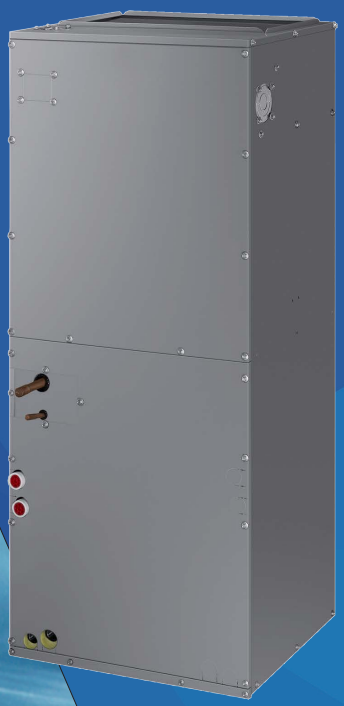
SAMSUNG

SINGLE Technical Data Book

Multi-position AHU for America

(R410A, HP)



Model : CNH**ZDB (AC***BNZDCH/AA), CXH**ADB (AC***BXADCH/AA)

History

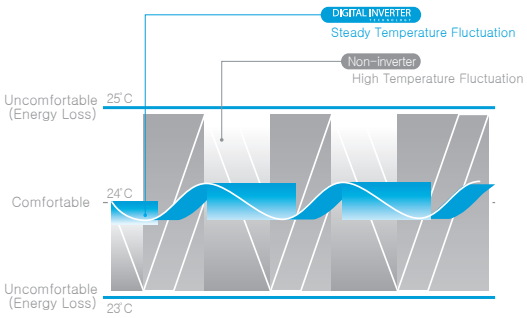
Version	Modification	Date	Remark
Ver.1.0	Released 2022 CAC Multi-position AHU for North America	22. 12. 09	

Features & Benefits

CAC Single - Superior performance

Stabilize the atmosphere with broad temperature allowance and control

Samsung is dedicated to supporting comfortable living and working environments based on the strength of its technologies. With a single unit, CAC Single delivers reliable comfort and control over multiple areas to ensure a pleasant atmosphere in any climate.



Wide temperature performance

No matter how extreme the temperature, the high-performing CAC Single can handle the condition-without the need for an additional unit. Featuring a wide temperature allowance, it can cool in heat of up to 50 and provide warmth in the freezing cold of -20°C to ensure a constant and comfortable home environment.

Versatile piping installation

CAC Single outdoor units offer a selection of pipe directions. The internal pipe connection ports allow four different pipe directions, supporting a neater, more organized-looking unit upon installation.

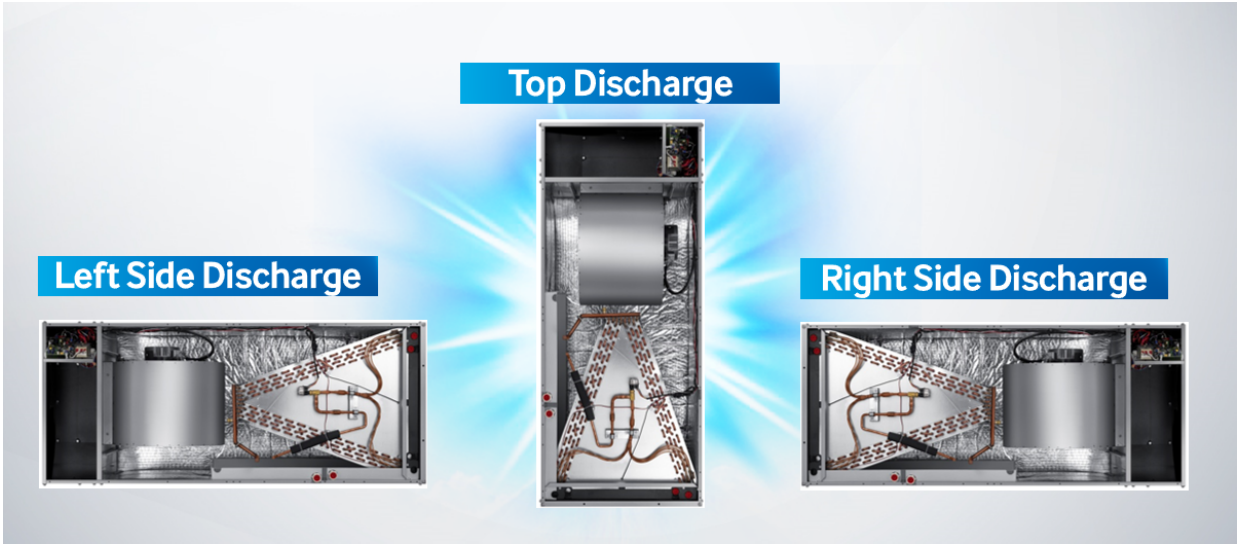


Ideal comfort in minutes

The CAC Single digital inverter air conditioner works at maximum capacity at startup. As soon as the temperature reaches the desired or set temperature, CAC Single performs fine adjustments to cope with any changes. This means less temperature fluctuation and ideal comfort in a matter of minutes.

Various selection of Discharging

Flexible installation by simply adjusting discharging direction
- Top & Left Side Discharge : Basic direction placing the product vertically or horizontally
- Right Side Discharge : By simply changing location of condensate drain pan to the right, installers can place the product with right side discharge
- Bottom Discharge : With easy application of down-flow kit, installers can flip over the product and adjust discharging direction to bottom



Nomenclature

US Code

Model Name

C	N	H	48	Z	D	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)

(1) Classification

C	CAC

(2) Product Type

N	Indoor Unit
X	Outdoor Unit

(3) Mode

A	Universal
C	Cooling Only
H	Heat Pump

(4) Capacity

X1,000 Btu/h (2 digits)

(5-1) Product Notation (Indoor Unit)

1	1 Way Cassette / Wind-Free 1Way Cassette
N	(Wind-Free) 4 Way Cassette (600x600)
4	(Wind-Free) 4 Way Cassette
6	360 Cassette
L	LSP Duct
H	HSP Duct
C	Ceiling
J	Console
A	AR9500 (Wall Mounted)
T	MAX4 (Wall Mounted)
Z	Multi-position AHU

(5-2) Feature1 (Outdoor Unit)

A	Inv+Side+General Temp
S	Inv+Side+Low Temp
Q	Inv+Side+Tropical Temp
F	Inv+Top+Tropical Temp

(6) Feature

F	Flagship
S	Standard
D	Deluxe
P	Premium

(7) Version

B	2022

Nomenclature

Indoor Unit

Model Name

AC	048	B	N	Z	D	C	H	/	AA
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AC	CAC

(2) Capacity

X1,000 Btu/h (3 digits)

(3) Version

B	2022

(4) Product Type

N	Indoor Unit
X	Outdoor Unit

(5) Product Notation

1	1 Way Cassette / Wind-Free 1Way Cassette
N	(Wind-Free) 4 Way Cassette (600x600)
4	(Wind-Free) 4 Way Cassette
6	360 Cassette
L	LSP Duct
H	HSP Duct
C	Ceiling
J	Console
A	AR9500 (Wall Mounted)
T	MAX4 (Wall Mounted)
Z	Multi-position AHU

(6) Feature

F	Flagship
S	Standard
D	Deluxe
P	Premium

(7) Rating Voltage

C	1Φ, 208-230V,60Hz

(8) Mode

C	Cooling Only
H	Heat Pump

Nomenclature

Outdoor Unit

Model Name

AC	048	B	X	A	D	C	H	/	AA
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		Buyer

(1) Classification

AC	CAC

(2) Capacity

x 1000 Btu/h (3 digits)

(3) Version

B	2022

(4) Product Type

N	Indoor Unit (NASA)
X	Outdoor Unit (NASA)

(5) Feature1

A	Inv+Side+General Temp
S	Inv+Side+Low Temp
Q	Inv+Side+Tropical Temp
F	Inv+Top+Tropical Temp

(6) Feature2

F	Flagship
S	Standard
D	Deluxe
P	Premium

(7) Rating Voltage

C	1Φ, 208~230V, 60Hz
H	3Φ, 400V, 60Hz

(8) Mode

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

Line-up

Indoor unit

Model	Capacity (kBtu/h)					
	18	24	30	36	42	48
Multi-position AHU						

Outdoor Unit

Model	Capacity (kBtu/h)					
	18	24	30	36	42	48
1Phase						

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Multi-position AHU

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1. Specification

Multi-position AHU

Model Name		Indoor Unit			AC018BNZDCH/AA	AC024BNZDCH/AA	AC030BNZDCH/AA
		Outdoor Unit			AC018BXADCH/AA	AC024BXADCH/AA	AC030BXADCH/AA
US Code		Indoor Unit			CNH18ZDB	CNH24ZDB	CNH30ZDB
		Outdoor Unit			CXH18ADB	CXH24ADB	CXH30ADB
System	Mode			-	Heat Pump	Heat Pump	Heat Pump
	Performance	Capacity (Min/Std/Max)	Cooling	kW	1.47 / 5.28 / 6.45	2.34 / 7.03 / 8.79	2.49 / 8.79 / 9.96
				Btu/h	5,000 / 18,000 / 22,000	8,000 / 24,000 / 30,000	8,500 / 30,000 / 34,000
				US RT	0.42 / 1.50 / 1.83	0.67 / 2.00 / 2.50	0.71 / 2.50 / 2.83
			Heating	kW	1.47 / 5.86 / 8.50	2.05 / 7.91 / 10.26	2.11 / 9.38 / 10.84
				Btu/h	5,000 / 20,000 / 29,000	7,000 / 27,000 / 35,000	7,200 / 32,000 / 37,000
				US RT	0.42 / 1.67 / 2.42	0.58 / 2.25 / 2.92	0.60 / 2.67 / 3.08
	Power	Power Input (Min/Std/Max)	Cooling	kW	0.49 / 1.73 / 2.60	0.65 / 2.47 / 3.27	0.65 / 3.16 / 4.16
			Heating		0.43 / 1.89 / 4.51	0.53 / 2.83 / 5.30	0.54 / 3.13 / 5.30
		Current Input (Min/Std/Max)	Cooling	A	3.0 / 7.9 / 11.5	4.3 / 11.2 / 14.5	4.6 / 14.2 / 18.5
			Heating		2.6 / 8.6 / 20.0	3.5 / 12.7 / 24.0	3.6 / 14.0 / 24.0
		Current	MCA	A	20.1	24.1	24.0
			MOP	A	25.0	30.0	30.0
	Efficiency	EER2	Cooling	-	3.05	2.84	2.78
			Cooling(US)	(Btu/h)/W	10.40	9.70	9.50
		COP2	Heating	W/W	3.10	2.80	3.00
		SEER2		-	16.2	16.9	16.6
		HSPF2		-	8.1	7.9	7.5
	Pipe Connections	Liquid Pipe		Type	Flare	Flare	Flare
				Φ, mm(inch)	6.35 (1/4)	6.35 (1/4)	9.52 (3/8)
		Gas Pipe		Type	Flare	Flare	Flare
				Φ, mm(inch)	12.7 (1/2)	15.88 (5/8)	15.88 (5/8)
		Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
		Pipe Length (ODU-IDU)	Standard	m (ft)	7.5 (24.6)	7.5 (24.6)	7.5 (24.6)
			Max.	m (ft)	50 (164.0)	50 (164.0)	50 (164.0)
			Elevation	m (ft)	30 (98.4)	30 (98.4)	30 (98.4)
			Chargeless	m (ft)	7.5 (24.6)	7.5 (24.6)	7.5 (24.6)
	Wiring Connections	Communication	Min.	mm^2	0.75	0.75	0.75
			Remark	-	F1,F2	F1,F2	F1,F2
	Refrigerant	Type		-	R410A	R410A	R410A
		Factory Charging		kg	2.0	2.6	2.6
				lbs	4.41	5.73	5.73
	Option Code	Standard		-	01E2FC-105020-2F343C-370000	01E2FC-105020-27484F-370000	01E2FC-105020-275A5E-370000
		Install		-	020010-100000-200000-300000	020010-100000-200000-300000	020010-100000-200000-300000
Indoor Unit	Power Supply			Φ,#,V,Hz	1,2,208-230,60	1,2,208-230,60	1,2,208-230,60
	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	Sirocco	Sirocco
		Quantity		EA	1	1	1
		Air Flow Rate	H/M/L	m^3/min	17.0/15.0/14.0	21.5/18.0/15.5	28.5/26.0/24.0
				ft^3/min	600/530/494	759/636/547	1007/918/848
				l/s	283/250/233	358/300/258	475/433/400
		External Static Pressue	Min/Std/Max	In Wg	0/0.58/0.8	0/0.58/0.8	0/0.58/1.0
	Fan Motor	Type		-	ECM	ECM	ECM
		Output		W x n	290 x 1	290 x 1	410 x 1
	Drain	Drain Pipe		Φ, inch	FPT 3/4"	FPT 3/4"	FPT 3/4"
	Sound	Sound Pressure Level	H/M/L	dB(A)	40/37/34	41/38/35	41/38/35
		Sound Power Level		dB(A)	58	59	59
	External Dimension	Net Weight		kg(lbs)	44.5 (98.1)	44.5 (98.1)	57.0 (125.7)
		Gross Weight		kg(lbs)	49.0 (108.0)	49.0 (108.0)	62.5 (137.8)
		Net Dimensions (WxHxD)		mm	445 x 1,092 x 533	445 x 1,092 x 533	533 x 1,219 x 533
				inch	17.50 x 43.00 x 21.00	17.50 x 43.00 x 21.00	21.00 x 48.00 x 21.00
		Gross Dimensions (WxHxD)		mm	493 x 1,135 x 665	493 x 1,135 x 665	590 x 1,305 x 665
				inch	19.50 x 44.75 x 26.25	19.50 x 44.75 x 26.25	23.25 x 51.50 x 26.25

1. Specification

Multi-position AHU

Model Name		Indoor Unit			AC018BNZDCH/AA	AC024BNZDCH/AA	AC030BNZDCH/AA
		Outdoor Unit			AC018BXADCH/AA	AC024BXADCH/AA	AC030BXADCH/AA
US Code		Indoor Unit			CNH18ZDB	CNH24ZDB	CNH30ZDB
		Outdoor Unit			CXH18ADB	CXH24ADB	CXH30ADB
Indoor Unit	Casing	Material		-	Steel	Steel	Steel
	Control System	Infrared remote control		-	AR-EH04U	AR-EH04U	AR-EH04U
		Wired remote control		-	MWR-WG00UN / MWR-SH11UN	MWR-WG00UN / MWR-SH11UN	MWR-WG00UN / MWR-SH11UN
	Drain Pump	Drain Pump		-	-	-	-
		Max.lifting Height / Displacement		in / gal/h	-	-	-
	Additional Accessories	Air Filter Base (option, for vercal installation)		-	VFB-1 (MERV 8)	VFB-1 (MERV 8)	VFB-2 (MERV 8)
		Heater kit (option, see NOTE 5)		-	VHK-103A VHK-105A	VHK-103A VHK-105A	VHK-205A VHK-210A
Outdoor Unit	Power Supply			Φ,#,V,Hz	1,2,208-230,60	1,2,208-230,60	1,2,208-230,60
	Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube
		Material	Fin	-	Al	Al	Al
			Tube	-	Cu	Cu	Cu
		Fin Treatment		-	Anti-Corrosion	Anti-Corrosion	Anti-Corrosion
	Compressor	Model		-	UG8T265FXAEW	UG8T300FUBJUSG	UG8T300FUBJUSG
		Type		-	Twin BLDC	Twin BLDC	Twin BLDC
		Output		kW	2.32	2.82	2.82
		Oil	Type	-	POE	POE	POE
			Initial Charge	cc (fl oz)	700	1200	1200
	Fan	Type		-	Propeller	Propellar	Propellar
		Discharge direction		-	Front	Front	Front
		Quantity		EA	1	1	1
		Air Flow Rate	H/M/L	m^3/min	61	76	76
				ft^3/min	2,154	2,684	2,684
				l/s	1,017	1,267	1,267
	Fan Motor	Type		-	BLDC	BLDC	BLDC
		Output		W x n	125 x 1	125 x 1	125 x 1
	Sound	Sound Pressure Level	Cooling	dB(A)	48	50	50
			Heating	dB(A)	48	52	52
		Sound Power Level		dB(A)	62	65	67
	External Dimension	Net Weight		kg(lbs)	53.7 (118.4)	72.0 (158.7)	72.0 (158.7)
		Gross Weight		kg(lbs)	57.7 (127.2)	77.0 (169.8)	77.0 (169.8)
		Net Dimensions (WxHxD)		mm	880 x 798 x 310	940 x 998 x 330	940 x 998 x 330
				inch	34.65 x 31.42 x 12.20	37.01 x 39.29 x 12.99	37.01 x 39.29 x 12.99
		Gross Dimensions (WxHxD)		mm	1,023 x 881 x 413	995 x 1,096 x 426	995 x 1,096 x 426
				inch	40.28 x 34.69 x 16.26	39.17 x 43.15 x 16.77	39.17 x 43.15 x 16.77
	Casing	Material	Body	-	Steel	Steel	Steel
	Operating Temp. Range	Cooling		℃ (℉)	-18~50 (0~122)	-18~50 (0~122)	-18~50 (0~122)
		Heating		℃ (℉)	-25~24 (-13~75)	-25~24 (-13~75)	-20~24 (-4~75)

NOTE

- Specification may be subject to change without prior notice.
  1) Performances are based on the following test conditions.
     - Cooling : Indoor temperature : 80°F(26.7°C) DB, 67°F(19.4°C) WB, Outdoor temperature : 95°F(35°C) DB, 75°F(23.9°C) WB
     - Heating : Indoor temperature : 70°F(21.1°C) DB, 60°F(15.6°C) WB, Outdoor temperature : 47°F(8.3°C) DB, 43°F(6.1°C) WB
     - Equivalent refrigerant piping length 7.5m(24.6ft), Level differences : 0m(0ft))
  2) Select wire size based on the value of MCA
  3) 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 = 20uPa
  4) 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
  5) VHK-*03/05/10A : 3/5/10[kW] supplemental electric heat kit.
  6) These products contain R410A which is fluorinated greenhouse gas.

1. Specification

Multi-position AHU

Model Name		Indoor Unit			AC036BNZDCH/AA	AC042BNZDCH/AA	AC048BNZDCH/AA
		Outdoor Unit			AC036BXADCH/AA	AC042BXADCH/AA	AC048BXADCH/AA
US Code		Indoor Unit			CNH36ZDB	CNH42ZDB	CNH48ZDB
		Outdoor Unit			CXH36ADB	CXH42ADB	CXH48ADB
System	Mode			-	Heat Pump	Heat Pump	Heat Pump
	Performance	Capacity (Min/Std/Max)	Cooling	kW	2.93 / 10.55 / 10.84	3.52 / 12.31 / 13.48	3.66 / 14.07 / 15.24
				Btu/h	10,000 / 36,000 / 37,000	12,000 / 42,000 / 46,000	12,500 / 48,000 / 52,000
				US RT	0.83 / 3.00 / 3.08	1.00 / 3.50 / 3.83	1.04 / 4.00 / 4.33
			Heating	kW	2.93 / 11.72 / 14.65	3.08 / 13.77 / 17.58	3.22 / 15.53 / 18.46
				Btu/h	10,000 / 40,000 / 50,000	10,500 / 47,000 / 60,000	11,000 / 53,000 / 63,000
				US RT	0.83 / 3.33 / 4.17	0.88 / 3.92 / 5.00	0.92 / 4.42 / 5.25
	Power	Power Input (Min/Std/Max)	Cooling	kW	0.92 / 3.75 / 4.88	0.94 / 4.42 / 5.60	0.97 / 5.45 / 6.69
			Heating		0.80 / 3.91 / 6.09	0.81 / 4.92 / 7.40	0.82 / 5.55 / 7.67
		Current Input (Min/Std/Max)	Cooling	A	5.0 / 16.8 / 21.7	5.1 / 19.8 / 24.8	5.1 / 24.2 / 29.4
			Heating		4.3 / 17.5 / 24.0	4.4 / 22.1 / 32.0	4.4 / 24.6 / 32.0
		Current	MCA	A	24.5	32.2	32.8
			MOP	A	35	40	40
	Efficiency	EER2	Cooling	-	2.81	2.78	2.58
			Cooling(US)	(Btu/h)/W	9.60	9.50	8.80
		COP2	Heating	W/W	3.00	2.80	2.80
		SEER2		-	16.6	17.5	16.7
		HSPF2		-	8.4	8.4	8.1
	Pipe Connections	Liquid Pipe		Type	Flare	Flare	Flare
				Φ, mm(inch)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
		Gas Pipe		Type	Flare	Flare	Flare
				Φ, mm(inch)	15.88 (5/8)	15.88 (5/8)	15.88 (5/8)
		Heat Insulation		-	Both liquid and gas pipes	Both liquid and gas pipes	Both liquid and gas pipes
		Pipe Length (ODU-IDU)	Standard	m (ft)	7.5 (24.6)	7.5 (24.6)	7.5 (24.6)
			Max.	m (ft)	75 (246.0)	75 (246.0)	75 (246.0)
			Elevation	m (ft)	30 (98.4)	30 (98.4)	30 (98.4)
			Chargeless	m (ft)	7.5 (24.6)	7.5 (24.6)	7.5 (24.6)
	Wiring Connections	Communication	Min.	mm^2	0.75	0.75	0.75
			Remark	-	F1,F2	F1,F2	F1,F2
	Refrigerant	Type		-	R-410A	R-410A	R-410A
		Factory Charging		kg	2.9	3.4	3.4
				lbs	6.39	7.50	7.50
	Option Code	Standard		-	01E2FC-105020-276975-370005	01E2FC-105020-277D89-37000D	01E2FC-105020-278C9B-37000D
		Install		-	020010-100000-200000-300000	020010-100000-200000-300000	020010-100000-200000-300000
Indoor Unit	Power Supply			Φ,#,V,Hz	1,2,208-230,60	1,2,208-230,60	1,2,208-230,60
	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	Sirocco	Sirocco
		Quantity		EA	1	1	1
		Air Flow Rate	H/M/L	m^3/min	34.8/30.4/25.5	37.1/34.0/31.0	42.3/39.3/35.6
				ft^3/min	1229/1074/901	1310/1201/1095	1494/1388/1257
				l/s	580/507/425	618/567/517	705/655/593
		External Static Pressue	Min/Std/Max	In Wg	0/0.58/1.0	0/0.58/1.0	0/0.58/1.0
	Fan Motor	Type		-	ECM	ECM	ECM
		Output		W x n	410 x 1	410 x 1	590 x 1
	Drain	Drain Pipe		Φ, inch	FPT 3/4"	FPT 3/4"	FPT 3/4"
	Sound	Sound Pressure Level	H/M/L	dB(A)	45/42/39	46/43/40	47/45/43
		Sound Power Level		dB(A)	63	64	65
	External Dimension	Net Weight		kg(lbs)	57.0 (125.7)	75.5 (166.4)	75.5 (166.4)
		Gross Weight		kg(lbs)	62.5 (137.8)	81.5 (179.7)	81.5 (179.7)
		Net Dimensions (WxHxD)		mm	533 x 1,219 x 533	622 x 1,492 x 553	622 x 1,492 x 553
				inch	21.00 x 48.00 x 21.00	24.50 x 58.75 x 21.75	24.50 x 58.75 x 21.75
		Gross Dimensions (WxHxD)		mm	590 x 1,305 x 665	676 x 1,588 x 695	676 x 1,588 x 695
				inch	23.25 x 51.50 x 26.25	26.50 x 62.50 x 27.25	26.50 x 62.50 x 27.25

1. Specification

Multi-position AHU

Model Name		Indoor Unit			AC036BNZDCH/AA	AC042BNZDCH/AA	AC048BNZDCH/AA
		Outdoor Unit			AC036BXADCH/AA	AC042BXADCH/AA	AC048BXADCH/AA
US Code		Indoor Unit			CNH36ZDB	CNH42ZDB	CNH48ZDB
		Outdoor Unit			CXH36ADB	CXH42ADB	CXH48ADB
Indoor Unit	Casing	Material		-	Steel	Steel	Steel
	Control System	Infrared remote control		-	AR-EH04U	AR-EH04U	AR-EH04U
		Wired remote control		-	MWR-WG00UN / MWR-SH11UN	MWR-WG00UN / MWR-SH11UN	MWR-WG00UN / MWR-SH11UN
	Drain Pump	Drain Pump		-	-	-	-
		Max.lifting Height / Displacement		in / gal/h	-	-	-
	Additional Accessories	Air Filter Base (option, for vercal installation)		-	VFB-2 (MERV 8)	VFB-3 (MERV 8)	VFB-3 (MERV 8)
		Heater kit (option, see NOTE 5)		-	VHK-205A VHK-210A	VHK-305A VHK-310A	VHK-305A VHK-310A
Outdoor Unit	Power Supply			Φ,#,V,Hz	1,2,208-230,60	1,2,208-230,60	1,2,208-230,60
	Heat Exchanger	Type		-	Fin & Tube	Fin & Tube	Fin & Tube
		Material	Fin	-	Al	Al	Al
			Tube	-	Cu	Cu	Cu
		Fin Treatment		-	Anti-Corrosion	Anti-Corrosion	Anti-Corrosion
	Compressor	Model		-	UG5TK1450FJXSG	UG5TK1450FJXSG	UG5TK1450FJXSG
		Type		-	Twin BLDC	Twin BLDC	Twin BLDC
		Output		kW	4.19	4.19	4.19
		Oil	Type	-	PVE	PVE	PVE
			Initial Charge	cc (fl oz)	1700	1700	1700
	Fan	Type		-	Propellar	Propellar	Propellar
		Discharge direction		-	Front	Front	Front
		Quantity		EA	2	2	2
		Air Flow Rate	H/M/L	m^3/min	100	100	100
				ft^3/min	3,532	3,532	3,532
				l/s	1,667	1,667	1,667
	Fan Motor	Type		-	BLDC	BLDC	BLDC
		Output		W x n	125 x 2	125 x 2	125 x 2
	Sound	Sound Pressure Level	Cooling	dB(A)	52	53	56
			Heating	dB(A)	54	55	58
		Sound Power Level		dB(A)	69	70	72
	External Dimension	Net Weight		kg(lbs)	86.0(189.6)	88.5(195.1)	88.5(195.1)
		Gross Weight		kg(lbs)	95.5 (210.5)	98.0(216.1)	98.0(216.1)
		Net Dimensions (WxHxD)		mm	940 x 1,210 x 330	940 x 1,210 x 330	940 x 1,210 x 330
				inch	37.01 x 47.64 x 12.99	37.01 x 47.64 x 12.99	37.01 x 47.64 x 12.99
		Gross Dimensions (WxHxD)		mm	995 x 1,388 x 426	995 x 1,388 x 426	995 x 1,388 x 426
				inch	39.17 x 54.65 x 16.77	39.17 x 54.65 x 16.77	39.17 x 54.65 x 16.77
	Casing	Material	Body	-	Steel	Steel	Steel
	Operating Temp. Range	Cooling		℃ (℉)	-18~50 (0~122)	-18~50 (0~122)	-18~50 (0~122)
		Heating		℃ (℉)	-20~24 (-4~75)	-20~24 (-4~75)	-20~24 (-4~75)

NOTE

- Specification may be subject to change without prior notice.
  1) Performances are based on the following test conditions.
     - Cooling : Indoor temperature : 80°F(26.7°C) DB, 67°F(19.4°C) WB, Outdoor temperature : 95°F(35°C) DB, 75°F(23.9°C) WB
     - Heating : Indoor temperature : 70°F(21.1°C) DB, 60°F(15.6°C) WB, Outdoor temperature : 47°F(8.3°C) DB, 43°F(6.1°C) WB
     - Equivalent refrigerant piping length 7.5m(24.6ft), Level differences : 0m(0ft))
  2) Select wire size based on the value of MCA
  3) 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 = 20uPa
  4) 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
  5) VHK-*03/05/10A : 3/5/10[kW] supplemental electric heat kit.
  6) These products contain R410A which is fluorinated greenhouse gas.

