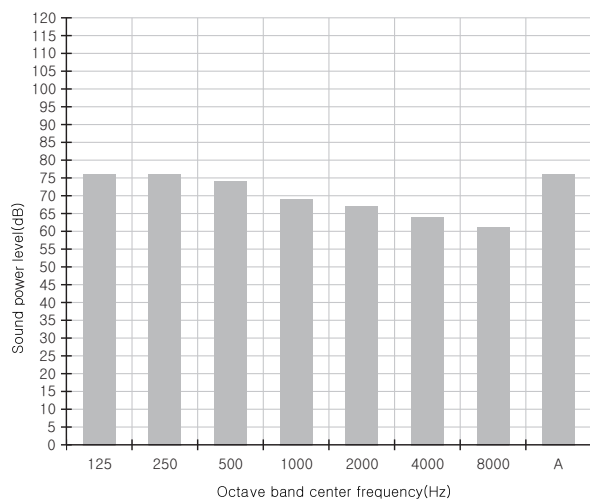
Note

dBA = A-weighted sound power level.
Reference power : 1pW.
Measured according to ISO 3741.

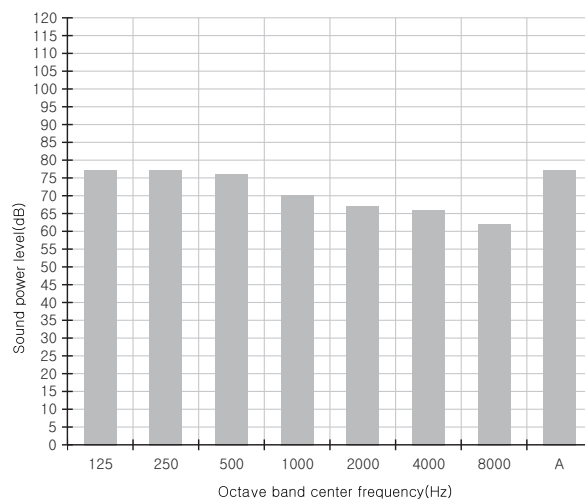
Unit: dB(A)

Model	Power
AC180JXAPNH/EU (IDU : AC180JNHPKH/EU)	76.0
AC200JXAPNH/EU (IDU : AC200JNHPKH/EU)	77.0

1) AC180JXAPNH/EU (IDU : AC180JNHPKH/EU)