2. Summary Table

Multi-position AHU

Performance Characteristics

Model Code	Net Weight (lbs)		Capacity		Fan Speed	Airflow (Cooling/Heating) (CFM)	Sound Pressure Level (dBA)	Sound Power Level (dBA)
			Cooling (Btu/h)	Heating (Btu/h)				
CNH18ZDB (AC018BNZDCH/AA)	98.1	Max.	22,000	29,000	High	600 / 600	40	58
		Std.	18,000	20,000	Mid	530 / 530	37	-
		Min.	5,000	5,000	Low	494 / 494	34	-
CNH24ZDB (AC024BNZDCH/AA)	98.1	Max.	30,000	35,000	High	759 / 759	41	59
		Std.	24,000	27,000	Mid	636 / 636	38	-
		Min.	8,000	7,000	Low	547 / 547	35	-
CNH30ZDB (AC030BNZDCH/AA)	125.7	Max.	34,000	37,000	High	1,007 / 1,007	41	59
		Std.	30,000	32,000	Mid	918 / 918	38	-
		Min.	8,500	7,200	Low	848 / 848	35	-
CNH36ZDB (AC036BNZDCH/AA)	125.7	Max.	37,000	50,000	High	1,229 / 1,229	45	63
		Std.	36,000	40,000	Mid	1,074 / 1,074	42	-
		Min.	10,000	10,000	Low	901 / 901	39	-
CNH42ZDB (AC042BNZDCH/AA)	166.4	Max.	46,000	60,000	High	1,310 / 1,310	46	64
		Std.	42,000	47,000	Mid	1,201 / 1,201	43	-
		Min.	12,000	10,500	Low	1,095 / 1,095	40	-
CNH48ZDB (AC048BNZDCH/AA)	166.4	Max.	52,000	63,000	High	1,494 / 1,494	47	65
		Std.	48,000	53,000	Mid	1,388 / 1,388	45	-
		Min.	12,500	11,000	Low	1,257 / 1,257	43	-

NOTE

- Sound data is based on cooling operation.

Electric Characteristics

Model		Outdoor Unit				Input Current (Amperes)				Power Supply	
Indoor Unit	Outdoor Unit	Rated	Voltage range			Outdoor Unit		Indoor Unit	Total	MCA(A)	MOP(A)
		Hz	Volts	Min.	Max	Cooling	Heating				
CNH18ZDB (AC018BNZDCH/AA)	CXH18ADB (AC018BXADCH/AA)	60	208 to 230	187	253	17.94	17.94	1.50	19.44	20.1	25
CNH24ZDB (AC024BNZDCH/AA)	CXH24ADB (AC024BXADCH/AA)	60	208 to 230	187	253	21.94	21.94	2.10	24.04	24.1	30
CNH30ZDB (AC030BNZDCH/AA)	CXH30ADB (AC030BXADCH/AA)	60	208 to 230	187	253	21.50	21.50	2.50	24.00	24.0	30
CNH36ZDB (AC036BNZDCH/AA)	CXH36ADB (AC036BXADCH/AA)	60	208 to 230	187	253	20.88	20.88	3.60	24.48	24.5	35
CNH42ZDB (AC042BNZDCH/AA)	CXH42ADB (AC042BXADCH/AA)	60	208 to 230	187	253	28.63	28.63	3.40	32.03	32.2	40
CNH48ZDB (AC048BNZDCH/AA)	CXH48ADB(AC048BXADCH/AA)	60	208 to 230	187	253	28.63	28.63	4.10	32.73	32.8	40

NOTE

- MCA : Minimum circuit amperes
- MOP: Maximum Overcurrent Protective Device
- Select wire size based on the value of MCA

3. Capacity Table

Multi-position AHU

(1) CNH18ZDB(AC018BNZDCH/AA) + CXH18ADB (AC018BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	15.9	11.5	1.22	16.8	11.9	1.25	17.5	12.2	1.27	18.0	12.6	1.30	18.4	12.5	1.31	19.3	12.3	1.32	20.2	12.1	1.35
70	19.9	14.4	1.30	21.0	14.8	1.33	21.8	15.3	1.36	22.5	15.8	1.38	23.0	15.6	1.40	24.1	15.4	1.41	25.3	15.1	1.44
95	15.9	11.5	1.63	16.8	11.9	1.66	17.5	12.2	1.70	18.0	12.6	1.73	18.4	12.5	1.75	19.3	12.3	1.76	20.2	12.1	1.80
115	16.2	12.1	2.69	17.1	12.4	2.74	17.8	12.8	2.80	18.4	13.2	2.85	18.7	13.1	2.88	19.7	13.0	2.91	20.6	12.7	2.97
122	14.3	11.8	2.61	15.1	12.2	2.66	15.7	12.6	2.71	16.2	13.0	2.77	16.5	12.8	2.80	17.4	12.7	2.82	18.2	12.4	2.88

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-13	14.4	2.53	14.3	2.51	14.1	2.48	14.0	2.46	13.9	2.43	13.7	2.41
-4	20.6	3.88	20.4	3.85	20.2	3.81	20.0	3.77	19.8	3.73	19.6	3.69
14	26.8	4.67	26.5	4.63	26.3	4.58	26.0	4.54	25.7	4.49	25.5	4.45
32	24.7	3.12	24.5	3.08	24.2	3.05	24.0	3.02	23.8	2.99	23.5	2.96
47	20.6	1.95	20.4	1.93	20.2	1.91	20.0	1.89	19.8	1.87	19.6	1.85
75.2	26.8	2.24	26.5	2.22	26.3	2.20	26.0	2.17	25.7	2.15	25.5	2.13

NOTE

- The performance table shows the average value of each conditions.

3. Capacity Table

Multi-position AHU

(2) CNH24ZDB(AC024BNZDCH/AA) + CXH24ADB (AC024BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	26.5	19.2	1.39	27.9	19.8	1.42	29.1	20.4	1.45	30.0	21.0	1.48	30.6	20.8	1.50	32.1	20.6	1.51	33.7	20.2	1.54
70	23.8	17.2	1.74	25.0	17.7	1.78	26.1	18.3	1.82	26.9	18.8	1.85	27.4	18.6	1.87	28.8	18.4	1.89	30.2	18.1	1.93
95	21.2	15.3	2.32	22.3	15.8	2.37	23.3	16.3	2.42	24.0	16.8	2.47	24.5	16.6	2.49	25.7	16.5	2.52	27.0	16.1	2.57
115	21.2	17.5	3.60	22.3	18.1	3.68	23.3	18.6	3.75	24.0	19.2	3.83	24.5	19.0	3.87	25.7	18.8	3.91	27.0	18.4	3.98
122	18.0	15.8	3.25	19.0	16.3	3.32	19.8	16.8	3.39	20.4	17.3	3.46	20.8	17.2	3.49	21.8	17.0	3.53	22.9	16.7	3.60

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-13	16.7	2.62	16.5	2.60	16.4	2.57	16.2	2.55	16.0	2.52	15.9	2.50
-4	27.8	5.32	27.5	5.26	27.3	5.21	27.0	5.16	26.7	5.11	26.5	5.06
14	27.8	5.10	27.5	5.05	27.3	5.00	27.0	4.95	26.7	4.90	26.5	4.85
32	30.6	3.79	30.3	3.75	30.0	3.72	29.7	3.68	29.4	3.64	29.1	3.61
47	27.8	2.92	27.5	2.89	27.3	2.86	27.0	2.83	26.7	2.80	26.5	2.77
75.2	37.6	3.64	37.2	3.61	36.8	3.57	36.5	3.54	36.1	3.50	35.7	3.47

NOTE

- The performance table shows the average value of each conditions.

3. Capacity Table

Multi-position AHU

(3) CNH30ZDB(AC030BNZDCH/AA) + CXH30ADB (AC030BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	33.2	24.0	1.78	34.9	24.7	1.82	36.4	25.5	1.86	37.5	26.3	1.90	38.3	26.0	1.91	40.2	25.7	1.93	42.2	25.2	1.97
70	29.7	21.5	2.23	31.3	22.1	2.28	32.6	22.8	2.32	33.6	23.5	2.37	34.3	23.3	2.39	36.0	23.1	2.42	37.8	22.6	2.47
95	26.5	19.2	2.97	27.9	19.8	3.03	29.1	20.4	3.10	30.0	21.0	3.16	30.6	20.8	3.19	32.1	20.6	3.22	33.7	20.2	3.29
115	23.9	19.7	3.87	25.1	20.3	3.95	26.2	21.0	4.03	27.0	21.6	4.11	27.5	21.4	4.15	28.9	21.2	4.19	30.4	20.7	4.27
122	19.9	17.5	3.42	21.0	18.0	3.49	21.8	18.6	3.56	22.5	19.1	3.63	23.0	18.9	3.67	24.1	18.7	3.71	25.3	18.4	3.78

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-4	28.0	4.99	27.7	4.94	27.5	4.89	27.2	4.84	26.9	4.79	26.7	4.74
14	33.0	5.64	32.6	5.59	32.3	5.53	32.0	5.48	31.7	5.42	31.4	5.37
32	36.3	4.19	35.9	4.15	35.6	4.11	35.2	4.07	34.8	4.03	34.5	3.99
47	33.0	3.22	32.6	3.19	32.3	3.16	32.0	3.13	31.7	3.10	31.4	3.07
75.2	44.5	4.03	44.1	3.99	43.6	3.95	43.2	3.91	42.8	3.87	42.3	3.83

NOTE

- The performance table shows the average value of each conditions.

3. Capacity Table

Multi-position AHU

(4) CNH36ZDB(AC036BNZDCH/AA) + CXH36ADB (AC036BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	36.6	26.4	3.53	38.6	27.3	3.60	40.2	28.1	3.68	41.4	29.0	3.75	42.2	28.7	3.79	44.3	28.4	3.83	46.6	27.8	3.90
70	38.2	27.6	3.18	40.2	28.5	3.24	41.9	29.3	3.31	43.2	30.2	3.38	44.1	29.9	3.41	46.3	29.6	3.44	48.6	29.0	3.51
95	31.8	23.0	3.53	33.5	23.7	3.60	34.9	24.4	3.68	36.0	25.2	3.75	36.7	24.9	3.79	38.6	24.7	3.83	40.5	24.2	3.90
115	28.7	23.7	4.24	30.2	24.4	4.32	31.4	25.1	4.41	32.4	25.9	4.50	33.0	25.7	4.55	34.7	25.4	4.59	36.4	24.9	4.68
122	23.9	20.9	3.18	25.1	21.6	3.24	26.2	22.3	3.31	27.0	23.0	3.38	27.5	22.7	3.41	28.9	22.5	3.44	30.4	22.0	3.51

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-4	34.0	5.25	33.7	5.20	33.3	5.15	33.0	5.10	32.7	5.05	32.3	5.00
14	37.1	5.24	36.7	5.19	36.4	5.13	36.0	5.08	35.6	5.03	35.3	4.98
32	39.2	4.23	38.8	4.19	38.4	4.15	38.0	4.11	37.6	4.06	37.2	4.02
47	41.2	4.03	40.8	3.99	40.4	3.95	40.0	3.91	39.6	3.87	39.2	3.83
75.2	47.4	3.63	46.9	3.59	46.5	3.55	46.0	3.52	45.5	3.48	45.1	3.45

NOTE

- The performance table shows the average value of each conditions.

3. Capacity Table

Multi-position AHU

(5) CNH42ZDB(AC042BNZDCH/AA) + CXH42ADB (AC042BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	42.7	30.9	4.16	45.0	31.8	4.24	46.9	32.8	4.33	48.3	33.8	4.42	49.3	33.5	4.46	51.7	33.1	4.51	54.3	32.5	4.60
70	44.6	32.2	3.74	46.9	33.2	3.82	48.9	34.2	3.90	50.4	35.3	3.98	51.4	34.9	4.02	54.0	34.6	4.06	56.7	33.9	4.14
95	37.2	26.8	4.16	39.1	27.7	4.24	40.7	28.5	4.33	42.0	29.4	4.42	42.8	29.1	4.46	45.0	28.8	4.51	47.2	28.2	4.60
115	31.6	26.1	4.58	33.2	26.9	4.67	34.6	27.7	4.76	35.7	28.6	4.86	36.4	28.3	4.91	38.2	28.0	4.96	40.1	27.4	5.06
122	26.0	22.8	3.95	27.4	23.5	4.03	28.5	24.2	4.12	29.4	25.0	4.20	30.0	24.7	4.24	31.5	24.5	4.28	33.1	24.0	4.37

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-4	40.2	6.32	39.8	6.25	39.4	6.19	39.0	6.13	38.6	6.07	38.2	6.01
14	46.0	6.84	45.5	6.78	45.1	6.71	44.7	6.64	44.2	6.58	43.8	6.51
32	46.0	5.32	45.5	5.27	45.1	5.22	44.7	5.17	44.2	5.11	43.8	5.06
47	48.4	5.07	47.9	5.02	47.5	4.97	47.0	4.92	46.5	4.87	46.1	4.82
75.2	55.7	4.56	55.1	4.52	54.6	4.47	54.1	4.43	53.5	4.38	53.0	4.34

NOTE

- The performance table shows the average value of each conditions.

3. Capacity Table

Multi-position AHU

(6) CNH48ZDB(AC048BNZDCH/AA) + CXH48ADB (AC048BXADCH/AA)

Cooling

TC : Total Capacity, SHC : Sensible Heat Capacity, PI : Power Input

Outdoor Temp. (°F, DB)	Indoor Temperature (°F, DB / WB)																				
	68 / 57			72 / 61			77 / 64			80 / 67			82 / 70			86 / 72			90 / 75		
	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW	MBH	MBH	kW
0	48.8	35.3	5.13	51.4	36.4	5.23	53.5	37.5	5.34	55.2	38.6	5.45	56.3	38.3	5.50	59.1	37.9	5.56	62.1	37.1	5.67
70	51.0	36.8	4.62	53.6	37.9	4.71	55.9	39.1	4.81	57.6	40.3	4.91	58.8	39.9	4.95	61.7	39.5	5.00	64.8	38.7	5.10
95	42.5	30.7	5.13	44.7	31.6	5.23	46.6	32.6	5.34	48.0	33.6	5.45	49.0	33.3	5.50	51.4	32.9	5.56	54.0	32.3	5.67
115	34.0	28.0	4.87	35.8	28.9	4.97	37.2	29.8	5.07	38.4	30.7	5.18	39.2	30.4	5.23	41.1	30.1	5.28	43.2	29.5	5.39
122	27.6	24.2	4.10	29.1	25.0	4.19	30.3	25.7	4.27	31.2	26.5	4.36	31.8	26.3	4.40	33.4	26.0	4.45	35.1	25.5	4.54

Heating

TC : Total Capacity, PI : Power Input

Outdoor Temperature (°F, DB)	Indoor Temperature (°F, DB)											
	61		64		68		70		22		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
-4	41.2	6.39	40.8	6.32	40.4	6.26	40.0	6.20	39.6	6.14	39.2	6.08
14	49.1	7.43	48.7	7.36	48.2	7.29	47.7	7.22	47.2	7.14	46.8	7.07
32	51.9	6.00	51.4	5.94	50.9	5.89	50.4	5.83	49.8	5.77	49.3	5.71
47	54.6	5.72	54.1	5.66	53.5	5.61	53.0	5.55	52.5	5.49	51.9	5.44
75.2	62.8	5.15	62.2	5.10	61.6	5.04	61.0	5.00	60.3	4.95	59.7	4.90

NOTE

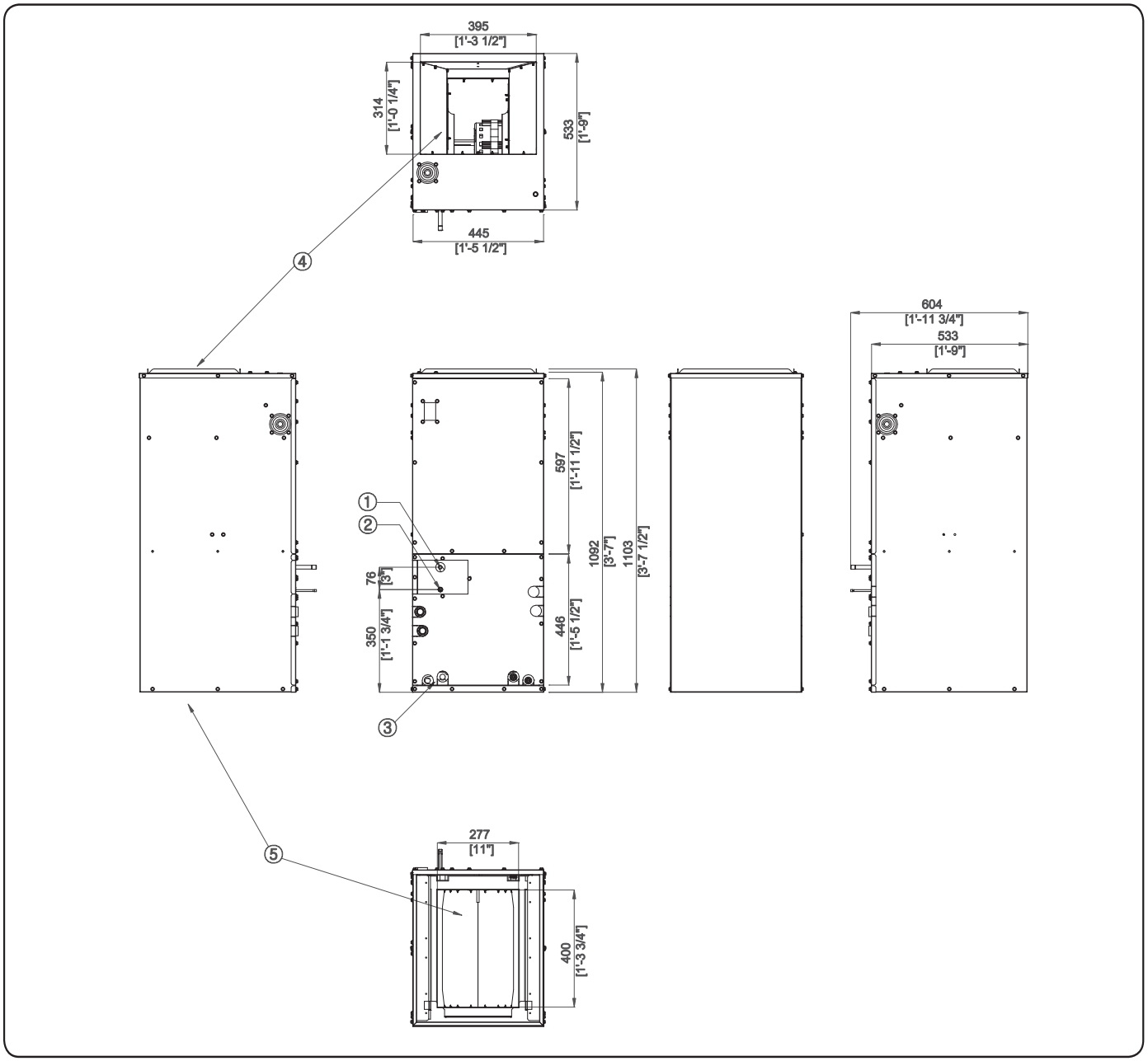
- The performance table shows the average value of each conditions.

4. Dimensional Drawing

Multi-position AHU

CNH18ZDB(AC018BNZDCH/AA), CNH24ZDB(AC024BNZDCH/AA)

Units : mm [inches]



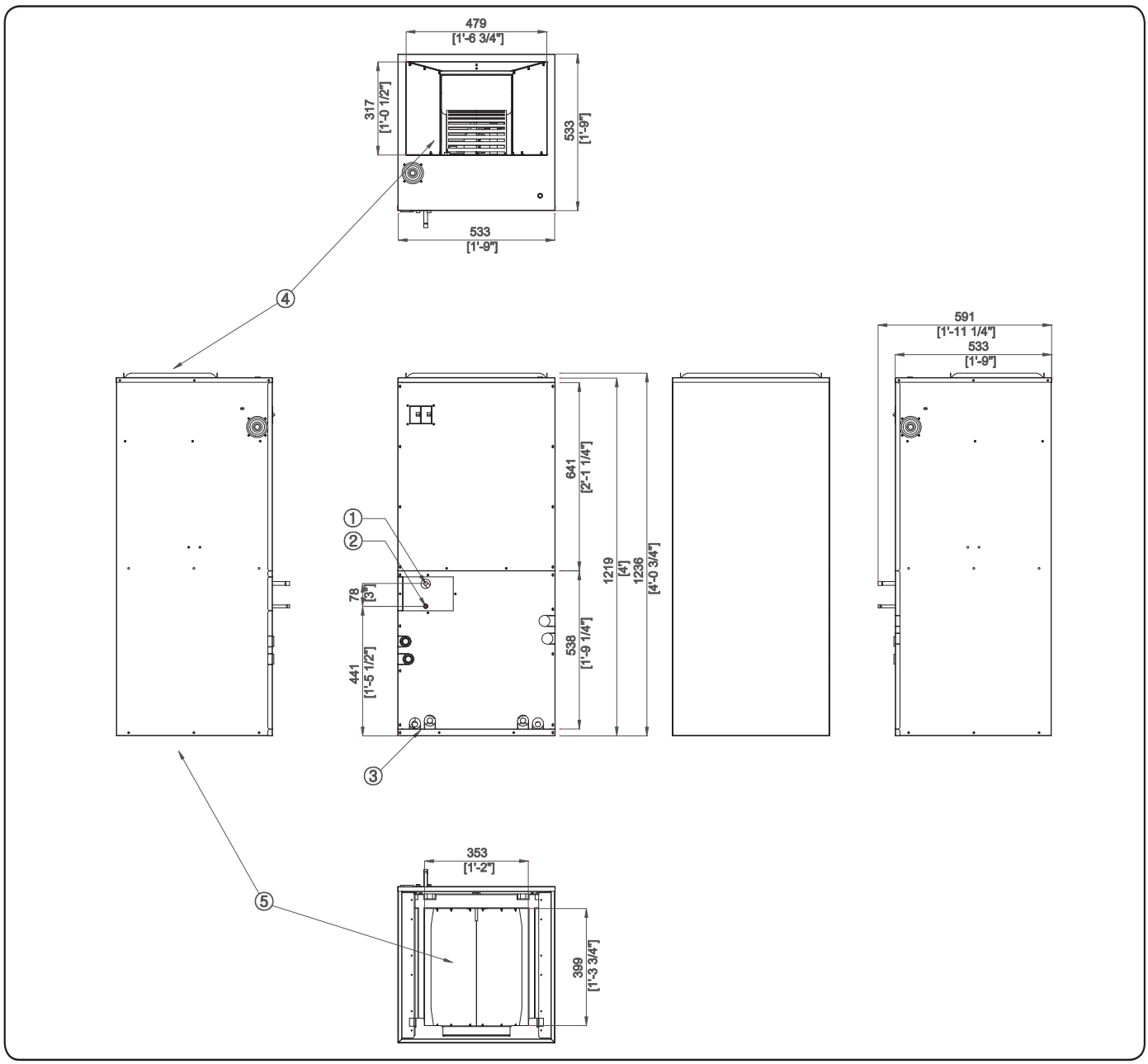
No.	Name	Description	
		CNH18ZDB	CNH24ZDB
1	Gas pipe connection	Φ12.7(1/2")	Φ15.88(5/8")
2	Liquid pipe connection	Φ6.35(1/4")	
3	Drain pipe connection	FPT 3/4"	
4	Air outlet		
5	Air intake		