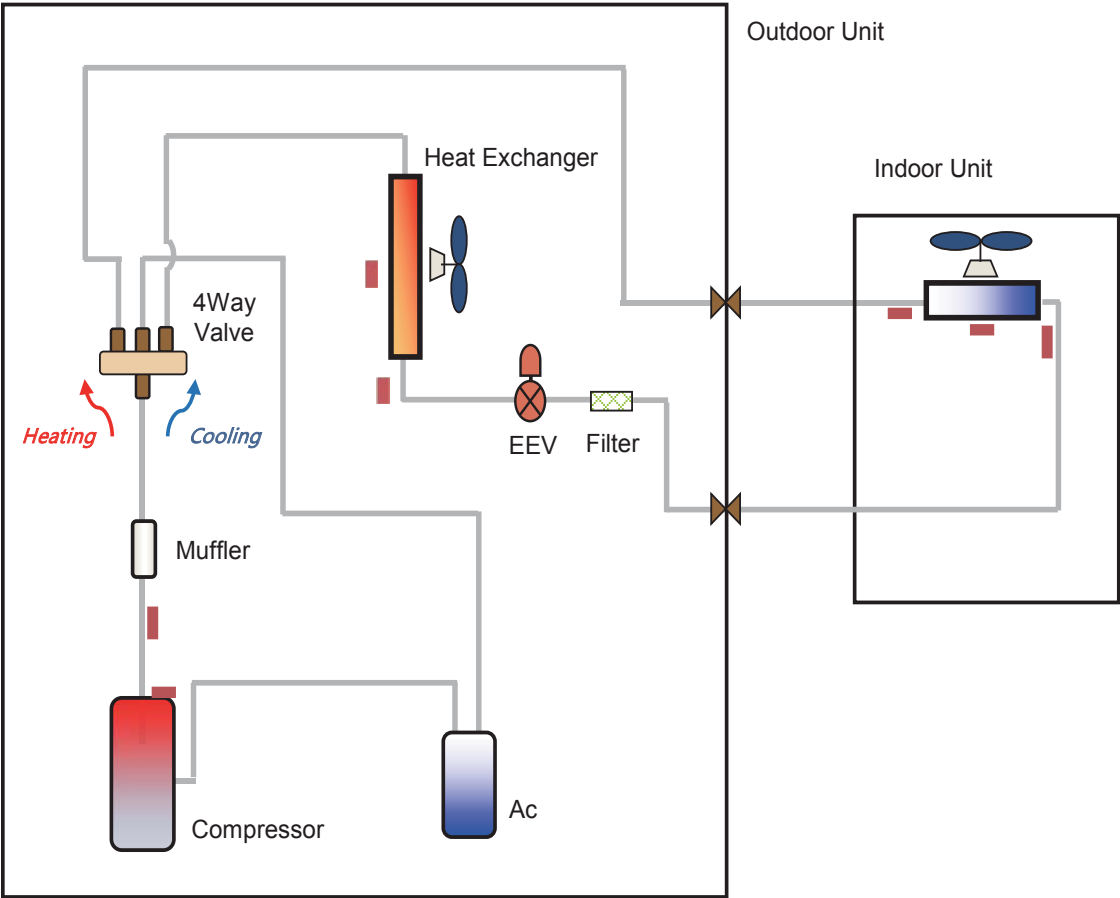


2) AC200JXAPNH/EU (IDU : AC200JNHPKH/EU)



12 Cycle diagram

Outdoor
AC180JXAPNH/EU

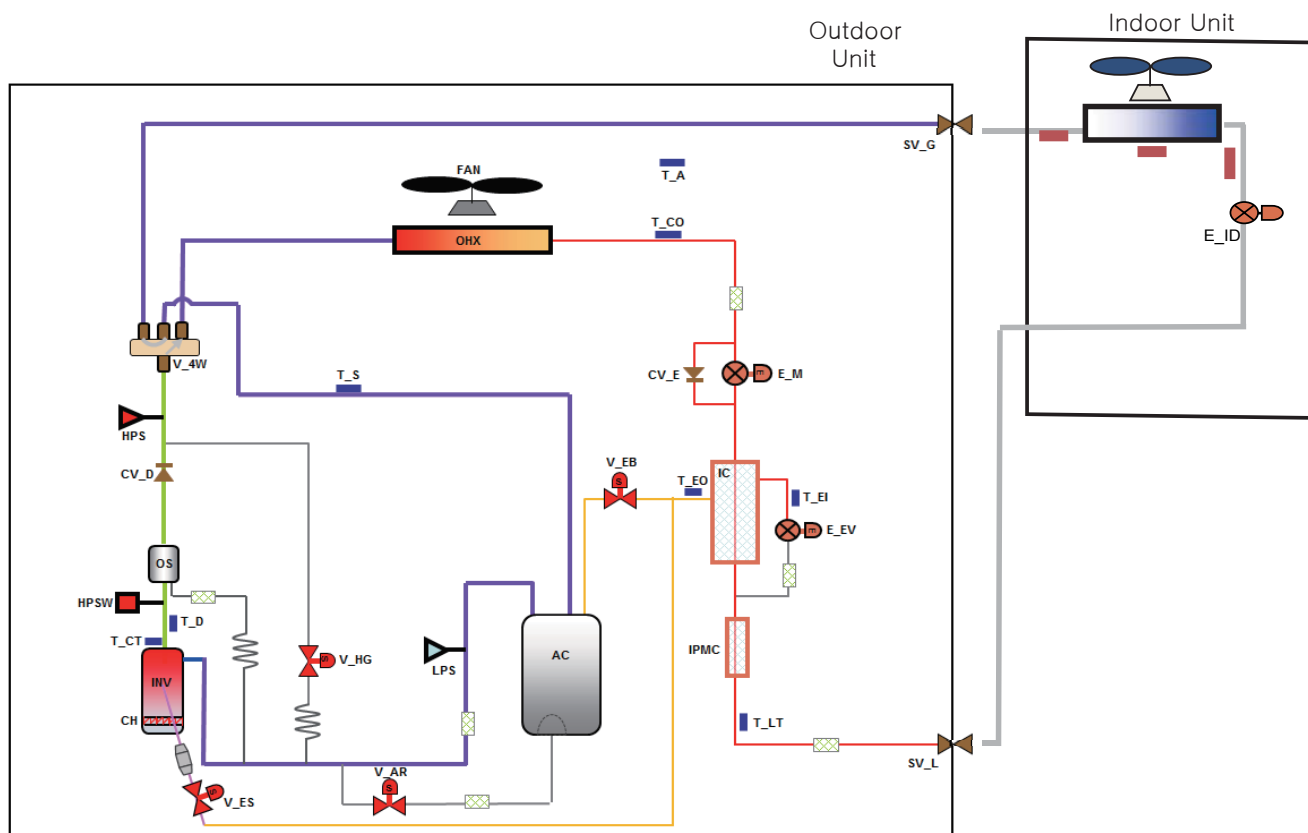


Category		Description
Compressor		Rotary Inverter Compressor
Heat Exchanger		Condensing/Evaporating unit(FMC)
AC		Accumulator
Filter		Filter
Valve	Expansion	Electronic Expansion Valve(EEV)
	Reversing	4 Way valve (Reversing valve)
	Service	Service valve
Sensor	Temperature	Pipe/Air Temperature sensor