4. Dimensional Drawing

Multi-position AHU

CNH30ZDB(AC030BNZDCH/AA), CNH36ZDB (AC036BNZDCH/AA)

Units : mm [inches]



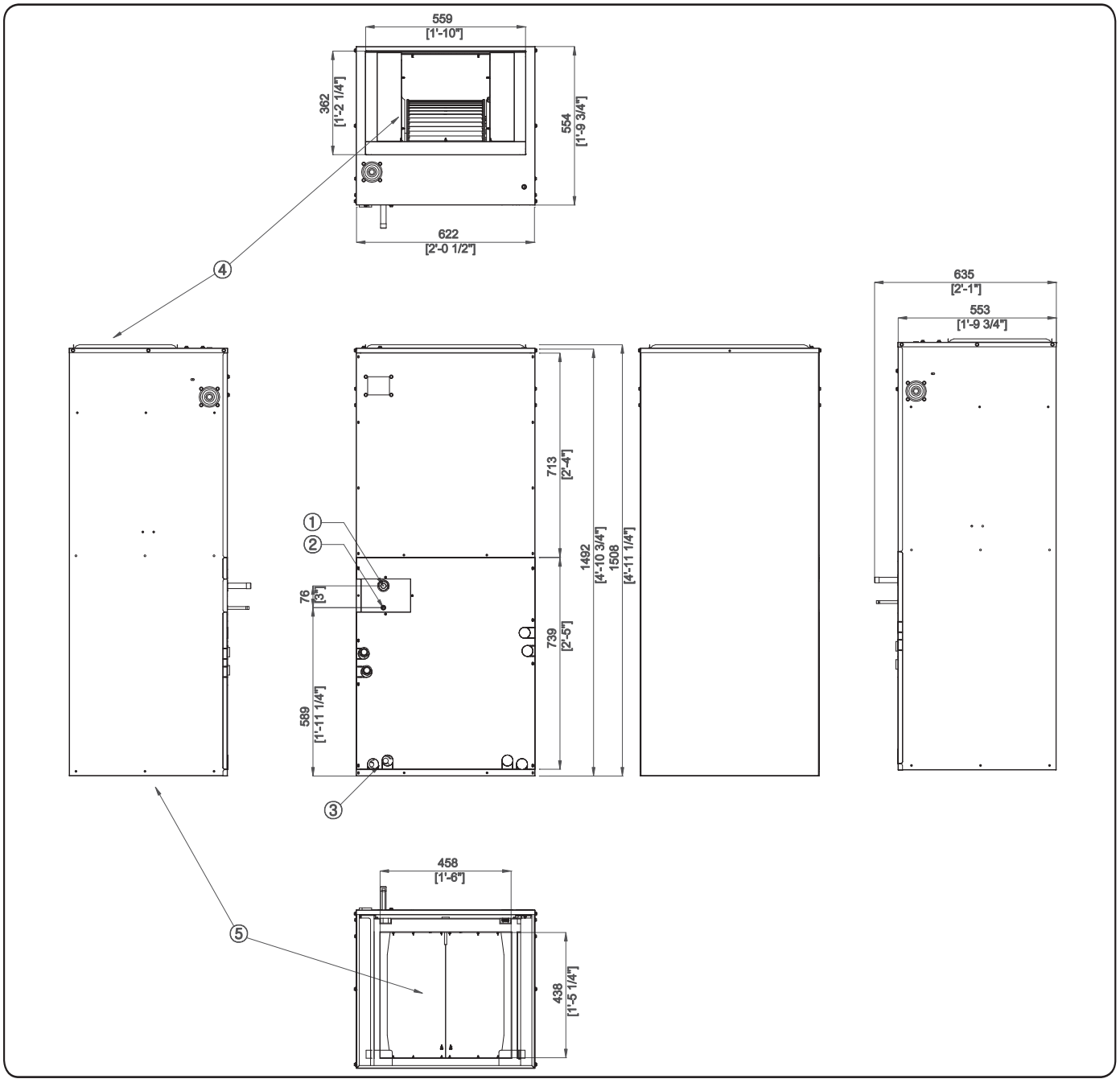
No.	Name	Description
1	Gas pipe connection	Φ15.88(5/8)
2	Liquid pipe connection	Φ9.52(3/8)
3	Drain pipe connection	FPT 3/4"
4	Air outlet	
5	Air intake	

4. Dimensional Drawing

Multi-position AHU

CNH42ZDB(AC042BNZDCH/AA), CNH48ZDB (AC048BNZDCH/AA)

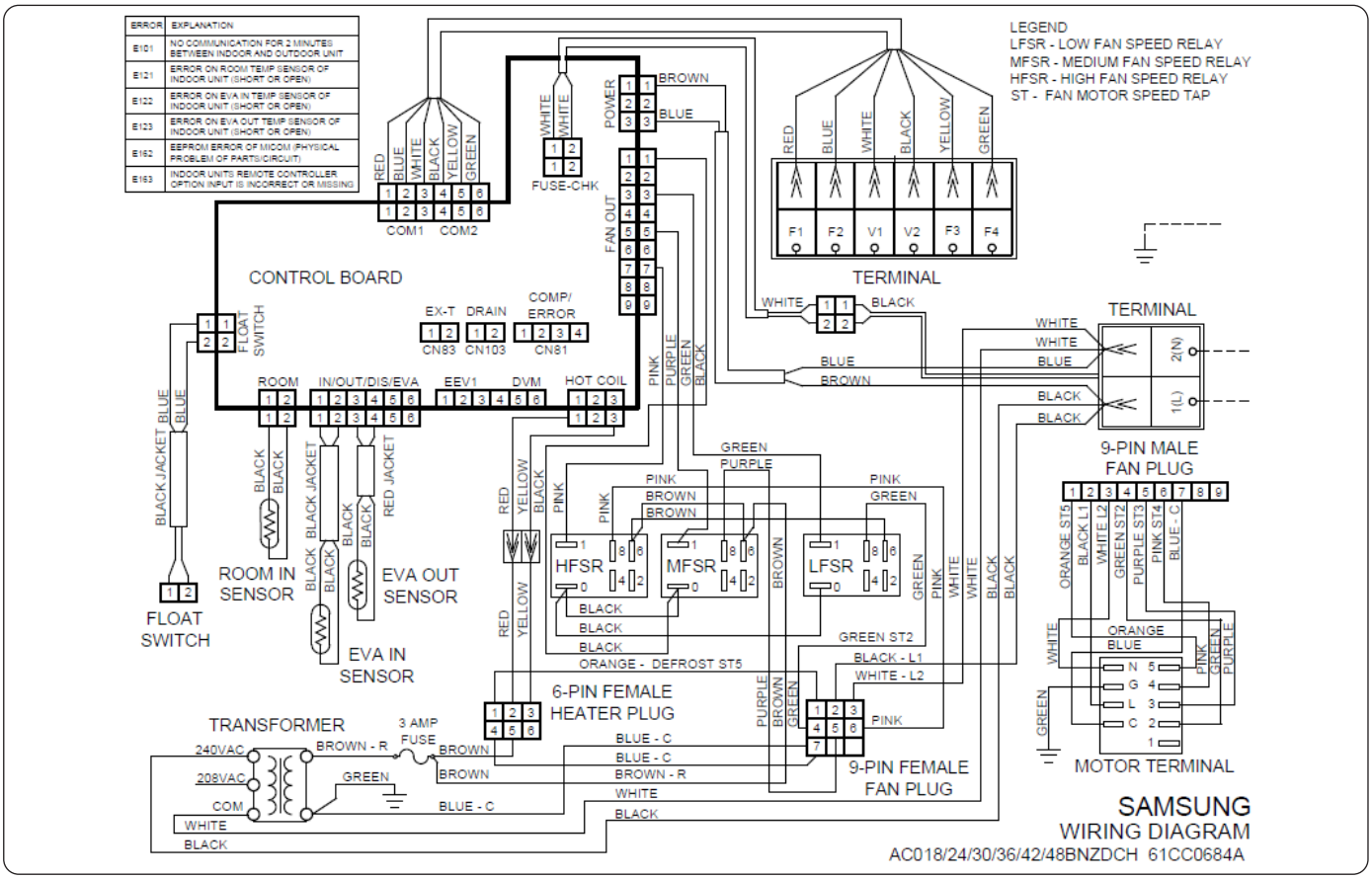
Units : mm [inches]



No.	Name	Description
1	Gas pipe connection	Φ15.88(5/8)
2	Liquid pipe connection	Φ9.52(3/8)
3	Drain pipe connection	FPT 3/4"
4	Air outlet	
5	Air intake	

5. Electrical Wiring Diagram

Multi-position AHU



CONTROL BOARD	Printed circuit board(MAIN)	MFSR	MEDIUM FAN SPEED RELAY	EVA-IN(10K)	Thermistor EVA IN
EX-T	EXTERNAL CONTROL	HFSR	HIGH FAN SPEED RELAY	EVA-OUT(10K)	Thermistor EVA OUT
LFSR	LOW FAN SPEED RELAY	ROOM(10K)	Thermistor ROOM	DISCHARGE(10K)	Thermistor DISCHARGE

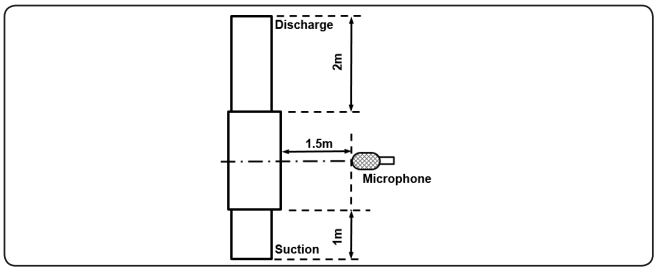
NOTE

- This wiring diagram applies only to the indoor unit.
- Colors BLK : black, BRN : brown, SKY-BLU : sky-blue, GRN/YEL : green/yellow, RED : red, YEL : yellow, ORG : orange, BLU : blue, WHT:white
- For connection wiring indoor-outdoor transmission F1-F2, indoor-wired remotecontroller transmission F3-F4, refer to the installation manual
- ⏚ Protective earth(screw)

6. Sound Data

Multi-position AHU

Sound Pressure level

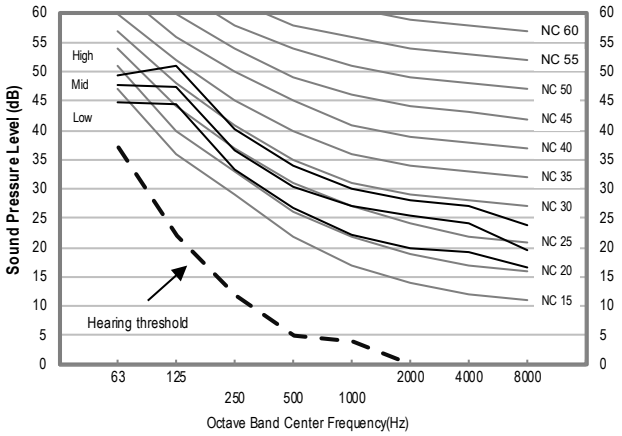


Unit: dB(A)

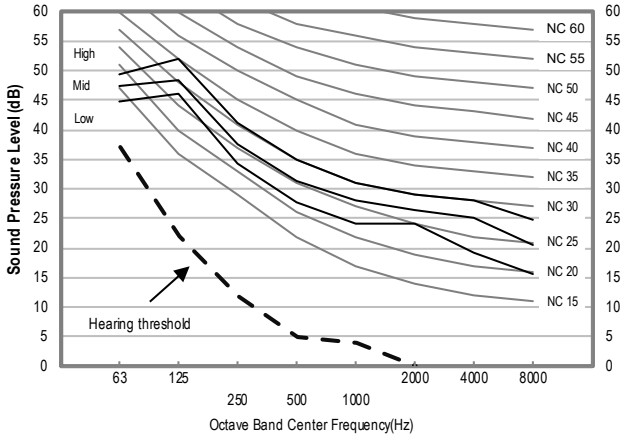
Model	High	Mid	Low
CNH18ZDB (AC018BNZDCH/AA)	40	37	34
CNH24ZDB (AC024BNZDCH/AA)	41	38	35
CNH30ZDB (AC030BNZDCH/AA)	41	38	35
CNH36ZDB (AC036BNZDCH/AA)	45	42	39

- NC Curve

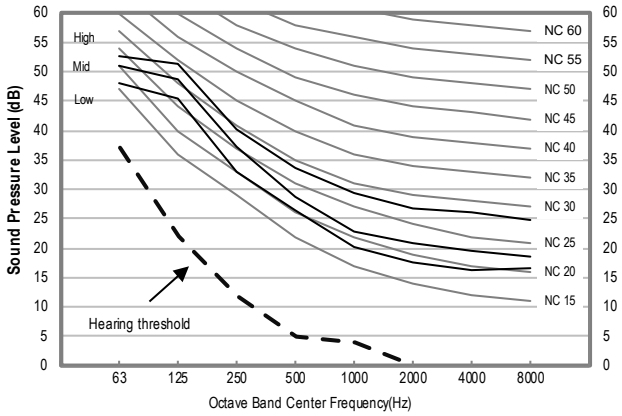
1) CNH18ZDB (AC018BNZDCH/AA)



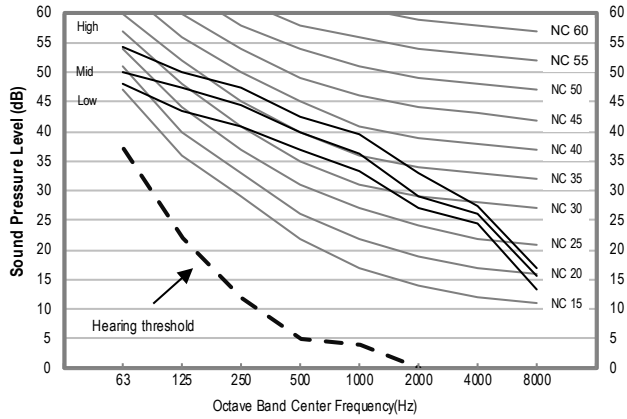
2) CNH24ZDB (AC024BNZDCH/AA)



3) CNH30ZDB (AC030BNZDCH/AA)



4) CNH36ZDB (AC036BNZDCH/AA)



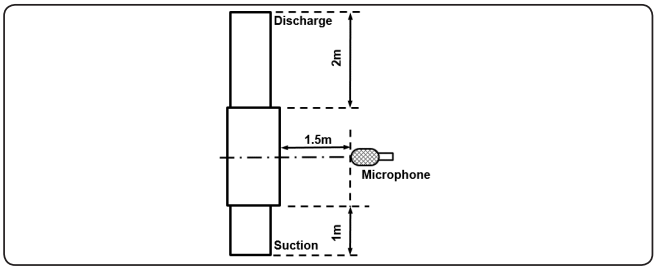
NOTE

- Specifications may be subject to change without prior notice.
  - 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

6. Sound Data

Multi-position AHU

Sound Pressure level

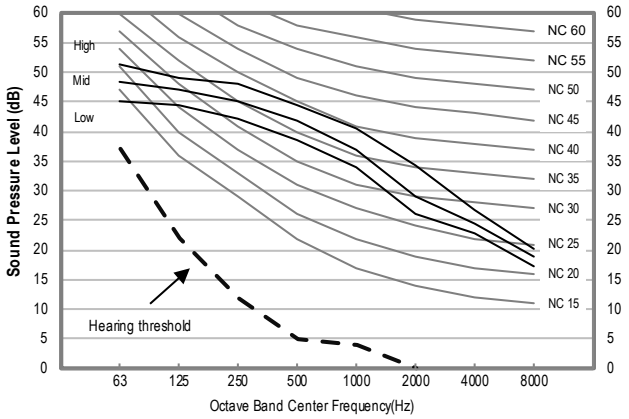


Unit: dB(A)

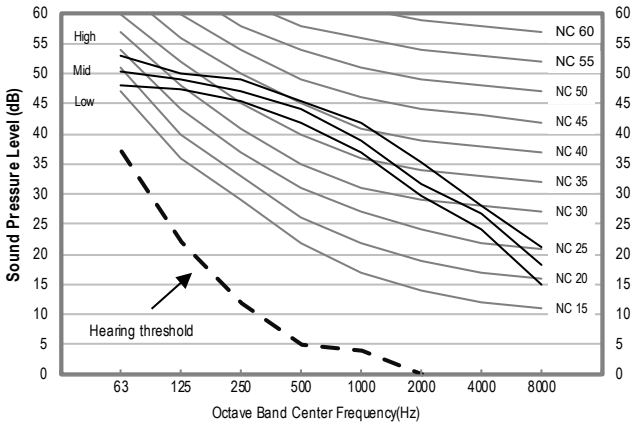
Model	High	Mid	Low
CNH42ZDB (AC042BNZDCH/AA)	46	43	40
CNH48ZDB (AC048BNZDCH/AA)	47	45	43

- NC Curve

5) CNH42ZDB (AC042BNZDCH/AA)



6) CNH48ZDB (AC048BNZDCH/AA)



NOTE

- Specifications may be subject to change without prior notice.
  - 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

6. Sound Data

Multi-position AHU

Sound Power level

NOTE

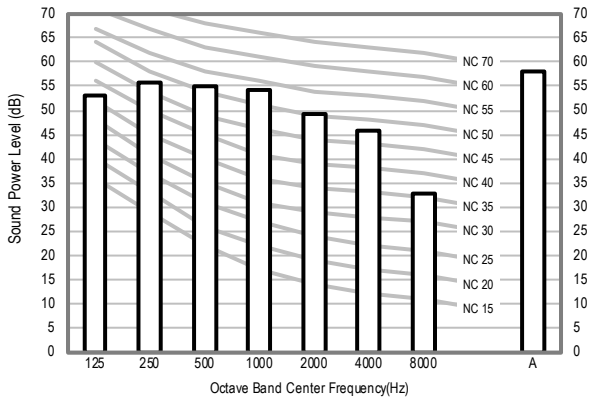
- Specifications may be subject to change without prior notice
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

Unit: dB(A)

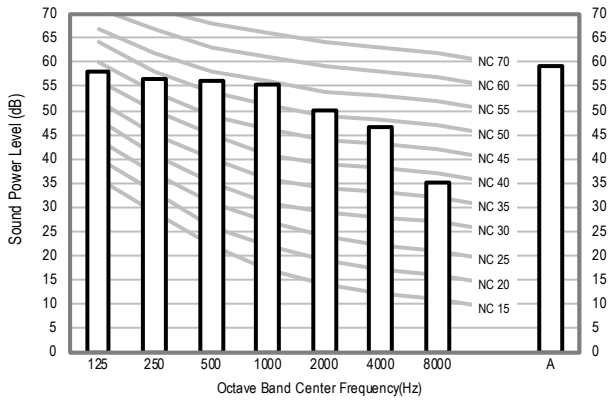
Model	Cooling
CNH18ZDB (AC018BNZDCH/AA)	58
CNH24ZDB (AC024BNZDCH/AA)	59
CNH30ZDB (AC030BNZDCH/AA)	59
CNH36ZDB (AC036BNZDCH/AA)	63

- NC Curve

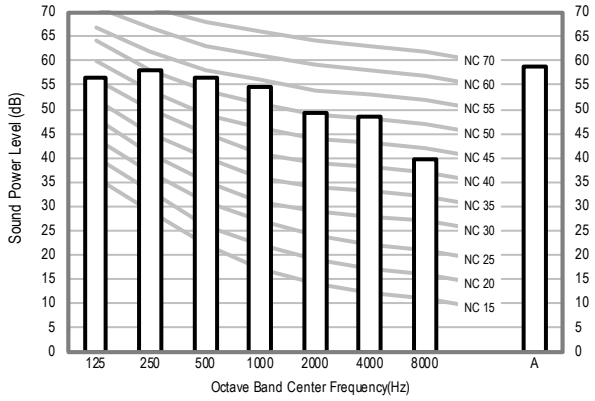
1) CNH18ZDB (AC018BNZDCH/AA)



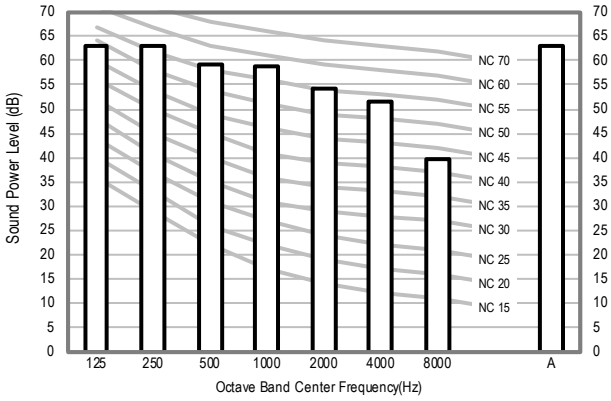
2) CNH24ZDB (AC024BNZDCH/AA)



3) CNH30ZDB (AC030BNZDCH/AA)



4) CNH36ZDB (AC036BNZDCH/AA)



6. Sound Data

Multi-position AHU

Sound Power level

NOTE

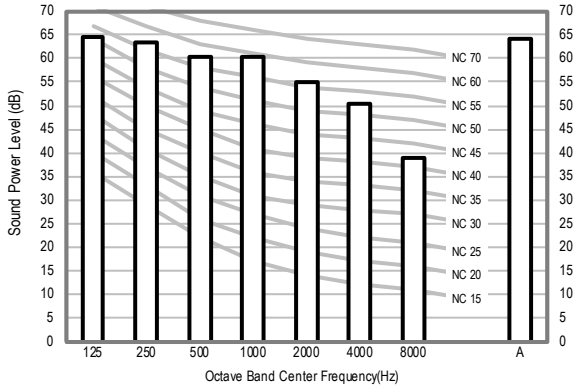
- Specifications may be subject to change without prior notice
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

Unit: dB(A)

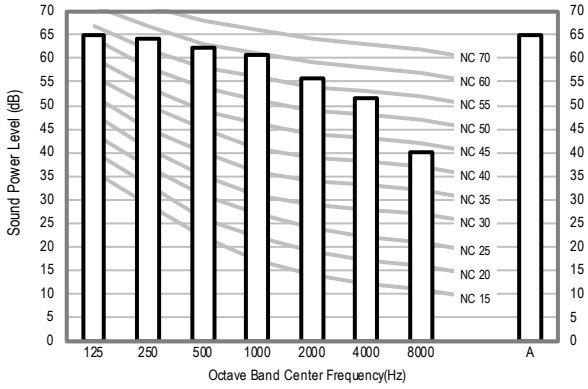
Model	Cooling
CNH42ZDB (AC042BNZDCH/AA)	64
CNH48ZDB (AC048BNZDCH/AA)	65

- NC Curve

5) CNH42ZDB (AC042BNZDCH/AA)



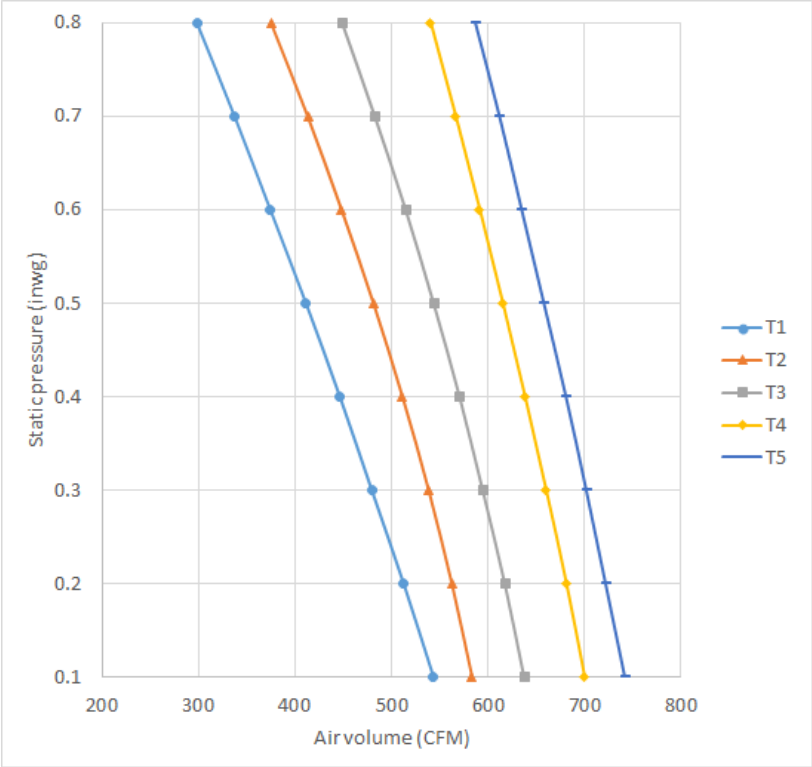
6) CNH48ZDB (AC048BNZDCH/AA)



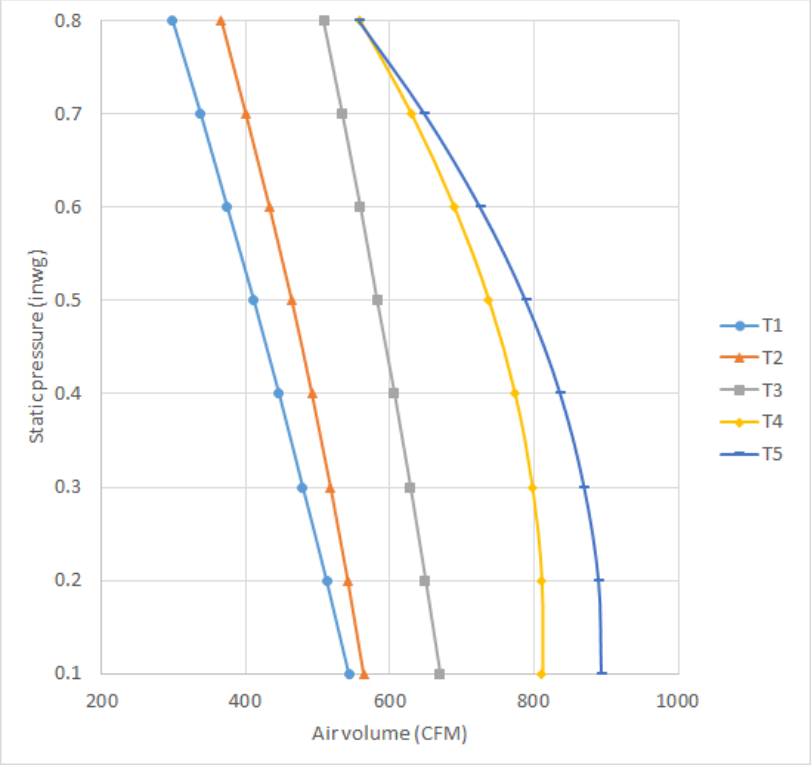
7. Fan characteristics (P-Q Curve)

Multi-position AHU

CNH18ZDB (AC018BNZDCH/AA)



CNH24ZDB (AC024BNZDCH/AA)

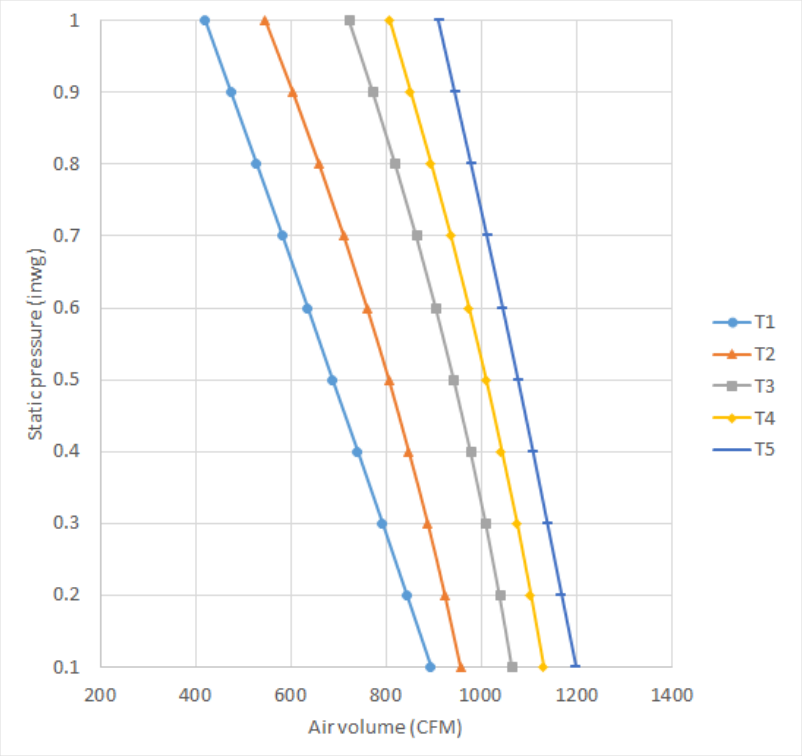


T1	Low speed tap
T2	Medium-low speed tap
T3	Medium speed tap
T4	Medium-high speed tap
T5	High speed tap

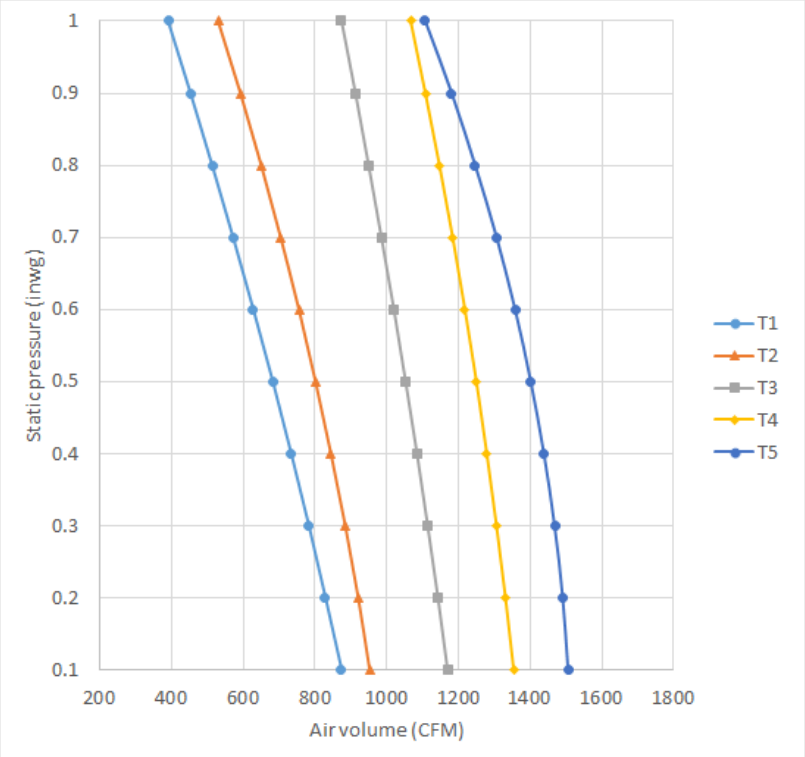
7. Fan characteristics (P-Q Curve)

Multi-position AHU

CNH30ZDB (AC030BNZDCH/AA)



CNH36ZDB (AC036BNZDCH/AA)

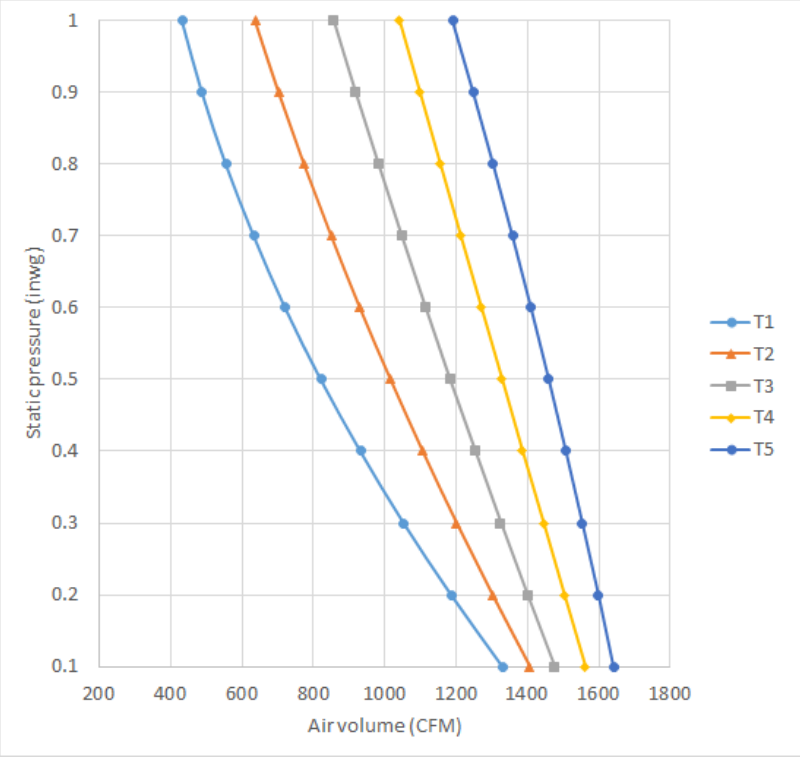


T1	Low speed tap
T2	Medium-low speed tap
T3	Medium speed tap
T4	Medium-high speed tap
T5	High speed tap

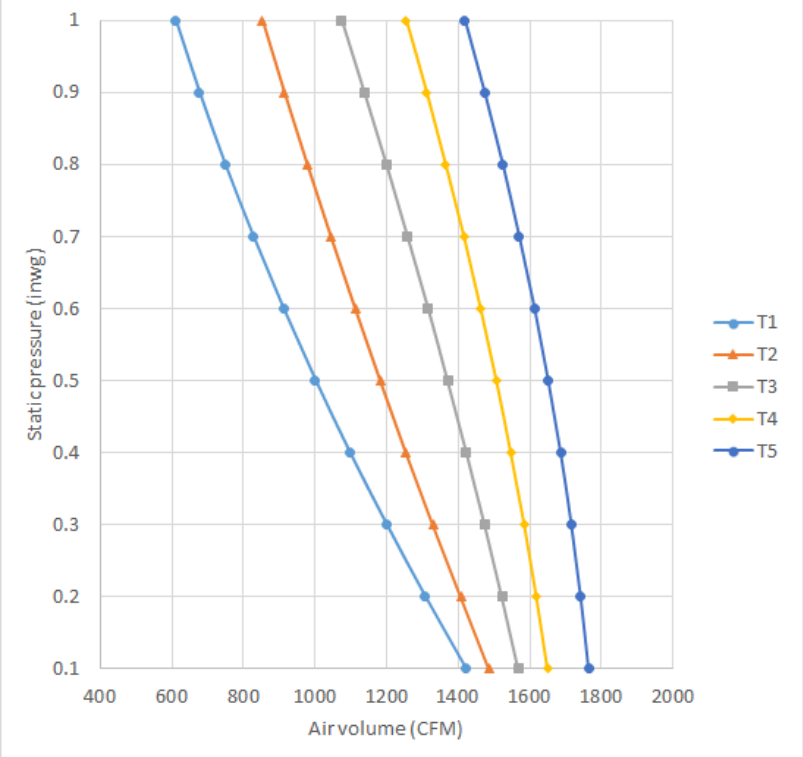
7. Fan characteristics (P-Q Curve)

Multi-position AHU

CNH42ZDB (AC042BNZDCH/AA)



CNH48ZDB (AC048BNZDCH/AA)



T1	Low speed tap
T2	Medium-low speed tap
T3	Medium speed tap
T4	Medium-high speed tap
T5	High speed tap

Outdoor Units

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7. Operation Range	47
8. Piping Diagram	48

1. Summary Table

Outdoor Units

Performance Characteristics

Capacity (Btu/h)	Model Code	Net Size (WxHxD inch)	Net Weight (lbs)	Airflow (CFM)	Sound Pressure Level (dBA)		Sound Power Level (dBA)
					Cooling	Heating	
18,000	CXH18ADB (AC018BXADCH/AA)	34.65 x 31.42 x 12.20	118.4	2,154	48	48	62
24,000	CXH24ADB (AC024BXADCH/AA)	37.01 x 39.29 x 12.99	158.7	2,684	50	52	65
30,000	CXH30ADB (AC030BXADCH/AA)	37.01 x 39.29 x 12.99	158.7	2,684	50	52	67
36,000	CXH36ADB (AC036BXADCH/AA)	37.01 x 47.64 x 12.99	189.6	3,532	52	54	69
42,000	CXH42ADB (AC042BXADCH/AA)	37.01 x 47.64 x 12.99	195.1	3,532	53	55	70
48,000	CXH48ADB (AC048BXADCH/AA)	37.01 x 47.64 x 12.99	195.1	3,532	56	58	72

NOTE

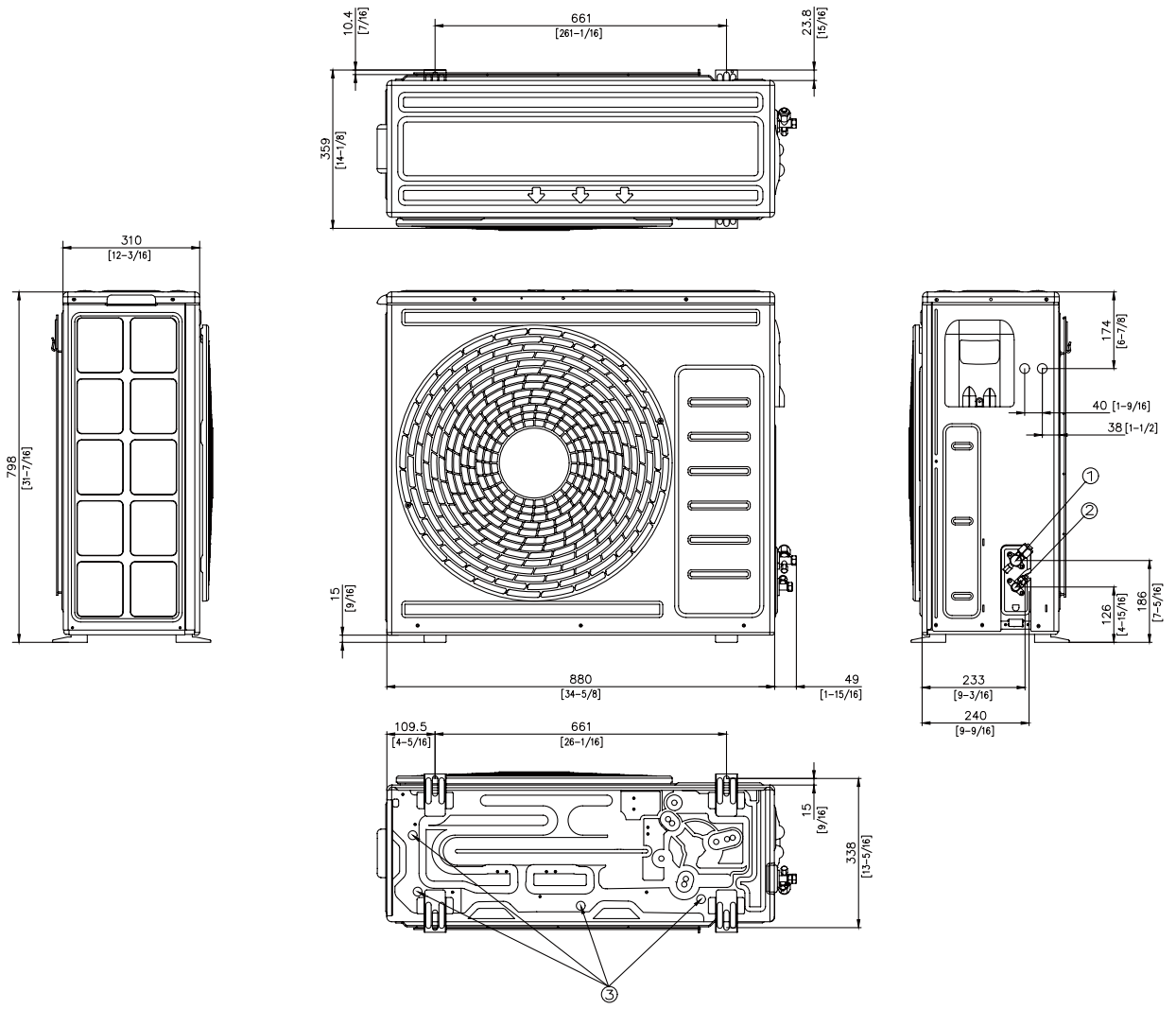
- Sound power level is based on cooling operation.

2. Dimensional Drawing

Outdoor Units

CXH18ADB (AC018BXADCH/AA)

Units : mm [inches]



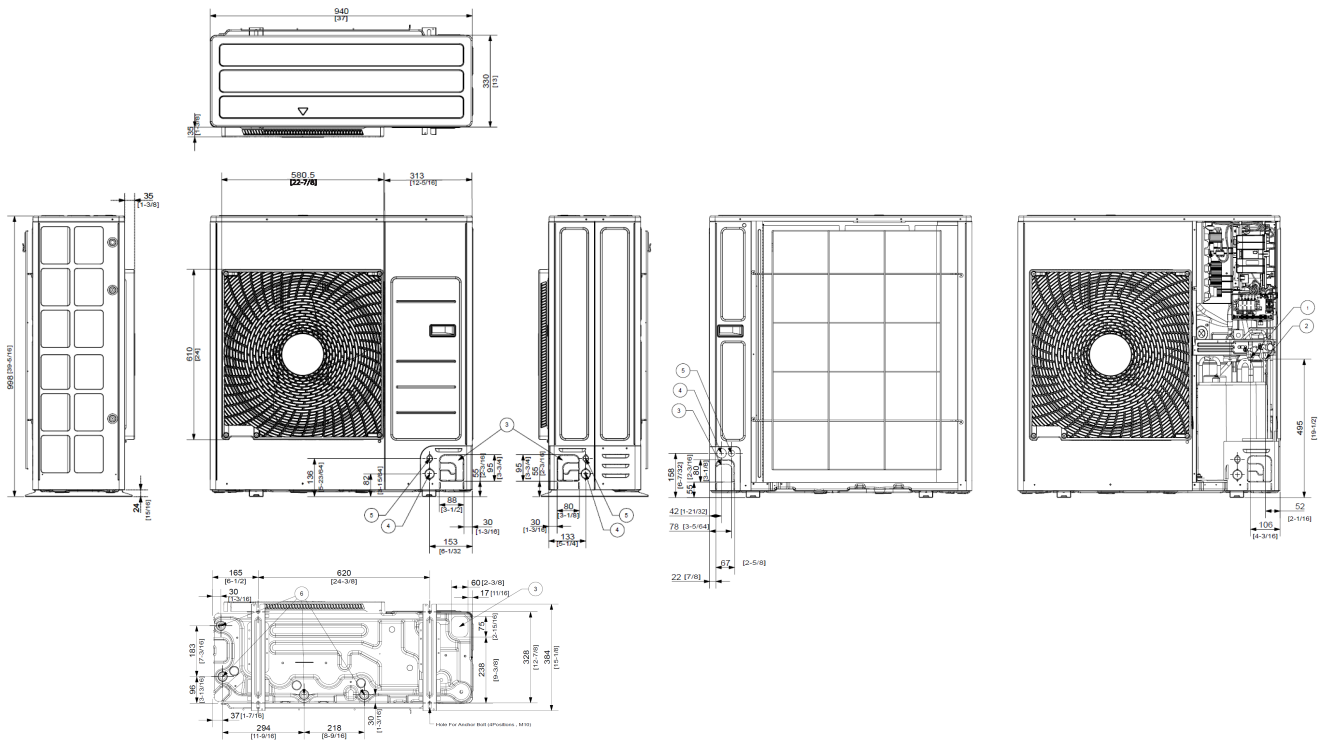
No.	Name	Description
1	Refrigerant liquid pipe	Φ 12.7mm(1/2")
2	Refrigerant gas pipe	Φ 6.35mm(1/4")
3	Drain hole	-

2. Dimensional D awing

Outdoor Units

CXH24ADB (AC024BXADCH/AA), CXH30ADB (AC030BXADCH/AA)

Units : mm [inches]



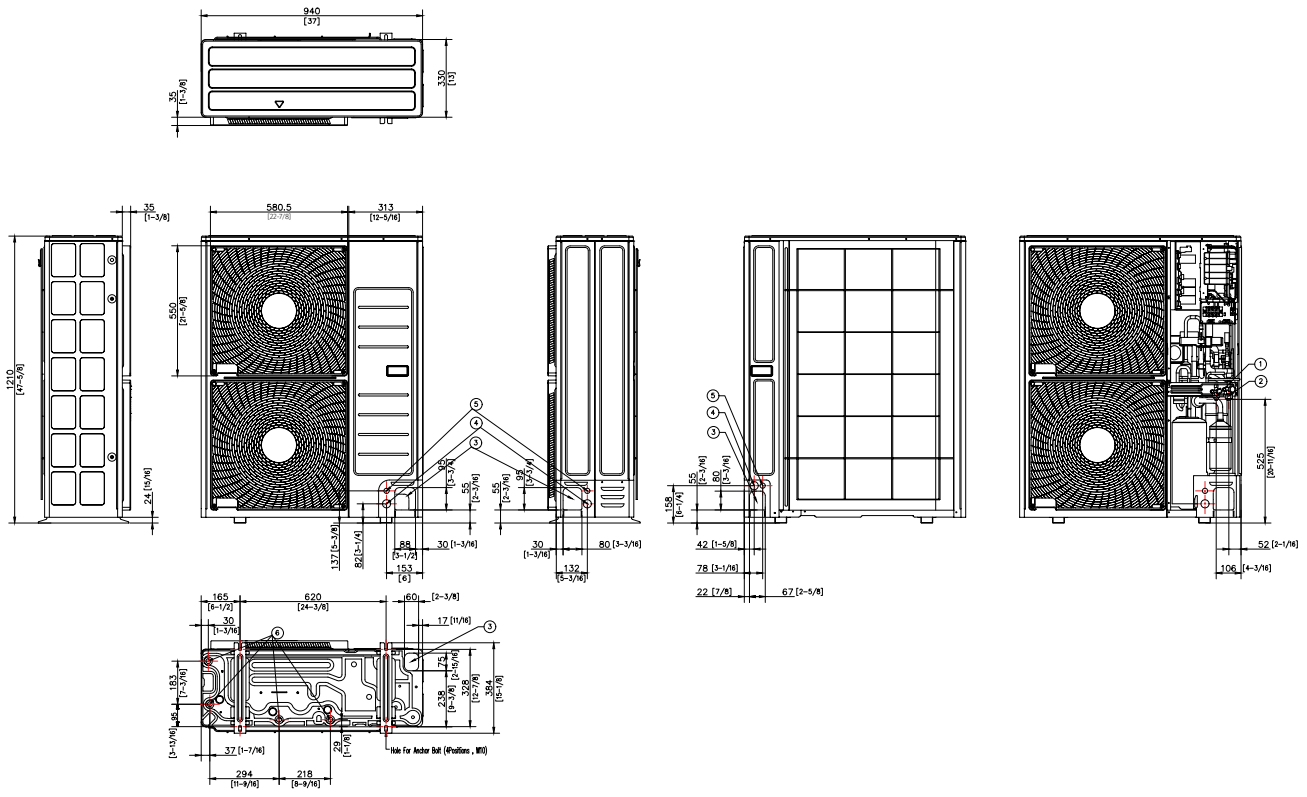
No.	Name	Description	
		CXH24ADB (AC024BXADCH/AA)	CXH30ADB (AC030BXADCH/AA)
1	Refrigerant liquid pipe	Φ 6.35mm(1/4")	Φ 9.52mm(3/8")
2	Refrigerant gas pipe	Φ 15.88mm(5/8")	
3	Piping intake knockout hole	Front / Side / Rear / Bottom	
4	Power wiring conduit	Front / Side / Rear , Φ 34mm(1-3/8")	
5	Communication wiring conduit	Front / Side / Rear , Φ 22mm(7/8")	
6	Drain Hole	-	Connect with the provided drain plug

2. Dimensional Drawing

Outdoor Units

CXH36ADB (AC036BXADCH/AA), CXH42ADB (AC042BXADCH/AA), CXH48ADB (AC048BXADCH/AA)

Units : mm [inches]



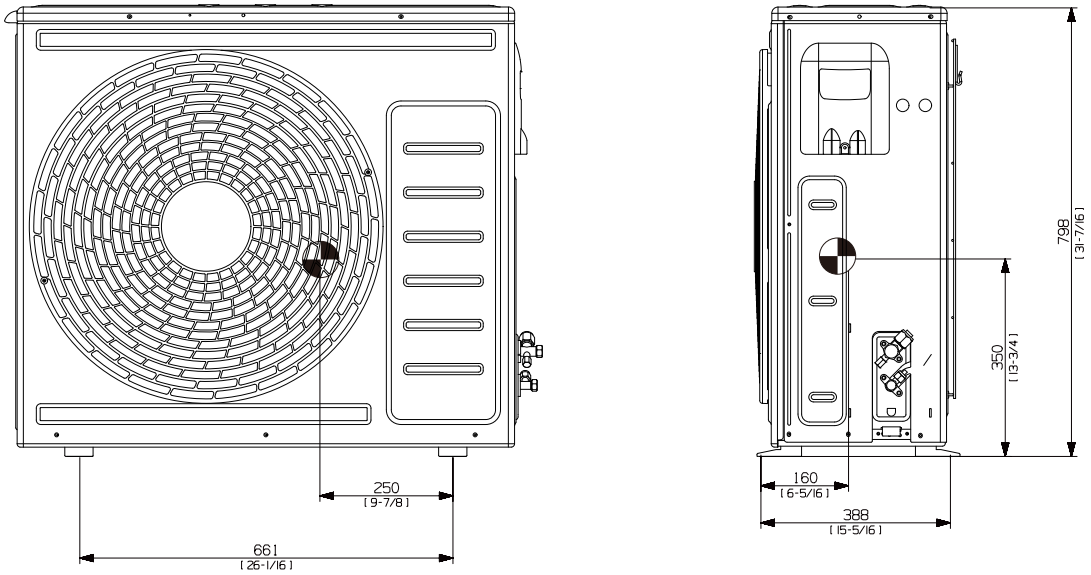
No.	Name	Description
1	Refrigerant liquid pipe	Φ 9.52mm(3/8")
2	Refrigerant gas pipe	Φ 15.88mm(5/8")
3	Piping intake knockout hole	Front / Side / Rear / Bottom
4	Power wiring conduit	Front / Side / Rear , Φ 34mm(1-3/8")
5	Communication wiring conduit	Front / Side / Rear , Φ 22mm(7/8")
6	Drain Hole	Connect with the provided drain plug