12 Cycle diagram

Outdoor

AC200JXAPNH/EU



Category	Description
INV	Inverter Compressor
FAN	Outdoor Fan Motor
OHX	Outdoor Heat Exchanger
AC	Accumulator
OS	Oil Separator
IC	Intercooler
IPMC	IPM Cooler
CH	Crank Case Heater
HPS	High Pressure Sensor
LPS	Low Pressure Sensor
HPSW	High Pressure Switch
E_M	Main EEV
E_EV	EVI EEV
V_ES	EVI Sol. Valve
V_EB	EVI Bypass Valve
E_ID	Indoor EEV

Category	Description
V_HG	Hot Gas Bypass Valve
V_4W	4Way Valve
V_AR	Accumulator Oil Return Valve
CV_E	EEV Bypass Check Valve
CV_D	Discharge Check Valve
T_D	Discharge Temp. Sensor
T_S	Suction Temp. Sensor
T_CO	Cond Out Temp. Sensor
T_EI	EVI In Temp. Sensor
T_EO	EVI Out Temp. Sensor
T_LT	Liquid Tube Temp. Sensor
T_CT	Comp. Top Temp. Sensor
T_A	Ambient Temp. Sensor
SV_G	Gas Pipe Service Valve
SV_L	Liquid Pipe Service Valve

13 Dimensional drawing

Outdoor

AC180JXAPH/EU

Units : mm / inches

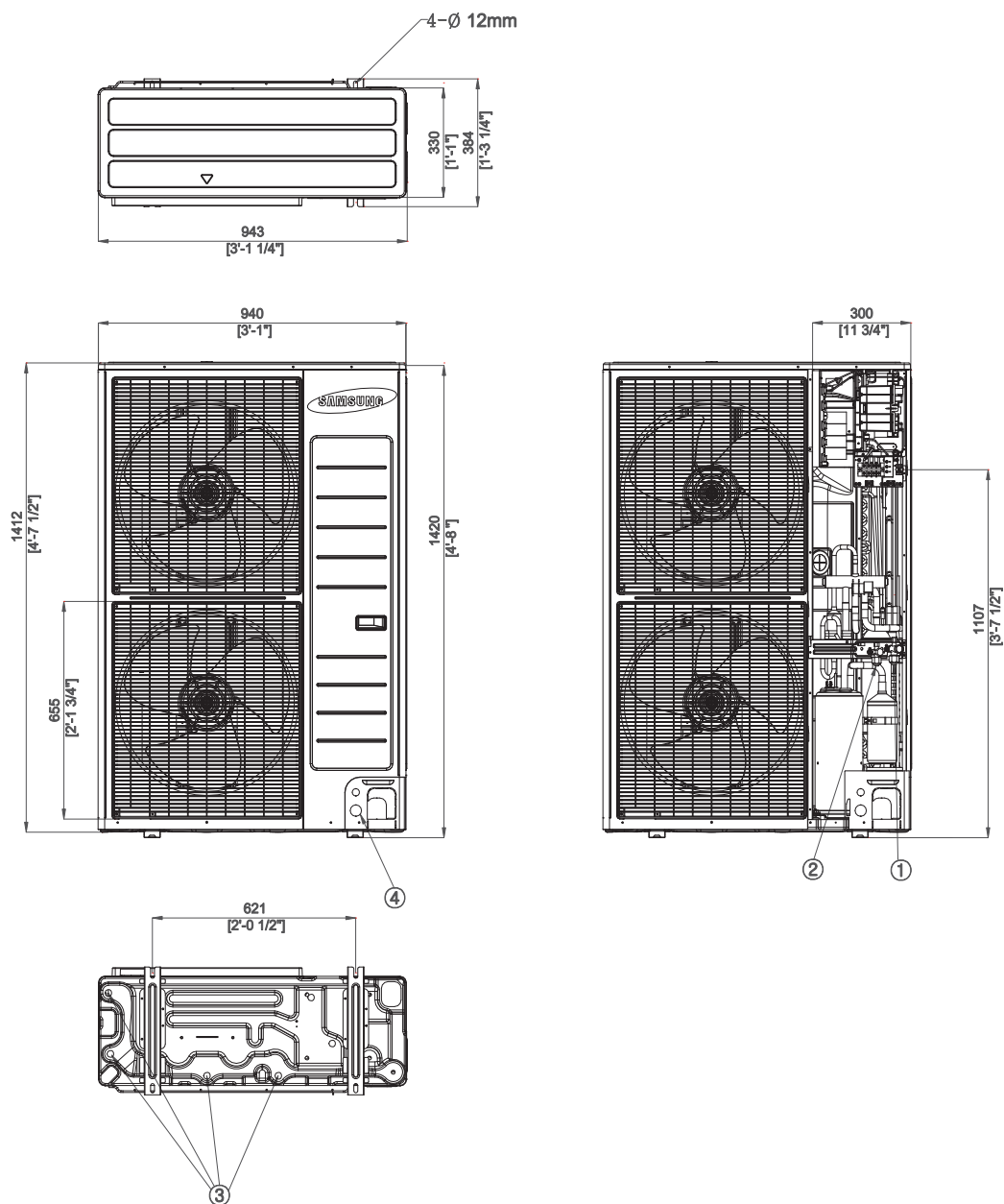


Table of descriptions

1	Refrigerant gas pipe	7	
2	Refrigerant liquid pipe	8	
3	Drain Hole	9	
4	Power & Comm. wiring conduits	10	
5		11	
6		12	

13 Dimensional drawing

Outdoor

AC200JXAPHN/EU

Units : mm / inches

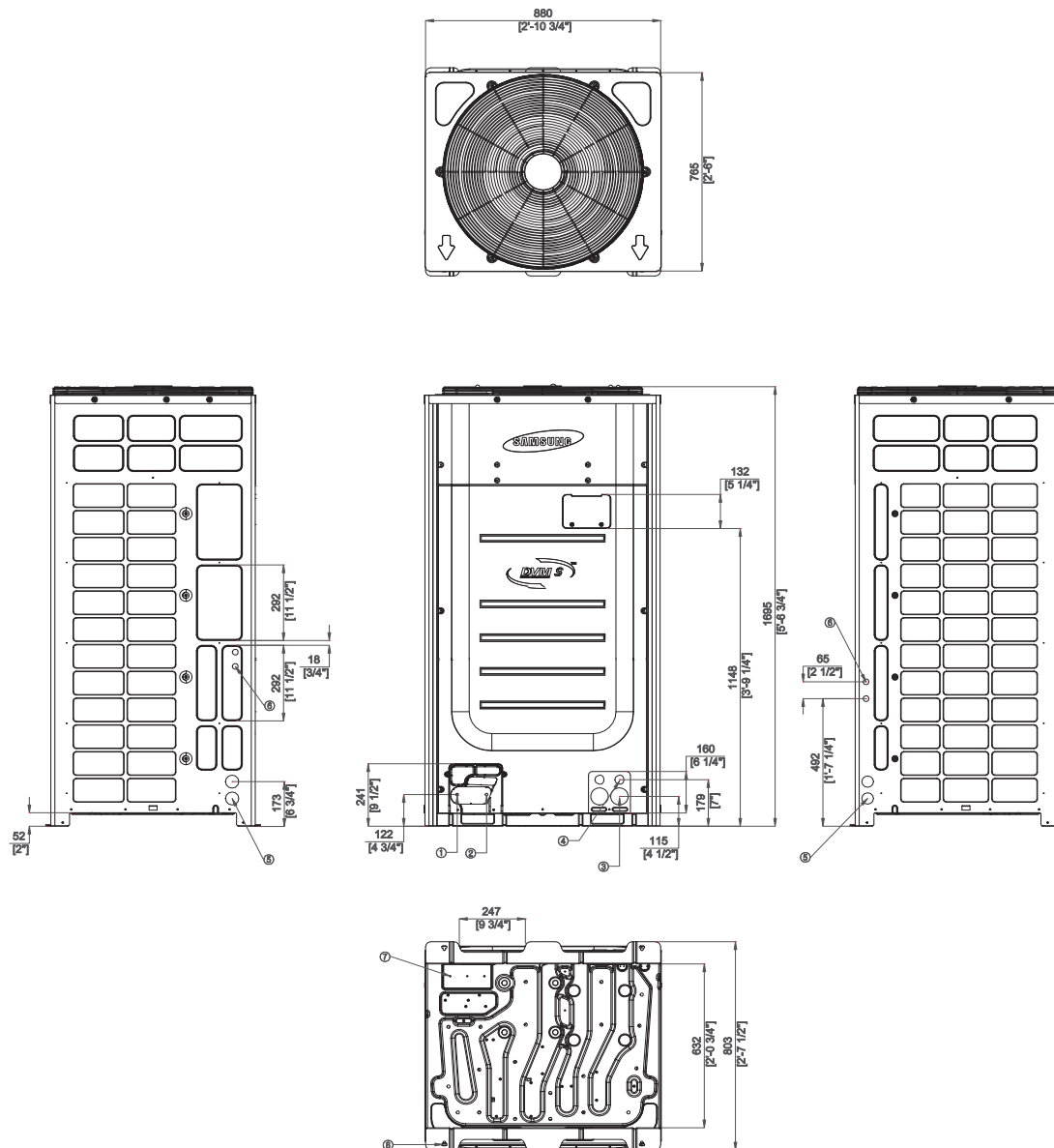


Table of descriptions

1	Refrigerant gas pipe	7	Knock-out Hole for Ref. Piping
2	Refrigerant liquid pipe	8	Anchor Bolt Hole
3	Power wiring conduit	9	
4	Communication wiring conduit	10	
5	Power wiring conduit	11	
6	Communication wiring conduit	12	

14 Capacity correction

Outdoor

AC180JNHPKH/EU + AC180JXAPNH/EU

Cooling



		Pipe Length (m)														
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Level Difference (m)	30	-	-	-	-	-	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	25	-	-	-	-	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	20	-	-	-	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	15	-	-	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	10	-	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	5	1.00	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	0	1.00	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-5	1.00	0.98	0.97	0.95	0.94	0.92	0.91	0.90	0.88	0.87	0.85	0.84	0.83	0.81	0.80
	-10	-	0.97	0.96	0.95	0.93	0.92	0.90	0.89	0.88	0.86	0.85	0.83	0.82	0.81	0.80
	-15	-	-	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.82	0.81	0.80
	-20	-	-	-	0.94	0.92	0.91	0.90	0.88	0.87	0.85	0.84	0.83	0.81	0.80	0.80
	-25	-	-	-	-	0.92	0.90	0.89	0.88	0.86	0.85	0.83	0.82	0.81	0.80	0.80
-30	-	-	-	-	-	0.90	0.89	0.87	0.86	0.84	0.83	0.82	0.81	0.80	0.80	

Heating



		Pipe Length (m)														
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
Level Difference (m)	30	-	-	-	-	-	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	25	-	-	-	-	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	20	-	-	-	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	15	-	-	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	10	-	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	5	1.00	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	0	1.00	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-5	1.00	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-10	-	0.99	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-15	-	-	0.97	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-20	-	-	-	0.96	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