3. Center of Gravity

Outdoor Units

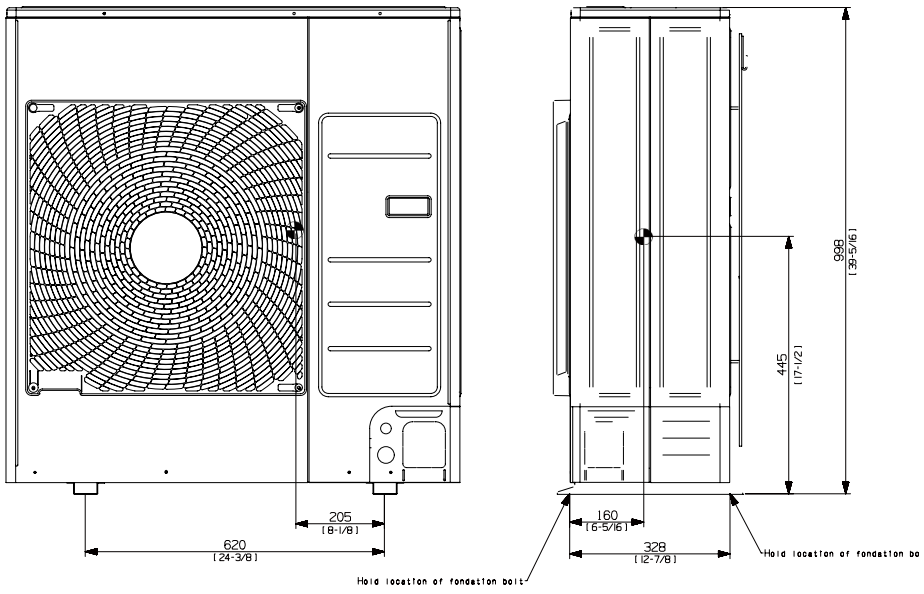
CXH18ADB (AC018BXADCH/AA)

Units : mm [inches]



CXH24ADB (AC024BXADCH/AA), CXH30ADB (AC030BXADCH/AA)

Units : mm [inches]

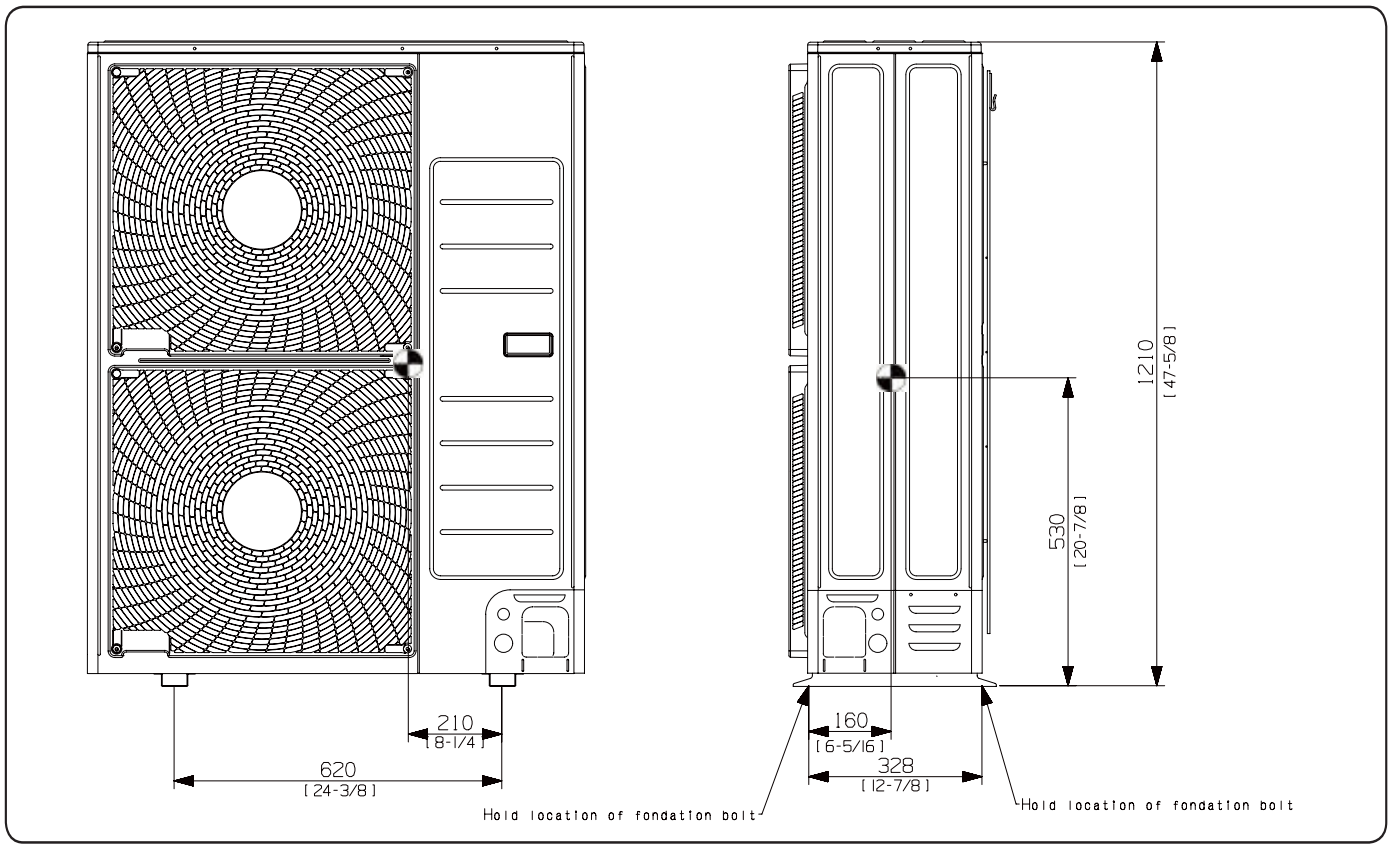


3. Center of Gravity

Outdoor Units

CXH36ADB (AC036BXADCH/AA), CXH42ADB (AC042BXADCH/AA), CXH48ADB (AC048BXADCH/AA)

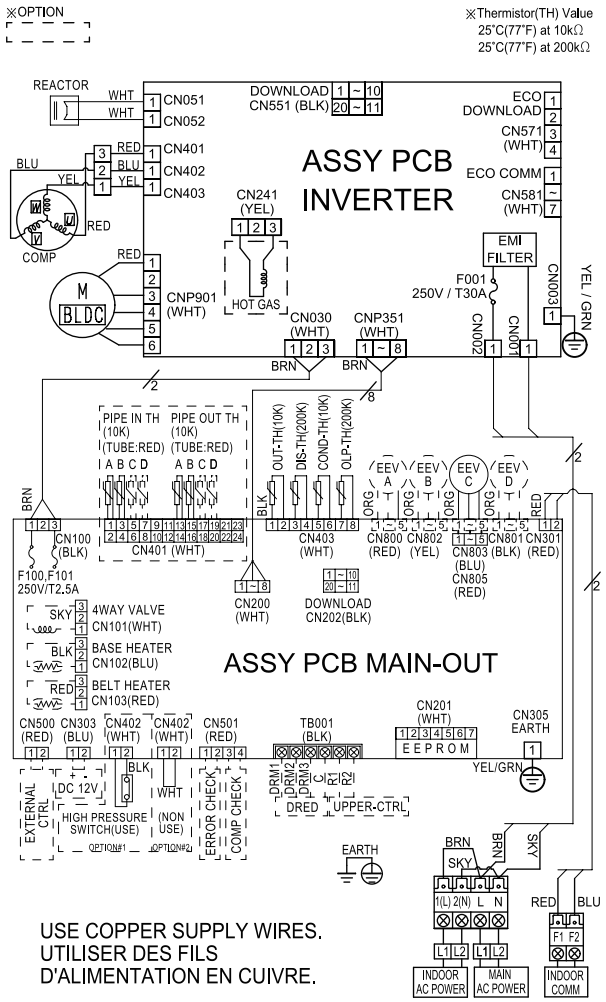
Units : mm [inches]



4. Electrical Wiring Diagram

Outdoor Units

CXH18ADB (AC018BXADCH/AA)



MAIN PCB	Printed circuit board(MAIN)	EEV	Electronic Expansion Valve
INVERTER PCB	Printed circuit board(INVERTER)	M-BLDC	BLDC Motor
OLT-TH(200K)	Thermistor OLP	DIS-TH(200K)	Thermistor DISCHARGE
OUT-TH(10K)	Thermistor AMBIENT	COND-TH(10K)	Thermistor CONDENSOR

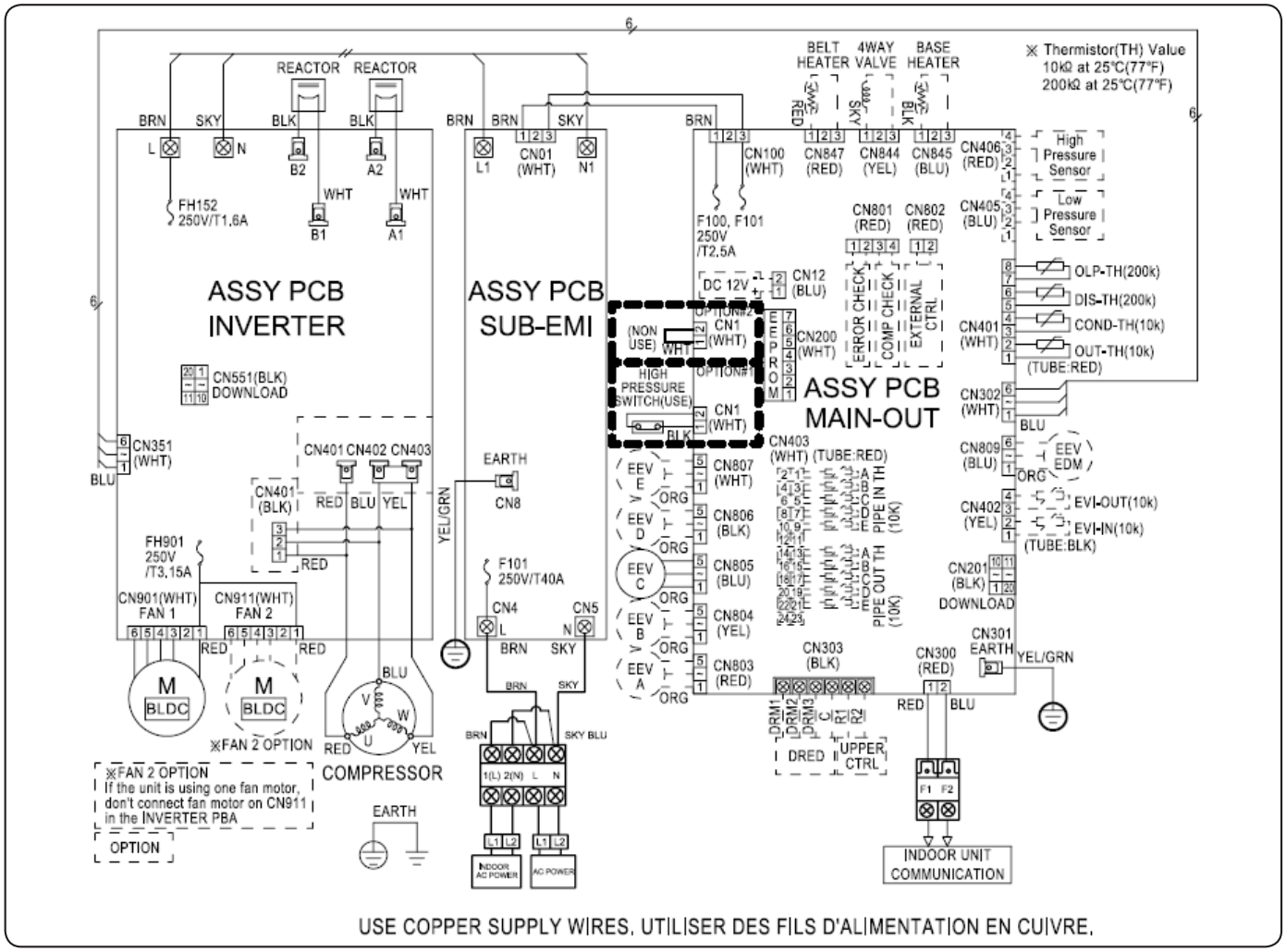
NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors blk: black, red: red, blu: blue, wht: white, yel: yellow, brn: brown, sky: skyblue
- When operating, don't short circuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor-outdoor transmission OF1-OF2, refer to the installation manual.
- ⏚ Protective earth(screw), ▭▭▭ : connector, N : The wire quantity

4. Electrical Wiring Diagram

Outdoor Units

CXH24ADB (AC024BXADCH/AA), CXH30ADB (AC030BXADCH/AA), CXH36ADB (AC036BXADCH/AA)
CXH42ADB (AC042BXADCH/AA), CXH48ADB (AC048BXADCH/AA)



MAIN PCB	Printed circuit board(MAIN)	EEV	Electronic Expansion Valve
INVERTER PCB	Printed circuit board(INVERTER)	M-BLDC	BLDC Motor
EMI	Printed circuit board(EMI)	DIS-TH(200K)	Thermistor DISCHARGE
OLT-TH(200K)	Thermistor OLP	COND-TH(10K)	Thermistor CONDENSOR
OUT-TH(10K)	Thermistor AMBIENT		

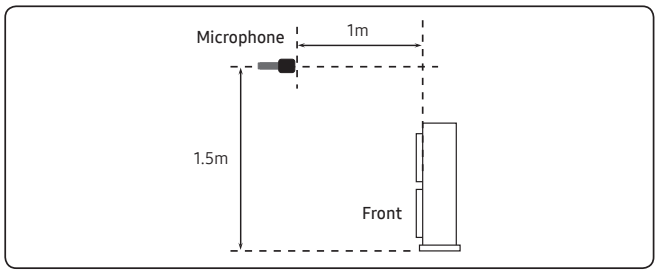
NOTE

- This wiring diagram applies only to the outdoor unit.
- Colors blk: black, red: red, blu: blue, wht: white, yel: yellow, brn: brown, sky: skyblue
- When operating, don't shortcircuit the protection device (High Pressure switch)
- For connection wiring indoor-outdoor transmission F1-F2, outdoor-outdoor transmission OF1-OF2, refer to the installation manual.
- ⏚ Protective earth(screw), ▭▭▭ : connector, N : The wire quantity

5. Sound Data

Outdoor Units

Sound Pressure level

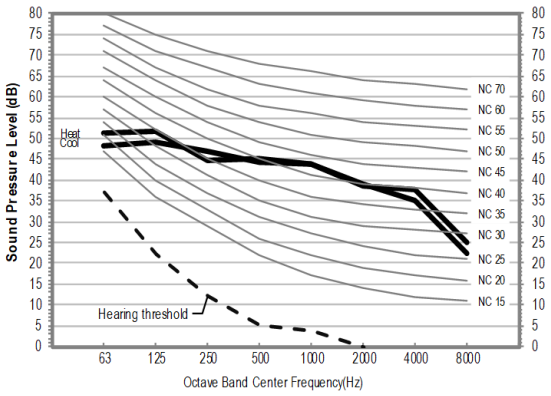


Unit: dB(A)

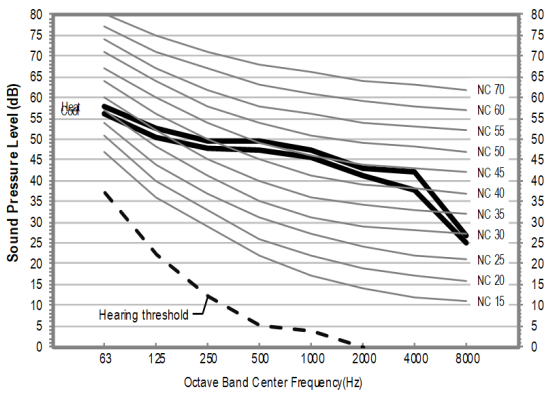
Model	Cooling	Heating
CXH18ADB (AC018BXADCH/AA)	48	48
CXH24ADB (AC024BXADCH/AA)	50	52
CXH30ADB (AC030BXADCH/AA)	50	52
CXH36ADB (AC036BXADCH/AA)	52	54

- NC Curve

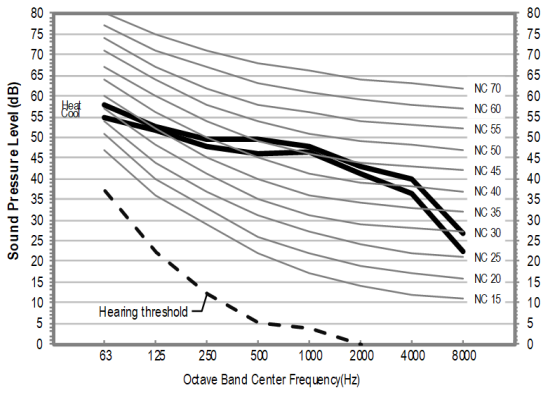
1) CXH18ADB (AC018BXADCH/AA)



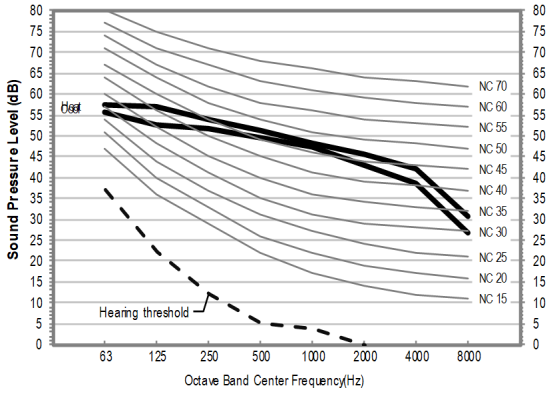
2) CXH24ADB (AC024BXADCH/AA)



3) CXH30ADB (AC030BXADCH/AA)



4) CXH36ADB (AC036BXADCH/AA)



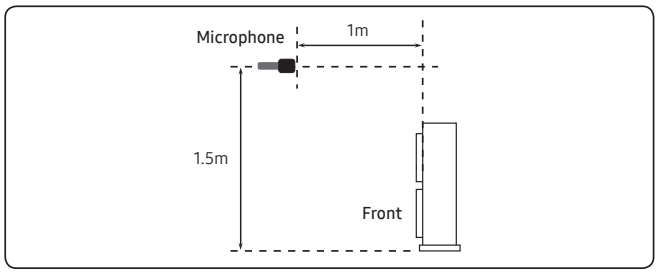
NOTE

- Specifications may be subject to change without prior notice.
  - 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

5. Sound Data

Outdoor Units

Sound Pressure level

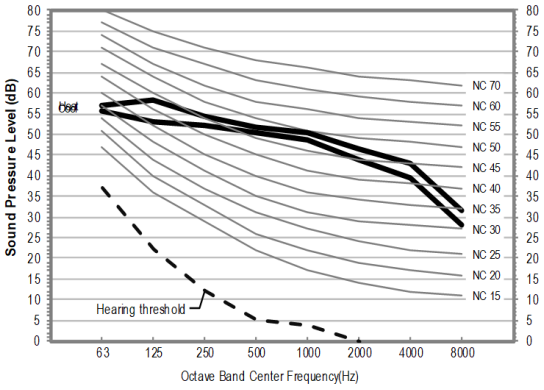


Unit: dB(A)

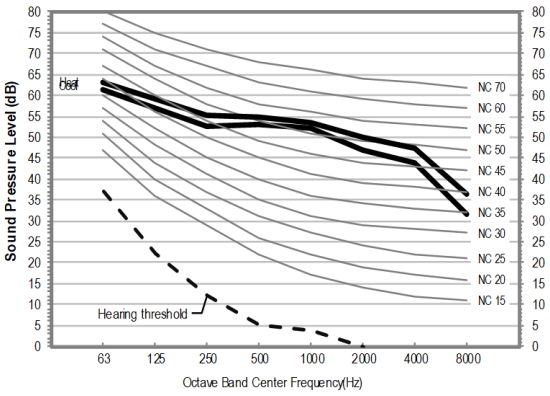
Model	Cooling	Heating
CXH42ADB (AC042BXADCH/AA)	53	55
CXH48ADB (AC048BXADCH/AA)	56	58

- NC Curve

1) CXH42ADB (AC042BXADCH/AA)



2) CXH48ADB (AC048BXADCH/AA)



NOTE

- Specifications may be subject to change without prior notice.
  - 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

5. Sound Data

Outdoor Units

Sound Power level

NOTE

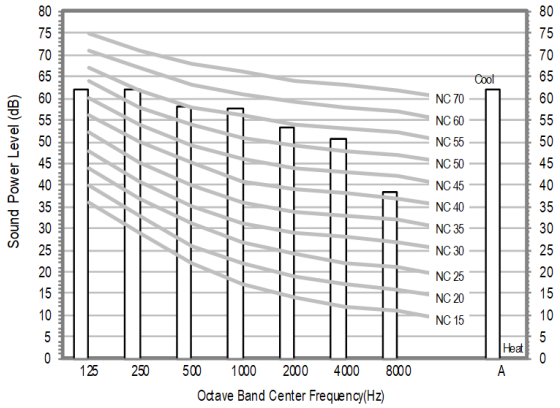
- Specifications may be subject to change without prior notice
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

Unit: dB(A)

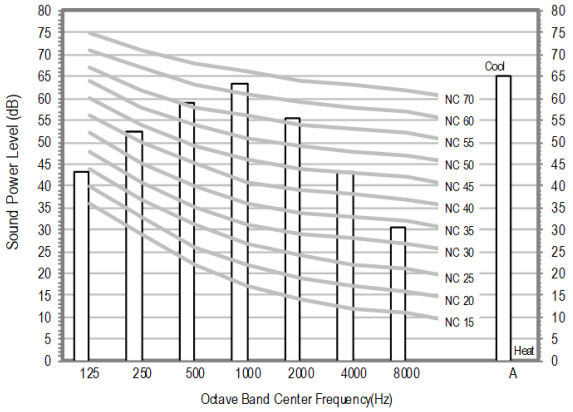
Model	Cooling
CXH18ADB (AC018BXADCH/AA)	62
CXH24ADB (AC024BXADCH/AA)	65
CXH30ADB (AC030BXADCH/AA)	67
CXH36ADB (AC036BXADCH/AA)	69

- NC Curve

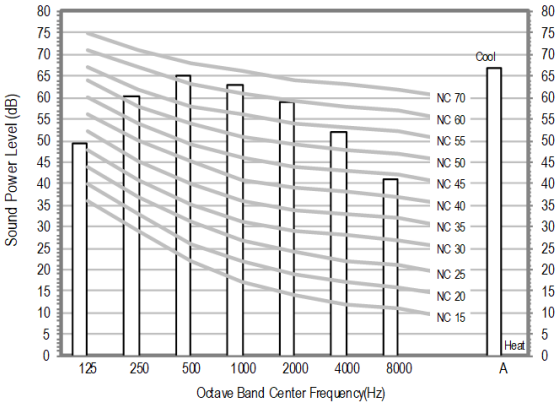
1) CXH18ADB (AC018BXADCH/AA)



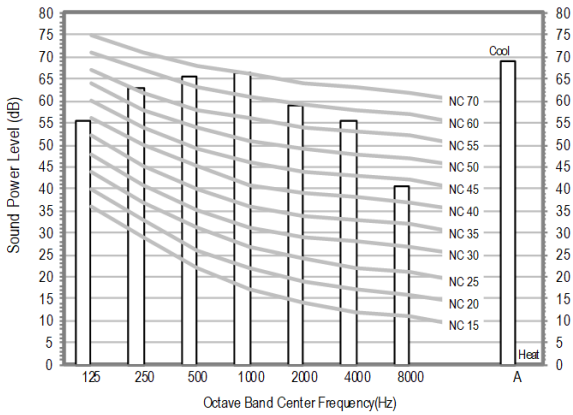
2) CXH24ADB (AC024BXADCH/AA)



3) CXH30ADB (AC030BXADCH/AA)



4) CXH36ADB (AC036BXADCH/AA)



5. Sound Data

Outdoor Units

Sound Power level

NOTE

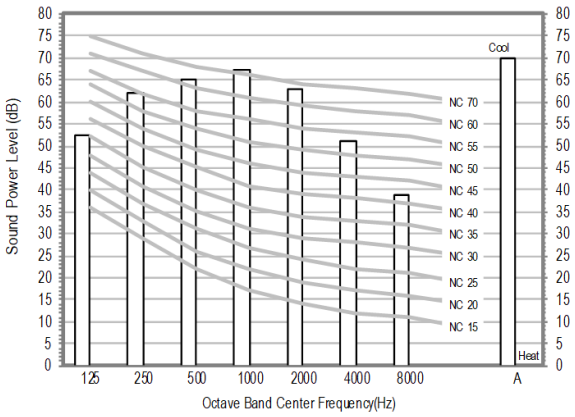
- Specifications may be subject to change without prior notice
  - Sound power level is an absolute value that a sound source generates.
  - dBA = A-weighted sound power level.
  - Reference power : 1pW.
  - Measured according to ISO 3741.

Unit: dB(A)

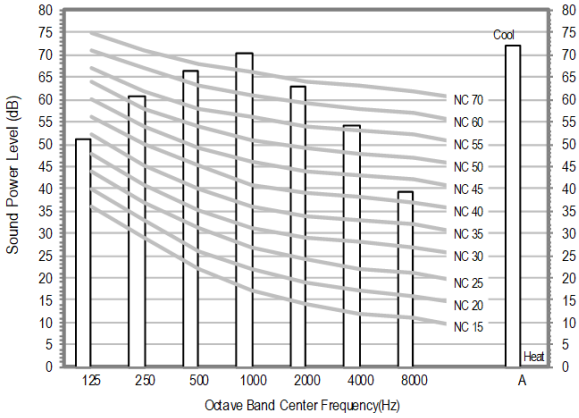
Model	Cooling
CXH42ADB (AC042BXADCH/AA)	70
CXH48ADB (AC048BXADCH/AA)	72

- NC Curve

1) CXH42ADB (AC042BXADCH/AA)



2) CXH48ADB (AC048BXADCH/AA)



6. Capacity Correction

Outdoor Units

CNH18ZDB(AC018BNZDCH/AA)+CXH18ADB(AC018BXADCH/AA)
CNH24ZDB(AC024BNZDCH/AA)+CXH24ADB(AC024BXADCH/AA)
CNH30ZDB(AC030BNZDCH/AA)+CXH30ADB(AC030BXADCH/AA)

Cooling



		Pipe Length (ft)									
		24.6	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0
Level Difference (ft)	98.4	-	-	-	-	-	0.94	0.93	0.92	0.91	0.90
	82.0	-	-	-	-	0.96	0.94	0.93	0.92	0.91	0.90
	65.6	-	-	-	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	49.2	-	-	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	32.8	-	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	16.4	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	0.0	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-16.4	1.00	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.90	0.88
	-32.8	-	0.98	0.97	0.96	0.95	0.94	0.92	0.91	0.89	0.87
	-49.2	-	-	0.97	0.96	0.94	0.93	0.92	0.90	0.88	0.85
	-65.6	-	-	-	0.95	0.94	0.93	0.91	0.89	0.87	0.83
	-82.0	-	-	-	-	0.94	0.92	0.91	0.89	0.86	0.82
	-98.4	-	-	-	-	-	0.92	0.90	0.88	0.85	0.80

Heating



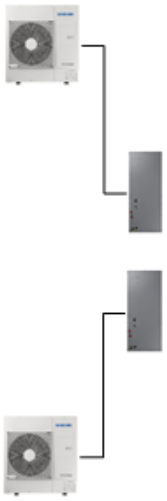
		Pipe Length (ft)									
		24.6	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0
Level Difference (ft)	98.4	-	-	-	-	-	0.94	0.93	0.92	0.91	0.90
	82.0	-	-	-	-	0.96	0.94	0.93	0.92	0.91	0.90
	65.6	-	-	-	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	49.2	-	-	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	32.8	-	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	16.4	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	0.0	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-16.4	1.00	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-32.8	-	0.99	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-49.2	-	-	0.98	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-65.6	-	-	-	0.97	0.96	0.94	0.93	0.92	0.91	0.90
	-82.0	-	-	-	-	0.96	0.94	0.93	0.92	0.91	0.90
	-98.4	-	-	-	-	-	0.94	0.93	0.92	0.91	0.90

6. Capacity Correction

Outdoor Units

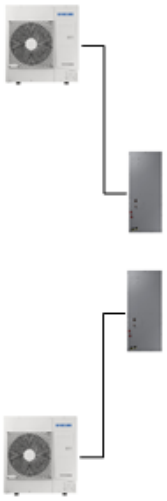
CNH36ZDB(AC036BNZDCH/AA)+CXH36ADB(AC036BXADCH/AA)
CNH42ZDB(AC042BNZDCH/AA)+CXH42ADB(AC042BXADCH/AA)
CNH48ZDB(AC048BNZDCH/AA)+CXH48ADB(AC048BXADCH/AA)

Cooling



		Pipe Length (ft)														
		16.4	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0	180.4	196.9	213.3	229.7	246.1
Level Difference (ft)	98.4	-	-	-	-	-	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	82.0	-	-	-	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	65.6	-	-	-	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	49.2	-	-	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	32.8	-	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	16.4	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	0.0	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-16.4	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
	-32.8	-	0.98	0.98	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.91	0.90	0.89	0.87	0.85
	-49.2	-	-	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.86	0.84
	-65.6	-	-	-	0.96	0.95	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.86	0.83
	-82.0	-	-	-	-	0.95	0.94	0.93	0.93	0.92	0.91	0.90	0.88	0.87	0.85	0.81
	-98.4	-	-	-	-	-	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.86	0.84	0.80

Heating



		Pipe Length (ft)														
		16.4	32.8	49.2	65.6	82.0	98.4	114.8	131.2	147.6	164.0	180.4	196.9	213.3	229.7	246.1
Level Difference (ft)	98.4	-	-	-	-	-	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	82.0	-	-	-	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	65.6	-	-	-	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	49.2	-	-	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	32.8	-	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	16.4	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	0.0	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-16.4	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-32.8	-	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-49.2	-	-	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-65.6	-	-	-	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-82.0	-	-	-	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88
	-98.4	-	-	-	-	-	0.96	0.95	0.94	0.93	0.92	0.91	0.91	0.90	0.89	0.88

7. Operation Range

Outdoor Units

Mode		Indoor temperature	Outdoor temperature	Indoor humidity
Cooling		18°C to 32°C (64°F to 90°F)	-18°C to 50°C (0°F to 122°F)	80% or less
Drying		18°C to 32°C (64°F to 90°F)	-18°C to 50°C (0°F to 122°F)	80% or less
Heating	~ 24kBtu/h	30°C(86°F) or less	-25°C to 24°C (-13°F to 75°F)	-
	30 ~ 48kBtu/h		-20°C to 24°C (-4°F to 75°F)	-

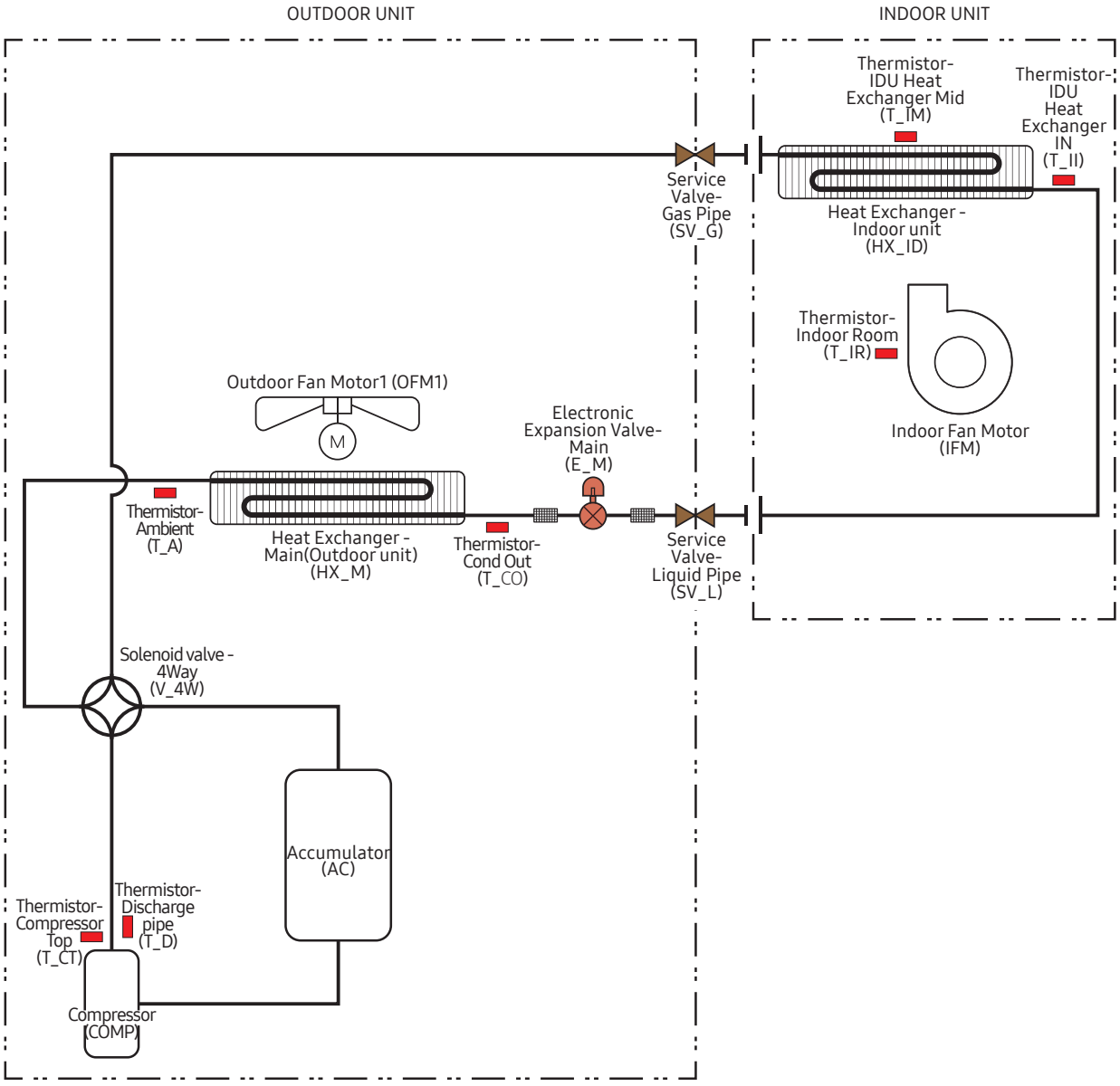
NOTE

- The assumed installation conditions are follows
  - The pipe length(including elbow) is 7.5m(24.6ft).
  - The level difference is 0 m.

8. Piping Diagram

Outdoor Units

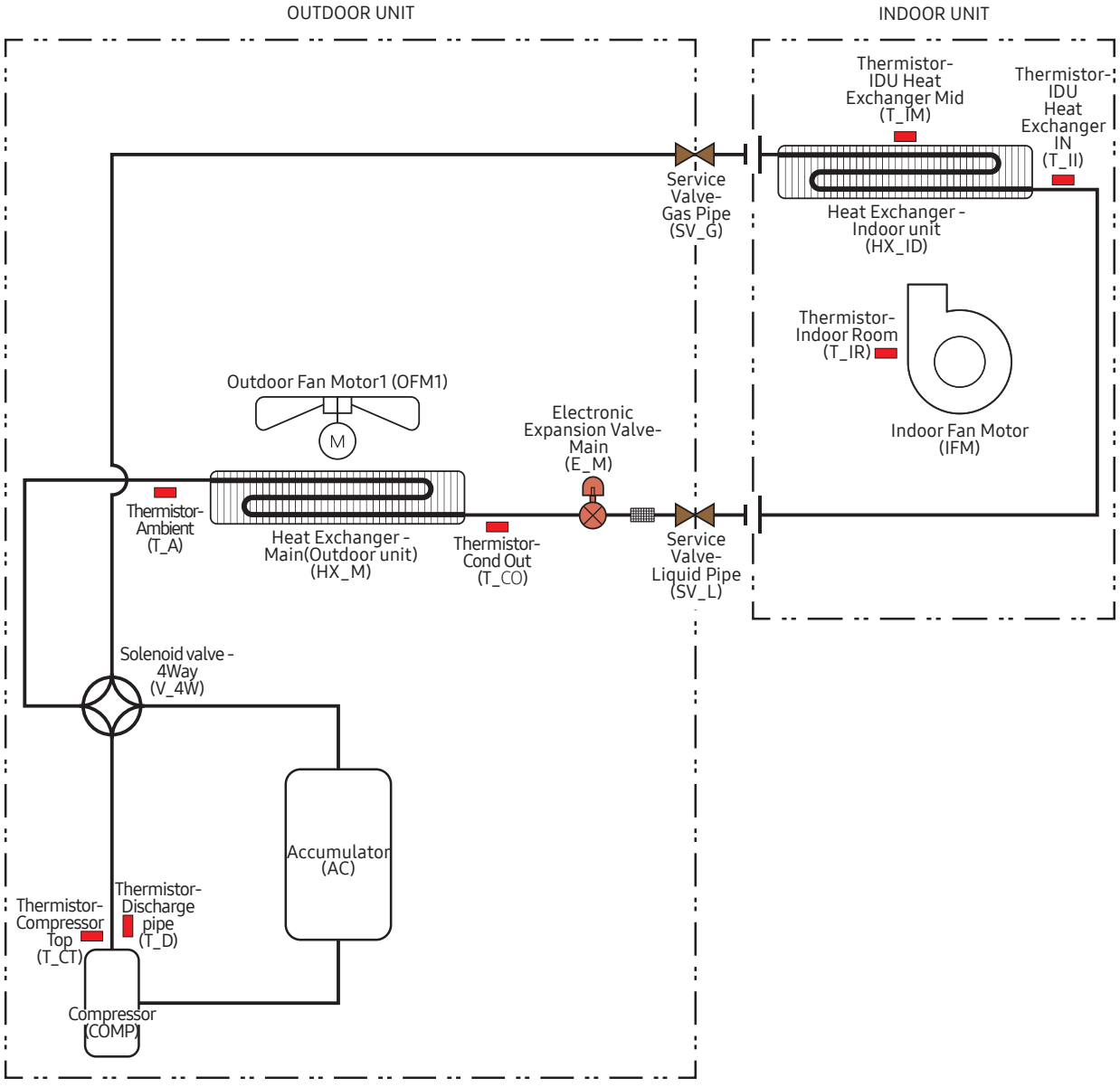
CNH18ZDB(AC018BNZDCH/AA)+CXH18ADB(AC018BXADCH/AA)



8. Piping Diagram

Outdoor Units

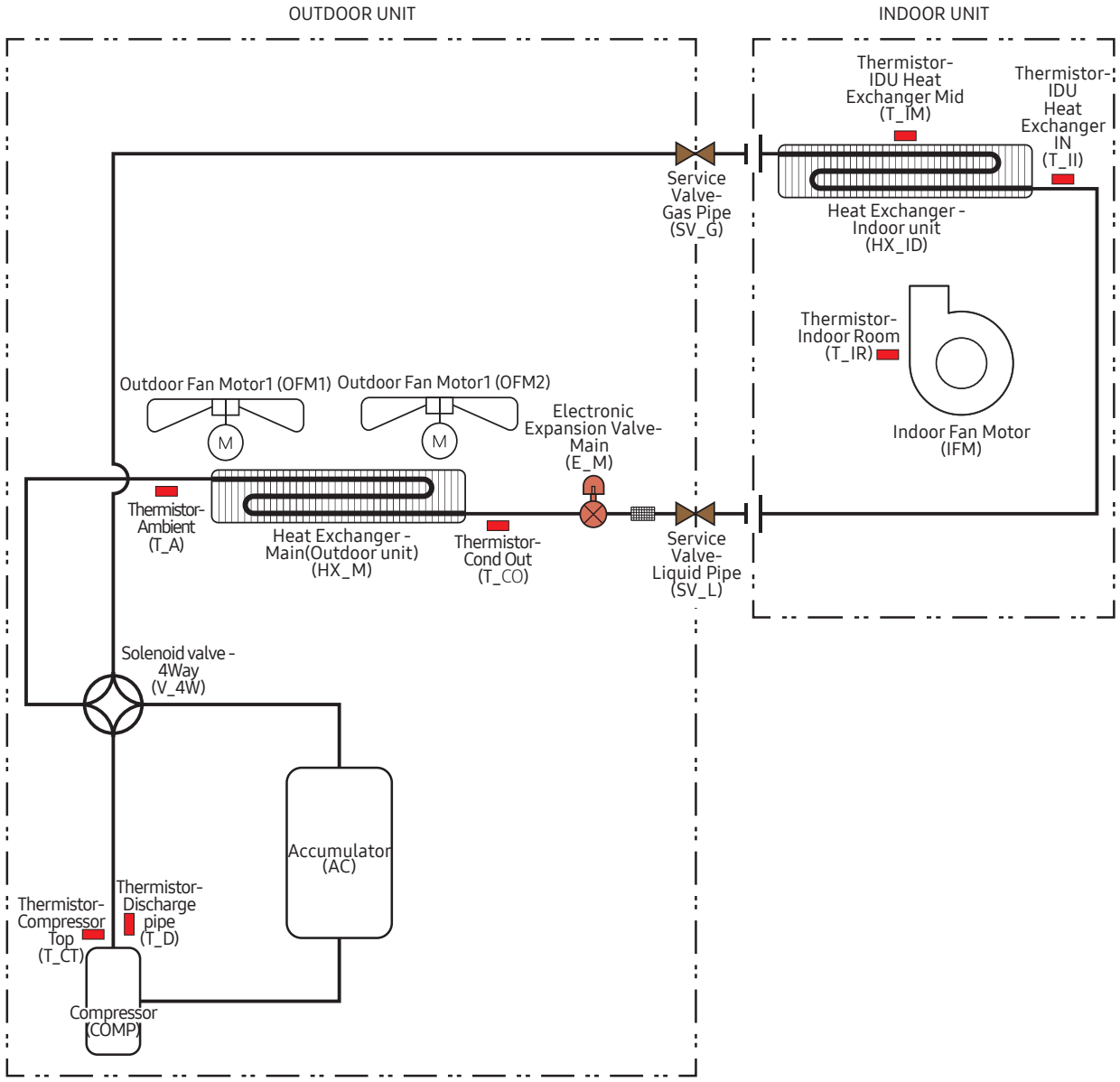
CNH24ZDB(AC024BNZDCH/AA)+CXH24ADB(AC024BXADCH/AA)
CNH30ZDB(AC030BNZDCH/AA)+CXH30ADB(AC030BXADCH/AA)



8. Piping Diagram

Outdoor Units

CNH36ZDB(AC036BNZDCH/AA)+CXH36ADB(AC036BXADCH/AA)
CNH42ZDB(AC042BNZDCH/AA)+CXH42ADB(AC042BXADCH/AA)
CNH48ZDB(AC048BNZDCH/AA)+CXH48ADB(AC048BXADCH/AA)



Installation

Multi-position AHU

Selecting the installation location

Decide the installation location, with the consideration of the following conditions, under user's approval.

- Place where airflow is not disturbed.
- Place on flat surface where the structure can bear the weight and vibration of the indoor unit. (If the structure is not strong enough, indoor unit may fall and be damaged or cause personal injury.)
- Place where sufficient space can be guaranteed for maintenance and other services.
- Place where condensation can be drained easily.
- Place that allows refrigerant pipe connection within allowable distance.
- Place where indoor unit will not be exposed to direct sunlight.
- Place that can keep the distance of at least 3.28 ft (1 m) between power/communication cable and any electronic devices (depending on the circumstances, problem may occur even if you secure 3.28 ft (1 m) of distance).

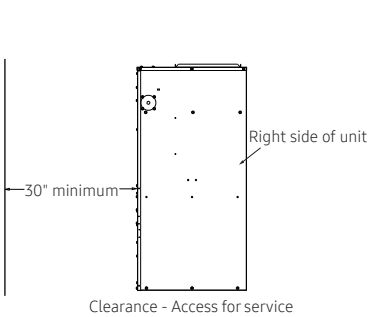
Indoor unit installation

Refrigerant pipe work must be done before installing the indoor unit.

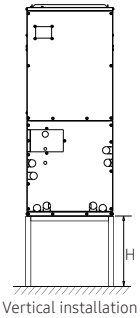
Location

Access for servicing is an important factor in the location of any air handler. Provide a minimum of 30 inches in front of the appliance for access to the control box, heating elements, blower and air filters. This access may be provided by a closet door or by locating the appliance so that a wall or partition is not less than 30 inches from the front access panel. Location is usually predetermined. Refer to figure below. Check with owner's or dealer's installation plans. If location has not been decided, consider the following in choosing a suitable location.

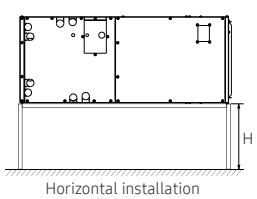
1. Select a location with adequate structural support, space for service access, and clearance for return and supply duct connections.
2. Normal operating sound levels may be objectionable if the air handler is placed directly over or under some rooms such as bedrooms, study, etc.
3. Caution should be taken to locate the unit so that supply and return air ducts are about the same length causing even air distribution of supply and return air to and from the living spaces.
4. Locate appliance where electrical supply wiring can be easily routed to main electrical panel and where electrical wiring will not be damaged.
5. Locate appliance where control wiring can be easily routed to the controller and where the wiring will not be damaged.
6. Locate appliance where refrigerant lines can be easily routed from the evaporator coil to the system.
7. Locate the appliance where condensate lines can be easily routed to an available drain. Be sure to route condensate drain piping so as not to obstruct access to the air filter.
8. The coil is installed in a draw-thru application and will create a negative pressure situation in the condensate drain system. To prevent condensate from being drawn into the blower it is recommended to trap the primary (Main) and secondary (Overflow) drain line. Refer to Drain Pipe and Drain Hose section in these instructions. If the secondary drain is not used, it must be capped. This unit has a connection terminal for drain system monitoring. Refer to Wiring Work section for information regarding connection of field-provided condensate overflow devicesin these instructions.
9. The draw-thru design will cause exterior surface of cabinet to sweat when unit is installed in a non-conditioned space such as an attic or garage. Installer must provide protection such as full size auxiliary drain pan on all units installed in a non-conditioned space to prevent damage from condensation runoff. Some states, cities and counties require additional insulation to be installed on the exterior casing of the air handler to prevent sweating. Refer to the state, city, county or local code for insulation requirement to be sure the installation is in compliance. It is recommended that air handlers installed in non-conditioned spaces be insulated on the exterior of the entire cabinet, including the front access panel with one (1) inch thick fiberglass with the vapor barrier on the outside.
10. Ensure sufficient space for the bottom of the product (H dimension) so that a downward slope of 1/100 can be maintained for drain piping, as described for the intake duct installation and in "Drain pipe installation".



Clearance - Access for service



Vertical installation



Horizontal installation

Installation

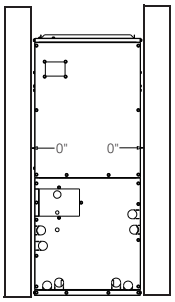
Multi-position AHU

This appliance is approved for zero (0) inches clearance to combustible material on any part of the air handler exterior casing and the inlet or outlet ducts providing NO electric heater is being used. There is a one (1) inch clearance on the supply plenum and supply air duct when an electric heater is installed in the appliance. Refer to Table below for clearance to combustibles information.

Top (inches)	Back (inches)	Sides (inches)	Front of unit		Duct (inches)
			Alcove (inches)	Closet (inches)	
0	0	0	30	6	1 *

* when electric heat kit accessory is installed

Return air requirements



Return Air Requirements

In order for the air handler to work properly, a closet or alcove must have a certain total free area opening for the return air.

For A/C and HP Air Handlers 1/3 HP Blower Motor

Minimum 200 in^2 free area opening

- Use Return Grille that can supply sufficient air to ensure proper performance.

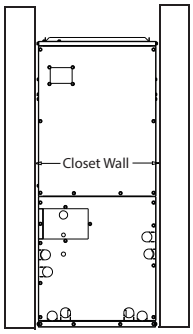
For A/C and HP Air Handlers 1/2 HP Blower Motors

- Minimum 250 in^2 free area opening
- Use Return Grille that can supply sufficient air to ensure proper performance.

For A/C and HP Air Handlers with Electric Heat use 3/4 HP Blower Motor

- Minimum 390 in^2 free area opening
- Use Return Grille that can supply sufficient air to ensure proper performance.

The return air opening can be located in the floor, on a closet front door or in a side wall above the air handler casing. If opening for the return air is located in the floor, side walls, or closet door anywhere below the appliance casing, a 6 inch minimum clearance between the appliance and the wall or door must be provided on the side where the return is located to provide for proper air flow. The 6 inch minimum clearance is not required if there is a return grille installed above the appliance casing, providing the grille has a sufficient return air opening.



Typical Closet Installations

Provisions shall be made to permit the air in the rooms and the living spaces to return to the air handler. Failure to comply may cause a reduction in the amount of return air available to the blower, causing reduced air flow resulting in improper heating and cooling of the living space. The reduced air may cause the air flow handler to cycle on the limit causing premature heating element failure (if electric heat kits are installed).

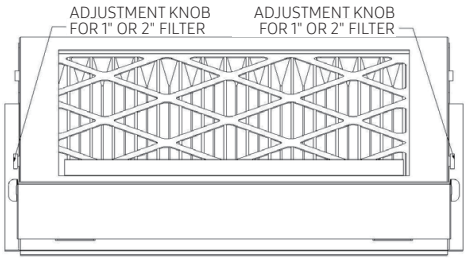
Upflow Accessory Filter Box Kit

An accessory filter box kit can be used on the return air end of the air handler when configured in the upflow position. The filter kit is placed over the return plenum in the floor and sealed to the plenum using sealant or caulking material and/or tape. The air handler is placed on top of the return filter box and the return opening sealed to prevent leaks.

Installation

Multi-position AHU

NOTE Make sure the flow arrow on the air filter is pointing towards the coil.



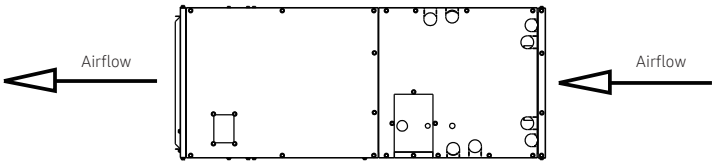
Accessory Air Filter Box for 1" or 2" Air Filters. Filter Size Adjustment knob is on both sides.

FILTER BASE ASSEMBLY KIT MODEL NUMBERS - FIELD INSTALLED, PURCHASED SEPARATELY

VFB-1 – 16" X 20" X 2" Small Cabinet (12/18/24K)
VFB-2 – 20" X 20" X 2" Medium Cabinet (30/36K)
VFB-3 – 20" X 24" X 2" Large Cabinet (42/48K)

Arrangement:

Unit is shipped from the factory arranged to be installed in an upflow or horizontal left (right to left air flow) position. Horizontal left means when the unit is laid on its side and you are facing the unit, the supply air opening is to the left and the return opening is to the right. These models are field convertible to a horizontal right (left to right) air flow position.