	-25	-	-	-	-	0.94	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80
-30	-	-	-	-	-	0.93	0.91	0.90	0.89	0.87	0.86	0.84	0.83	0.81	0.80	

AC200JNHPKH/EU + AC200JXAPNH/EU

Cooling



Level Difference (m)	Pipe Length (m)															
	8	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
50	-	-	-	-	-	0.99	0.98	0.97	0.95	0.95	0.94	0.93	0.92	0.91	0.90	0.89
40	-	-	-	-	1.00	0.99	0.98	0.97	0.95	0.95	0.94	0.93	0.92	0.91	0.90	0.89
30	-	-	-	1.02	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
20	-	-	1.03	1.02	1.01	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
10	-	1.05	1.04	1.02	1.01	1.00	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
0	1.05	1.05	1.04	1.02	1.01	1.00	0.99	0.98	0.96	0.96	0.95	0.94	0.93	0.92	0.91	0.90
-10	-	1.05	1.04	1.03	1.01	1.00	0.99	0.98	0.96	0.96	0.95	0.94	0.93	0.92	0.91	0.90
-20	-	-	1.04	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
-30	-	-	-	1.03	1.02	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90
-40	-	-	-	-	1.02	1.01	1.00	0.98	0.97	0.97	0.96	0.94	0.93	0.92	0.91	0.90

Heating



Level Difference (m)	Pipe Length (m)															
	8	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
50	-	-	-	-	-	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
40	-	-	-	-	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
30	-	-	-	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
20	-	-	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
10	-	1.02	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
0	1.03	1.02	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
-10	-	1.02	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
-20	-	-	1.02	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
-30	-	-	-	1.01	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95
-40	-	-	-	-	1.01	1.00	0.99	0.99	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.95

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