Horizontal left arrangement

Upflow application

In an upflow installation the discharge outlet is at the top. Care should be taken to insure unit is level to permit proper condensate drainage. Normal upflow installation will be in a closet or basement. If installed in a closet, it must have a platform framed in. The platform must have an opening centered in the closet that measures at least 12 inches in height from the floor. A filter frame and filter can be used that covers the opening and is sealed to prevent air by-passing the filter. A filter grille can be used that is located as described in RETURN AIR REQUIREMENTS section. The minimum filter size is shown in the table below.

Standard throw away air filter @ 300 ft/min or less	Pleated Air Filter @ 500 ft/min or less
800 CFM = 20 x 20 x 1	800 CFM = 16 x 16 x 1
1000 CFM = 20 x 25 x 1	1000 CFM = 18 x 20 x 1
1200 CFM = 20 x 30 x 1	1200 CFM = 20 x 20 x 1
1400 CFM = 25 x 30 x 1	1400 CFM = 20 x 20 x 1
1600 CFM = 25 x 30 x 1	1600 CFM = 20 x 25 x 1
1800 CFM = 30 x 30 x 1	1800 CFM = 20 x 30 x 1 or two 20 x 15 x 1
2000 CFM = 30 x 40 x 1 or two 30 x 20 x 1	2000 CFM = 20 x 30 x 1 or two 20 x 15 x 1
2400 CFM = 30 x 40 x 1 or two 30 x 20 x 1	2400 CFM = 25 x 30 x 1 or two 14 x 30 x 1

Another option is to use the Filter Base Accessory Kit. This filter base is placed on the closet floor and secured with screws. The unit is placed on top of the filter base and secured to the base with screws. Use seal strip, tape or calking to seal between the unit and the base.

Connect the supply air outlet to a plenum to the top of the unit and secure it with screws. Use a Non-tape sealant such as mastic or an aerosol sealant to seal duct leakage. If installed in a basement, run supply and return duct work in accordance with local codes. Use a Non-tape sealant such as mastic or an aerosol sealant to seal duct leakage.

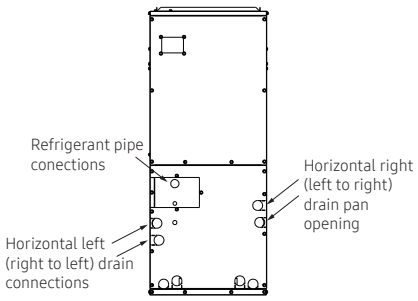
Installation

Multi-position AHU

Horizontal application

Horizontal applications will normally be used in an attic or crawl space. This type of installation requires supply air plenum or duct to be connected to the supply collar and a return air plenum or duct be attached to the unit inlet collar. The supply ducts will be connected to the supply air plenum and routed through the attic to a register in each room. Use a Non-tape sealant such as mastic or an aerosol sealant to prevent leaks in the ducts and the plenum.

The opposite end of the return air duct is attached to a return filter grille housing. The filter grille is usually located in a wall, just below the ceiling or the ceiling in a hallway. Use a Non-tape sealant such as mastic or an aerosol sealant to prevent leaks in the ducts and the plenum.

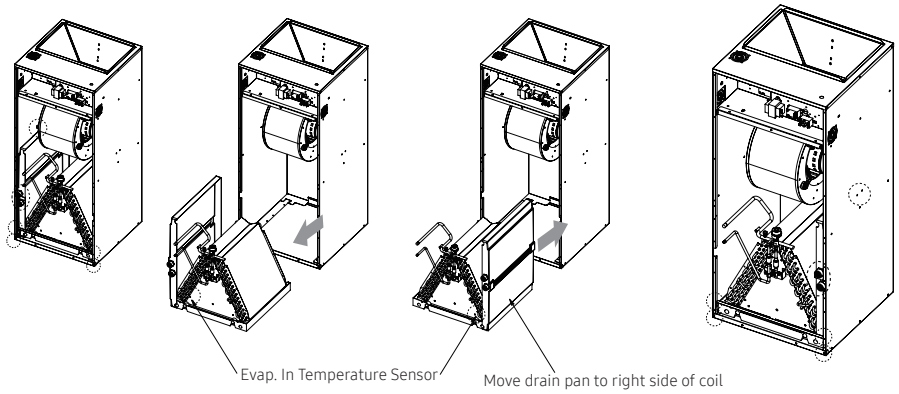


Horizontal right application (left to right)

The unit is shipped to be installed without modification in a right to left configuration. For left to right applications:

1. Remove the unit access panels
2. Remove the cooling coil after disassembling bracket coil and plate.
3. Move the condensate drain pan to the right side of the unit chassis.
4. Move the Evap In temperature sensor to holder of the right side.
5. Reinstall the cooling coil.
6. Connect the condensate drains and refrigerant lines. DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.
7. Reinstall unit access panels.

※ In all horizontal applications in which the unit is installed above a finished ceiling and/or living space, it is recommended that a secondary drain pan (field supplied) is installed under the entire unit to avoid damage to the ceiling in the event of condensate overflow.



Closet installation

Prior to installing the air handler make sure holes are cut into the floor for refrigerant tubing, drain line, electrical wiring, and control wiring.

1. Remove the top shipping cover and corner posts.
2. Remove the bottom shipping cover.
3. Remove the blower and control box access panel (door).
4. Remove the coil compartment access panel (door).
5. Place the unit into position by sliding the unit over the duct opening until the opening in the unit lines up with the duct opening in the floor.
6. Secure the unit to the floor by drilling two holes through the air handler base at the left and right front inside corners of the cabinet. Use two screws to secure the unit to the floor.
7. Use calking, sealers, and/or tape to seal between the floor base and the opening on the unit or between the opening on the unit and the duct in the floor.
8. Connect the electrical supply wires and the control wires in the control box.
9. Connect the refrigerant lines to the coil. DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.
10. Re-install the coil compartment access panel (door) and secure with the screws that were removed in step 3.
11. Re-install the blower and control box access panel (door) and secure with the screws that were removed in step 2.

Installation

Multi-position AHU

Air Handlers with DX type evaporator coils require liquid and suction piping sized in accordance with condensing unit manufacturer's instructions. The evaporator coils have sweat copper connections. Refrigerant lines should be soldered with silver solder or high temperature brazing alloy.

DRY NITROGEN MUST BE FLOWED THROUGH REFRIGERANT LINES DURING SOLDERING OPERATION.

REFER TO OUTDOOR UNIT INSTALLATION MANUALS FOR PRESSURE CHECKING AND VACUUM DRYING PROCEDURES.

There are two refrigerant pipes of differing diameters:

- A smaller one for the liquid refrigerant
- A larger one for the gas refrigerant
- The inside of copper pipe must be clean & have no dust.

Prepare the connecting pipe referring to the list below.

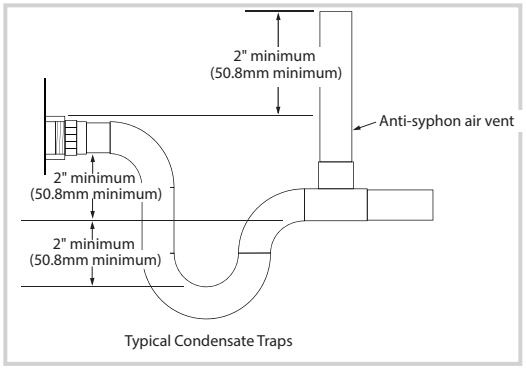
- Refrigerant pipe diameters

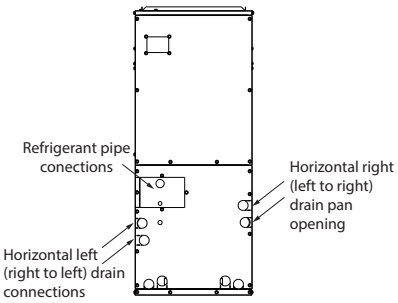
Unit : inch(mm)

	AC012/018BNZDCH	AC024BNZDCH	AC030/036/042/048BNZDCH
Liquid pipe	1/4 (6.35)	1/4 (6.35)	3/8 (9.52)
Gas pipe	1/2 (12.7)	5/8 (15.88)	5/8 (15.88)

Drain pipe installation

The air handler "A" coil drain pan has two ¾" NPT (Φ19.05mm) female primary and two secondary connections (left or right hand). The horizontal pan has two ¾" NPT (Φ19.05mm) female, one primary and one secondary. Piping from each fitting used is to have 2 inch (50.8mm) minimum trap and each run in such a manner as to provide enough slope for adequate drainage to a visible area. Do not pipe these two fittings together into a common drain. Prime drain with water before operating the unit by pouring water into the condensate pan. Cap unused connections.





CAUTION

- Make sure to keep the drain hose from getting tangled or loosened (on the connection part).
- Insulate all condensate pipes connected to the indoor unit to prevent condensation formation. Condensate formation on condensate pipes can lead to property damage and unsafe environment conditions.

When passing the drain hose through the hole drilled in the wall, make sure to avoid following cases.

CAUTION

- Since the draining is of natural drain type, install the drain hose in downward direction.
- If you do not tie the drain hose with a cable tie, leakage may occur
- Drain pipe may get clogged if there is any foreign substances within the drain pan, so you must remove any foreign substances after completing the installation.

Installation

Multi-position AHU

Wiring Work

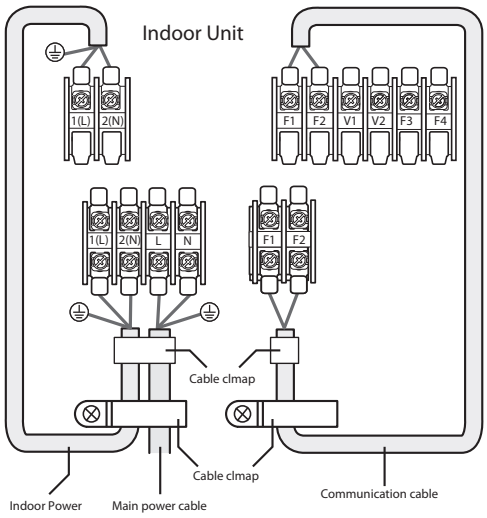
WARNING

- For personal safety be sure to turn the electrical power "OFF" at the main entrance (Home Circuit Breaker Box) and at the unit control box circuit breakers before attempting any service or maintenance operations. Homeowners should never attempt to perform any maintenance which requires opening the air handler control box door.
- This air handler is not equipped with a shield that covers the line voltage electrical supply wires and the circuit breaker connections. Take precautions to prevent accidental electrical shock. Be sure to turn the electrical power "OFF" at the main entrance (Home Circuit Breaker Box) and at the control box circuit breakers before removing the front panel.

Power supply wiring

- The unit internal wiring is complete except for the power supply and control wires.
- The use of cable connectors on incoming power supply wires to relieve any strain on wiring is recommended.
- Follow the steps below to connect the power supply wires.
- Supply voltage is 208/230V, 1ø, 60 Hz.
- If you are installing optional heat kits, refer to the heat kit installation instructions for line voltage connection instructions

Wiring diagram



Outdoor Unit

Between Indoor and Outdoor Connection cable Specifications(Common in use)

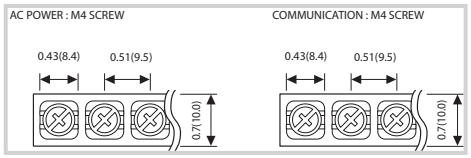
Indoor Power supply			Communication Cable
Power Supply	Max/Min(V)	Indoor Power cable	
208~230V/60Hz	±10%	0.0039in^2 ↑,3wires (2.5mm^2 ↑,3wires)	0.0012 inch^2 ↑, 2 wires (0.75mm^2↑, 2 wires)

- Selecting wire size must comply with local and national code.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F)
- Screws on terminal block must not be unscrewed with the torque less than 12 kgf•cm (0.86 lbf•ft).
- Since it has the external power supply, refer to the outdoor unit installation manual for MAIN POWER.

Installation

Multi-position AHU

Terminal Block SPEC (Indoor)

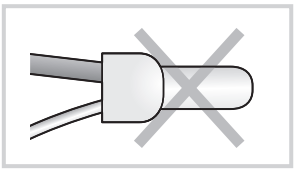


Tightening Torque		
M4	12.0~18.0 (kgf·cm)	0.86~1.3.0 (lbf·ft)

WARNING

In case of extending the electric wire, please DO NOT use a round-shaped pressing socket.

- Incomplete wire connections can cause electric shock or a fire.



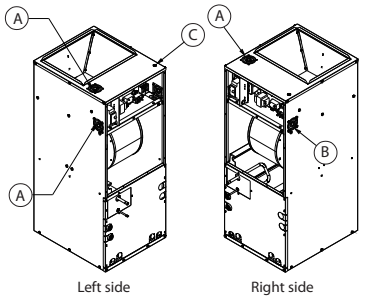
Wiring Work

Single circuit line wiring connections

CAUTION

If an accessory heat kit is installed, power must enter the unit on the top or the top-left side of the unit as shown below (A).

1. Before wiring work, you must turn off all power source.
2. Only copper power cables should be used.
3. Remove the blower and control box access panel (door).
4. Install the cable connectors on the 7/8" diameter holes on the right side of the control box.
5. Insert the wires through the holes in the casing and through the cable connectors.
6. Connect the black supply wire to the L1[1(L)] high voltage connection terminal with compressed ring terminals.
7. Connect the white supply wire to the L2[2(N)] high voltage connection terminal with compressed ring terminals.
8. Connect the green wire to the ground lug near the supply wire connections with a compressed ring terminal and tighten the ground screw. Make sure to leave extra slack in the ground wire to allow service to the unit without disconnecting the ground wire.



A - Power conduit connection opening (must use when installing accessory electric heat kit).

B - Power conduit connection opening (do not use when installing accessory electric heat kit).

C - Communication wire conduit connection opening

IMPORTANT - All insulation on field wiring must be rated at 140°F (60°C) or higher. Please refer to the wiring diagrams on the air handler or the tables in this manual for more information.

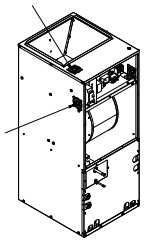
IMPORTANT - Refer to the NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for wiring material requirements.

Installation

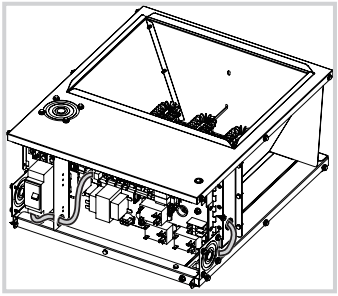
Multi-position AHU

Power supply wiring with accessory electric heat kit

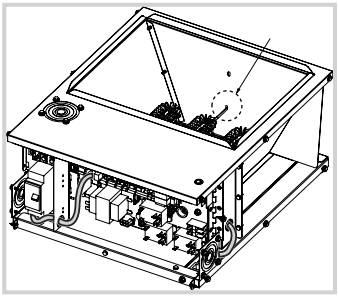
1. Before wiring work, you must turn off all power source.
2. Only copper power cables should be used.
3. Remove the blower and control box access panel (door).
4. Install the cable connectors on the 7/8" diameter holes on the left side of the control box.
5. Connect the included power pigtail leads with ring connectors (included with heat kit) to 1(L) and 2(N) terminals located on the right side of the control box.
6. Route the power pigtail leads through the control box opening pictured below and route to the left side of the control box for connection to the heat breakers in a later step.



Power conduit connection openings



7. Swing the hinged control plate outward exposing the back side of the control box. Remove the screws holding the electric heat kit block off plate. Save the screws.
8. Carefully pass the accessory heating element through the rectangular opening in the discharge of the air handler and secure the heating element with the screws from step 8. Heating element support rod must be seated in the hole on the opposite side of the discharge.



9. Install the breakers at the front-left of the control box.
10. Connect the power pigtail leads that are connected to 1(L) and 2(N) to the bottom of the breakers.
11. Insert the power wires through the holes in the casing and through the cable connectors.
12. In order to use heating function, you need change the installation option code. Set SEG10 to 1. For more information on changing the option code, refer to "Setting an indoor unit installation option".

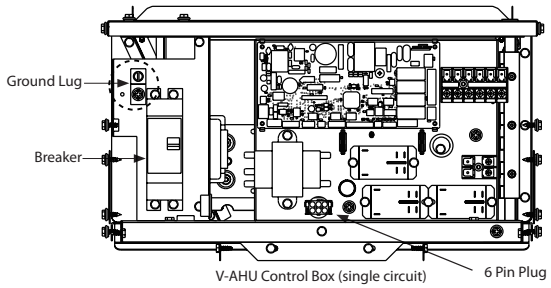
Power supply wiring with accessory electric heat kit

13. Strip ½" of the insulation on the end of each power wire.
14. Connect the black supply wire to the high voltage connection lug on the accessory heat kit breaker.
15. Connect the white supply wire to the other high voltage connection lug on the accessory heat kit breaker.

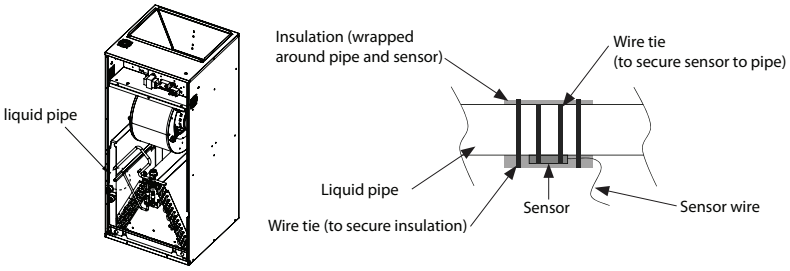
Installation

Multi-position AHU

16. Connect the green (ground) wire to the ground lug to the left of the accessory heat kit breakers and tighten the ground lug screw. Make sure to leave extra slack in the ground wire to allow service to the unit without disconnecting the ground wire. If the heat kit requires 2 circuits (dual circuit) , both circuit ground wires must be connected to a ground lug (dual circuit kits have two individual ground lugs).



17. Connect the six pin male plug on the electric heater assembly to the six pin female plug mounted at the bottom of the control assembly door.
18. Remove the wiring diagram from the accessory heat kit. Remove the paper that covers the adhesive back and place the electric heat wiring diagram over the wiring diagram located on the blower housing.
19. Route temperature sensor from the accessory electric heat kit to the lower section of the AHU cabinet. Attach the sensor to the bottom of the liquid pipe as shown below with included wire ties.



20. Wrap included insulation around the sensor and secure with included wire ties.
21. Remove the breaker opening cover plate on the AHU door and secure the doors to the unit.

NOTE: The electric heat kits are equipped with either one or two circuit breakers. These circuit breakers protect the wiring inside of the AHU in the event of a short circuit. Additionally, these breakers provide a means of disconnecting the power to the unit. The circuit breakers in the AHU's are not meant to protect the branch circuit wiring between the furnace and the building's breaker panel. If sheathed cable is used, refer to NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for additional requirements concerning supply circuit wiring. Electrical data can be found in page 21.

IMPORTANT - All installation on field wiring must be rated at 60°C or higher. Please refer to the wiring diagrams on the furnace or the tables this manual for more information. The 15kW and 20kW models may be connected to a single or dual branch circuit. Refer to the NEC National Electrical Code (NFPA 70) or the Canadian Electrical Code, Part I (CSA C22.1) and local codes for wiring material requirements.

Installation

Multi-position AHU

Power supply connections

If the air handler has been installed prior to installing the electric heaters or if an older unit is being replaced, the supply power wires must be checked to make sure the wires are the proper sizes to handle the current load for the heaters. Refer to table below for correct wire size. If the supply power wire size is incorrect, new wires will need to be installed. Follow the instructions "Power supply wiring" of these instructions for proper installation.

ELECTRICAL DATA																							
Indoor Unit Model	Electric Heater Data								Minimum Circuit Ampacity (MCA)				Maximum Overcurrent Protection (MOCP)				Minimum Wire Size (AWG)				Short-Circuit Current Rating	
				Amps 208V	Amps 208V	Amps 230V	Amps 230V						208V (3,4)	208V (3,4)	230V (3,4)	230V (3,4)	Circuit 1		Circuit 2		"SCCR"	
	Circuit Qty.	kW (208V)	kW (230V)	Circuit 1	Circuit 2	Circuit 1	Circuit 2	208V Circuit 1	208V Circuit 2	230V Circuit 1	230V Circuit 2	Circuit 1	Circuit 2	Circuit 1	Circuit 2	167°F (75°C) / 194°F (90°C)	140°F (60°C)	167°F (75°C) / 194°F (90°C)	140°F (60°C)	kA rms symmetrical	V maximum
SMALL CABINET-NOMINAL1.0, 1.5 & 2.0 TONS (0 To 5 Kw)																							
AC012BNZDCH	1	2.25	2.76	10.83	-	11.98	-	15.43	-	16.68	-	20.0	-	20.0	-	#12	#12	-	-	N/A	N/A
AC018BNZDCH	1	2.25	2.76	10.83	-	11.98	-	15.80	-	16.93	-	20.0	-	20.0	-	#12	#12	-	-	N/A	N/A
	1	3.76	4.59	18.06	-	19.97	-	24.83	-	26.91	-	30.0	-	30.0	-	#10	#10	-	-	N/A	N/A
AC024BNZDCH	1	2.25	2.76	10.83	-	11.98	-	16.70	-	17.71	-	20.0	-	20.0	-	#12	#12	-	-	N/A	N/A
	1	3.76	4.59	18.06	-	19.97	-	25.73	-	27.70	-	30.0	-	30.0	-	#10	#10	-	-	N/A	N/A
MEDIUM CABINET-NOMINAL 2.5, 3.0 TONS (0 To 10 Kw)																							
AC030BNZDCH	1	3.75	4.59	18.03	-	19.97	-	26.30	-	28.22	-	30.0	-	30.0	-	#10	#10	-	-	N/A	N/A
	1	7.50	9.18	36.06	-	39.93	-	48.83	-	53.17	-	50.0	-	60.0	-	#6	#6	-	-	N/A	N/A
AC036BNZDCH	1	3.76	4.59	18.06	-	19.97	-	27.99	-	29.65	-	30.0	-	30.0	-	#10	#10	-	-	N/A	N/A
	1	7.51	9.18	36.11	-	39.93	-	50.56	-	54.61	-	60.0	-	60.0	-	#4	#4	-	-	N/A	N/A
LARGE CABINET-NOMINAL 4.0, 4.5, 5.0, 6.0 TONS (0 To 20 Kw)																							
AC042BNZDCH	1	3.76	4.59	18.06	-	19.97	-	27.47	-	29.39	-	30.0	-	30.0	-	#10	#10	-	-	N/A	N/A
	1	7.51	9.18	36.11	-	39.93	-	50.04	-	54.35	-	60.0	-	60.0	-	#4	#4	-	-	N/A	N/A
AC048BNZDCH	1	3.76	4.59	18.06	-	19.97	-	28.74	-	30.30	-	30.0	-	35.0	-	#10	#6	-	-	N/A	N/A
	1	7.51	9.18	36.11	-	39.93	-	51.31	-	55.26	-	60.0	-	60.0	-	#4	#4	-	-	N/A	N/A
	2	11.27	13.78	18.06	36.11	19.97	39.93	22.57	51.31	24.96	55.26	30.0	60.0	30.0	60.0	#10	#4	#10	#4	5	240

1. Rated Motor Amps (at DOE External Static Rating Point)
2. Fuse or HACR Breaker
3. Maximum Overcurrent Device, Overcurrent Protection Installed On Breaker Models Are Sized Per MCA
   - To prevent damage, carefully insert the electric heating assembly through the rectangular opening in the front of the discharge opening so the heat element support rod is seated into the hole on the back side of the discharge opening.
   - After installing the electric heater, a one inch clearance must be maintained on all sides of the supply air duct and/or plenum for a minimum of thirty six inches from the air handler discharge opening.

Installation

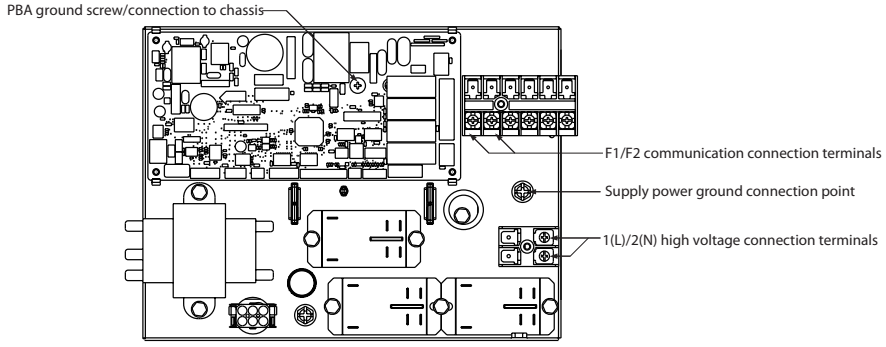
Multi-position AHU

Communication wiring connections

- Communication wires connect through side of air handler.
- Use an approved connector at the cabinet of the unit to prevent pulling or shorting of control wires.

> **ATTENTION**
> - Control wire must be rated for 600V minimum.
> - Control wire insulation must be rated for temperatures up to 90°C.

1. Insert the wires through the holes of the right side on the top casing and through the cable connectors.
2. Connect the communication wires to the F1/F2 connection terminal with compressed ring terminals.
3. Connect F3, F4 (for communication) when installing the wired remote control.



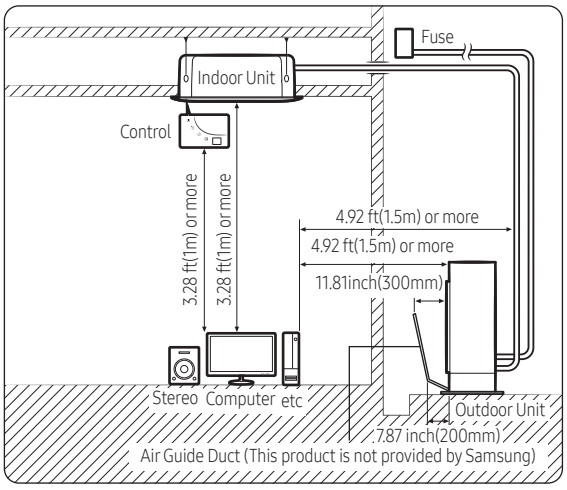
Installation

Outdoor Units

Choosing the installation location

Installation location requirements

- Do not place the outdoor unit on its side or upside down. Failing to do so may cause the compressor lubrication oil to run into the cooling circuit and lead to serious damage to the unit.
- Install the unit in a well-ventilated location away from direct sunlight or strong winds.
- Install the unit in a location that would not obstruct any passageways or thoroughfares.
- Install the unit in a location that would not inconvenience or disturb your neighbors, as they could be affected by the noise or the airflow coming from the unit.
- Install the unit in a location where the pipes and the cables can be easily connected to the indoor unit.
- Install the unit on a flat, stable surface that can withstand the weight of the unit. Otherwise, the unit can generate noise and vibration during operation.
- Install the unit so that the air flow is directed towards the open area.
- Maintain sufficient clearance around the outdoor unit, especially from a radio, computer, stereo system, etc.

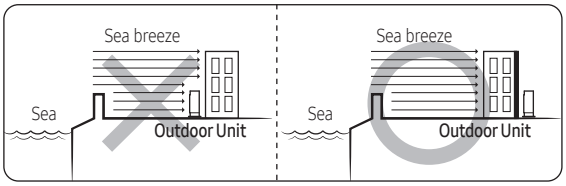


⚠ CAUTION

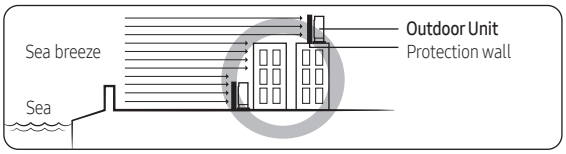
- You have just purchased a system air conditioner and it has been installed by your installation specialist.
- This device must be installed according to the national electrical rules.
- If your outdoor unit exceeds a net weight of 132.2 lb(60 kg), do not install it on a suspended wall, but stand it on a floor.
- The reliability of our product cannot be guaranteed under conditions of “A” or less.

Outdoor Model	"A"
AC018/024BXADCH	-13°F(-25°C)
AC030/036/042/048BXADCH	-4°F(-20°C)

- When installing the outdoor unit at the seaside, make sure that it is not directly exposed to sea breeze. If you cannot find an adequate place free from direct sea breeze, construct a protection wall or a protective fence.
  - Install the outdoor unit in a place (such as near buildings etc.) where it can be prevented from sea breeze. Failure to do so may cause a damage to the outdoor unit.



- If you cannot avoid installing the outdoor unit at the seaside, construct a protection wall around to block the sea breeze.
- Construct a protection wall with a solid material such as concrete to block the sea breeze. Make sure that the height and the width of the wall are 1.5 times larger than the size of the outdoor unit. Also, secure a space larger than 27.6 inch(700mm) between the protection wall and the outdoor unit for exhausted air to ventilate.



⚠ CAUTION

- Depending on the condition of the power supply, unstable power or voltage may cause malfunction of parts or control system (example: on a boat or places using power supplied from electric generator, etc.).

Installation

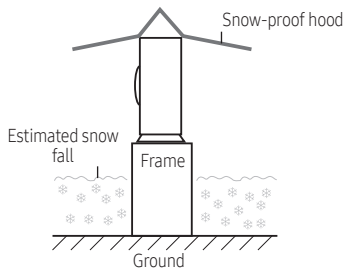
Outdoor Units

- Install the unit in a place where water can drain smoothly.
- If you have any difficulty finding installation location as prescribed above, contact your manufacturer for details.
- Consider that the salinity particles clinging to the external panels should be sufficiently washed out. Be sure to clean sea water and dust from the outdoor unit heat exchanger and apply a corrosion inhibitor on it at least once a year.
- Because the residual water at the bottom of the outdoor unit significantly promotes corrosion, make sure that the slope does not disturb drainage.
  - Keep the floor level so that rain does not accumulate.
  - Be careful not to block the drain hole due to foreign substance.
- Check the condition of the product periodically.
  - Check the installation site every 3 months and perform anti-corrosion treatment such as R-Pro supplied by SAMSUNG (Code : MOK-220SA) or commercial water repellent grease and wax, etc., based on the product condition.
  - When the product is to be shut down for a long period of time, such as off-peak hours, take appropriate measures like covering the product.
- If the product installed within 1640.4 ft of seashore, special anti-corrosion treatment is required.

  ※ Please contact your local SAMSUNG representative for further details.

⚠ CAUTION

- In areas with heavy snow fall, piled snow could block the air intake. To avoid this incident, install a frame that is higher than estimated snow fall. In addition, install a snow-proof hood to avoid snow from piling on the outdoor unit.

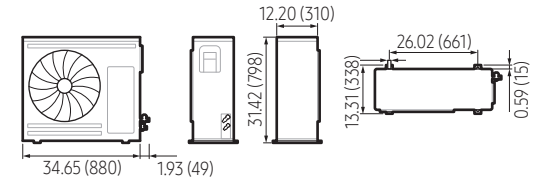


Outdoor unit dimensions

Unit : inch (mm)

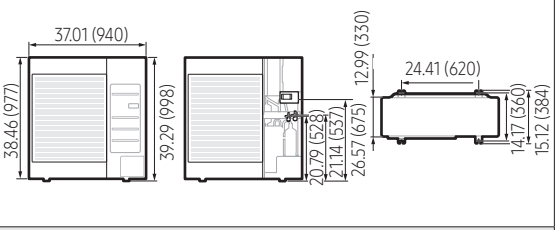
A Type

AC018BXADCH



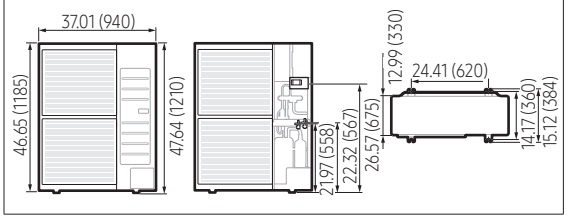
B Type

AC024BXADCH, AC030BXADCH



C Type

AC036BXADCH, AC042BXADCH, AC048BXADCH



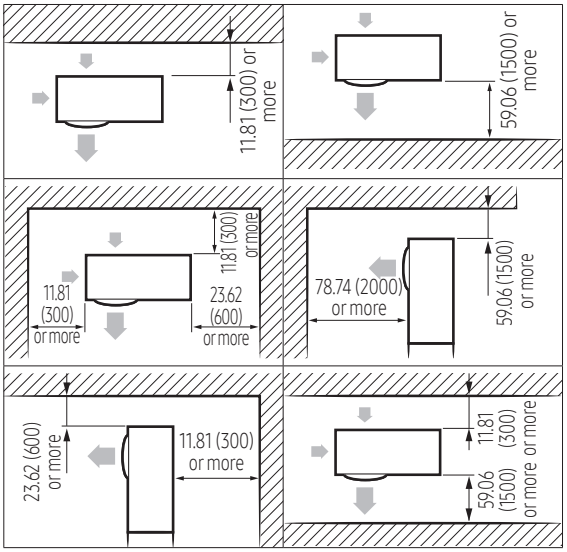
Installation

Outdoor Units

Minimum clearances for the outdoor unit

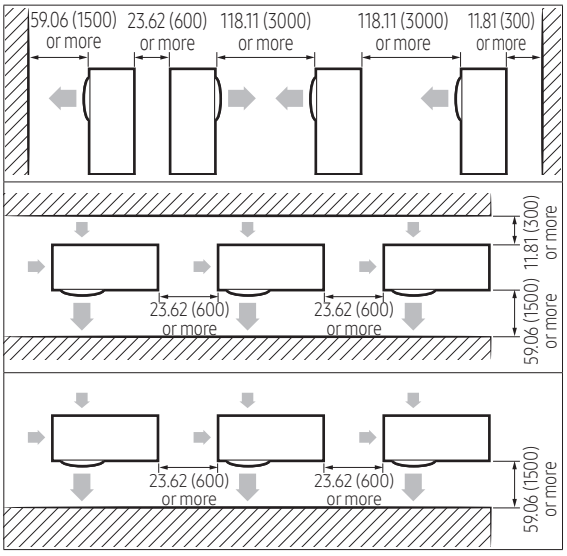
When installing 1 outdoor unit

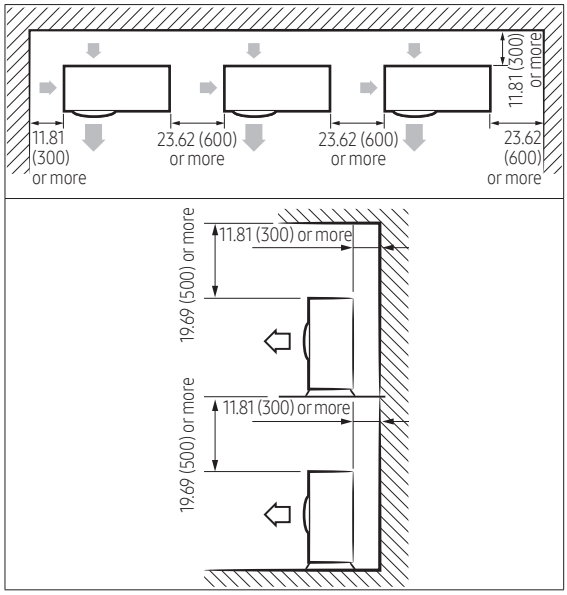
Unit : inch (mm)



When installing more than 1 outdoor unit

Unit : inch (mm)



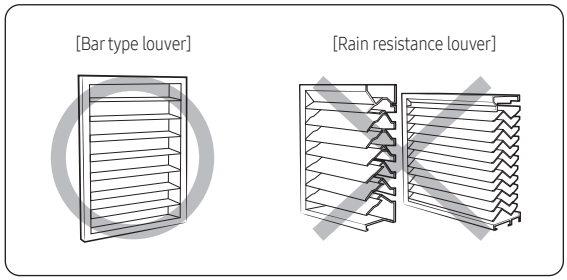


⚠ CAUTION

- The outdoor unit must be installed according to the specified distances in order to permit accessibility from each side, to guarantee correct operation, maintenance, and repair of the unit.
  The components of the outdoor unit must be reachable and removable under safe conditions for people and the unit.

⚠ WARNING

- Should adopt bar type louver. Don't use a type of rain resistance louver.



- Louver specifications.
  - Angle criteria : less than 20°
  - Opening ratio criteria : greater than 80%

Installation

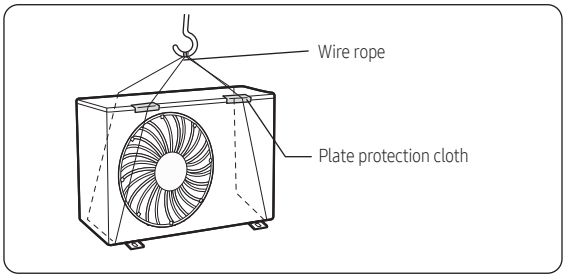
Outdoor Units

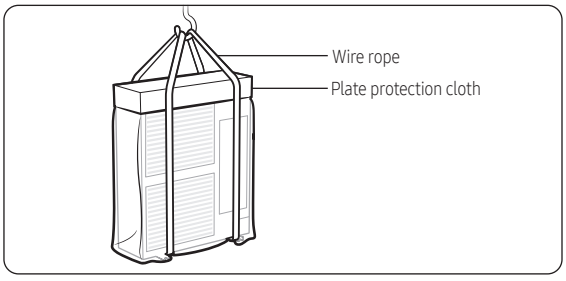
Moving the outdoor unit with wire rope

1 Before carrying the outdoor unit, fasten two wire ropes of 26.25 ft (8m) or longer, as shown in the figure.

2 To prevent damages or scratches effectively, insert a piece of cloth between the outdoor unit and the ropes.

3 Move the outdoor unit.





Fixing the outdoor unit in place

Install the outdoor unit on a rigid and stable base to prevent disturbance from any noise caused by vibration. When installing the unit on tall stands or in a location exposed to strong winds, fix the unit securely to the ground or structure.

1 Position the outdoor unit so that the air flow is directed towards the outside, as indicated by the arrows on the top of the unit.

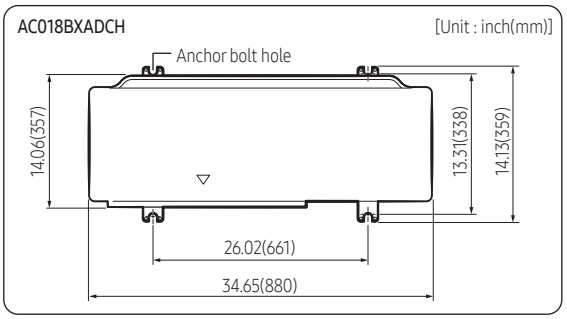
2 Attach the outdoor unit to the appropriate support using anchor bolts.

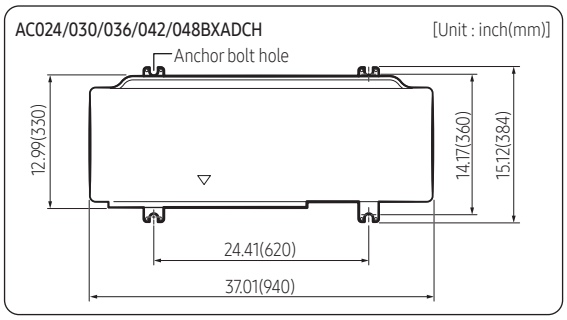
- The ground wire for the telephone line cannot be used to ground the air conditioner.

3 DIf the outdoor unit is exposed to strong winds, install shield plates around the outdoor unit, so that the fan can operate correctly.

NOTE

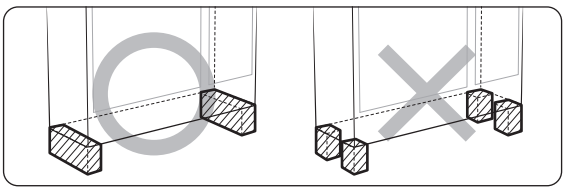
- Install provided rubber legs to prevent vibration and noise.



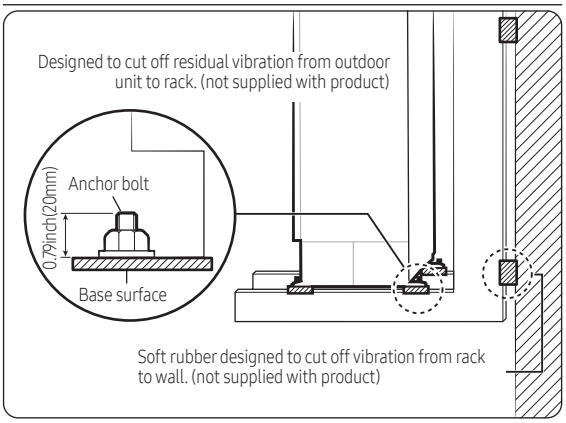


⚠ CAUTION

- Install a drain outlet at the lowest end around the base for outdoor unit drainage
- When installing the outdoor unit on the roof, waterproof the unit and check the ceiling strength.



Optional: Fixing the outdoor unit to a wall with a rack



- Install a proper grommet in order to reduce noise and residual vibration transferred by the outdoor unit towards the wall.

Installation

Outdoor Units

⚠ CAUTION

- Make sure that the wall can support the weights of the rack and the outdoor unit.
- Install the rack close to the column as much as possible.
- When installing an air guide duct, be sure to check the following:
  - The screws do not damage the copper pipe.
  - The air guide duct is fixed firmly on the guard fan.

Connecting the power cables, communication cable, and controllers

You must connect the following three electrical cables to the outdoor unit:

- The main power cable between the auxiliary circuit breaker and the outdoor unit.
- The outdoor-to-indoor power cable between the outdoor unit and the indoor unit.
- The communication cable between the outdoor unit and the indoor unit.

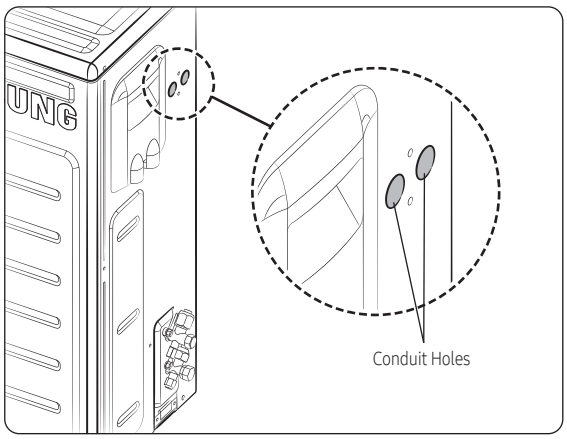
⚠ CAUTION

- During installation, make first the refrigerant connections and then the electrical connections. If the unit is being removed, first disconnect the electrical cables and then the refrigerant connections.
- Connect the air conditioner to the earthing system before making the electrical connections.

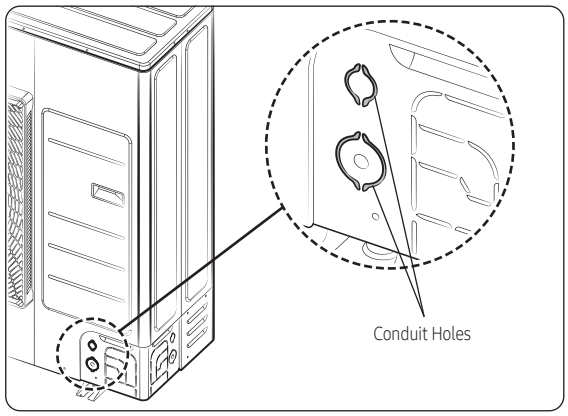
Connecting wire conduits

When connecting cables between the indoor unit and the outdoor unit, use conduits to protect the cables.

1 Drill holes on the conduit plate in accordance with their use and quantity.
   - AC018BXADCH
     - Drill conduit holes on the side cabinet. (knock out holes)

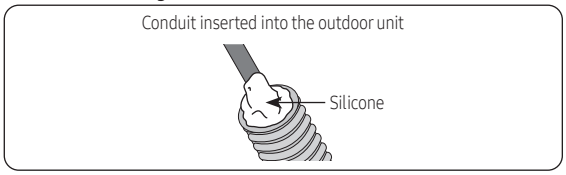


- AC024/030/036/042/048BXADCH
  - Use a nipper to remove conduit holes from the lower part of the cabinet.
    (Do not remove it by hammering.)



2 Insert the cables through the conduits, and then fix the conduits to the conduit plate with the lock nuts.

3 Apply silicone to the end of the hose to prevent rain from entering the hose.

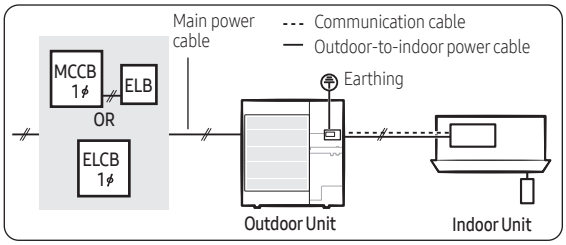


4 Connect the cables to the outdoor units.
For how to connect the cables, refer to the next page.

5 Attach the conduit plate to the product.

Air conditioning system examples

When using earth leakage circuit breaker (ELCB) for a single phase



※ The appearance of the unit may be different from the picture depending on the model.

⚠ CAUTION

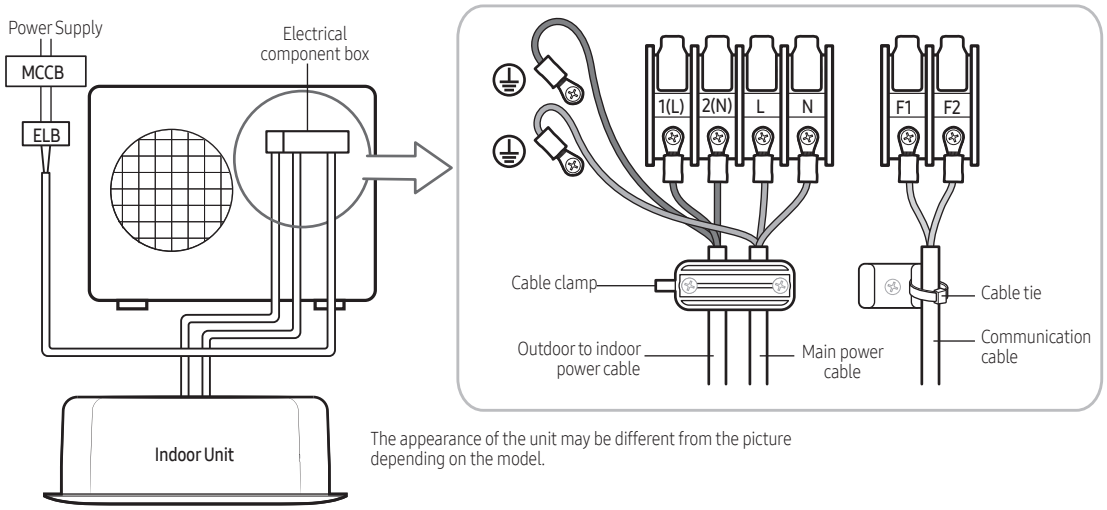
- If the outdoor unit is installed in a location vulnerable to an electric leak or submergence, make sure to install an ELCB.
- AC018BXADCH, AC024BXADCH: ELCB must be installed since this product is equipped with a base heater.

Installation

Outdoor Units

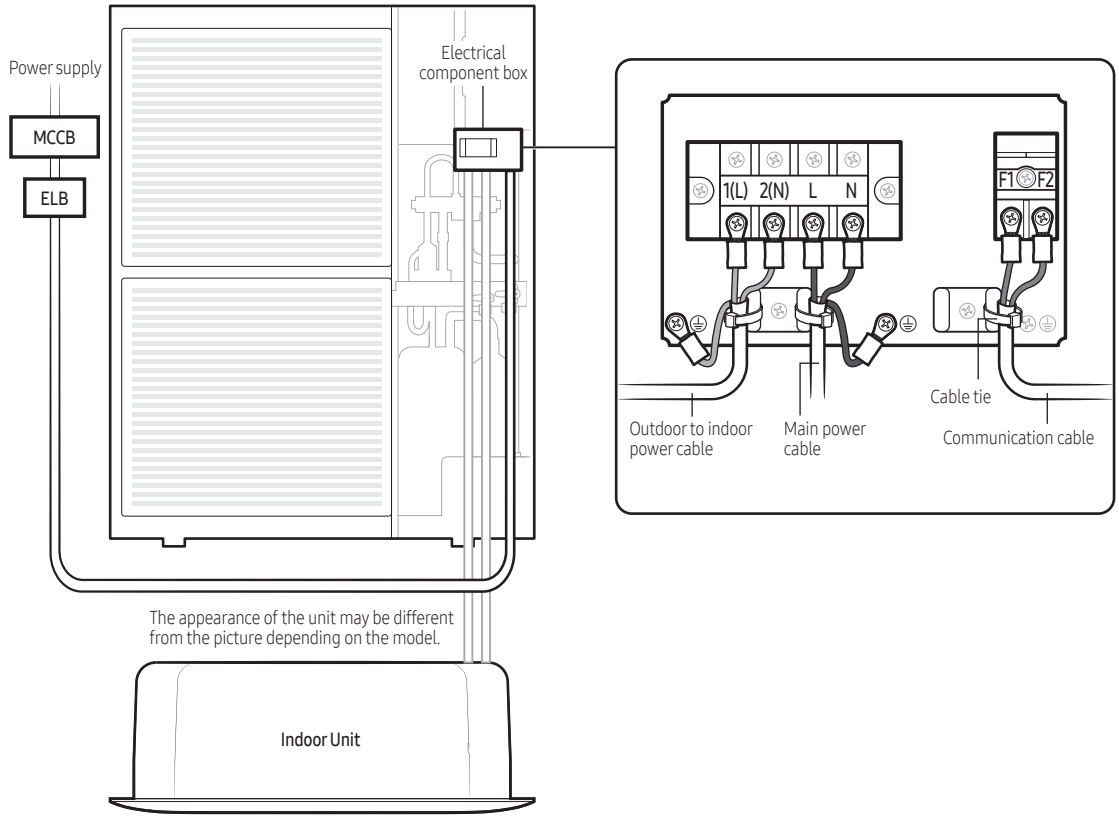
Connecting the main power cable

When using ELB for AC018BXADCH (1-phase)



The appearance of the unit may be different from the picture depending on the model.

When using ELB for AC024/030/036/042/048BXADCH (1-phase)



The appearance of the unit may be different from the picture depending on the model.

Installation

Outdoor Units

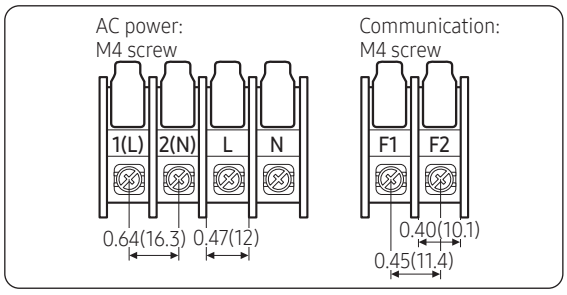
⚠ CAUTION

- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 2% of supply rating.
- If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 4% of supply rating, the indoor unit is protected, stopped and the error mode indicates.
- To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units within ducts. (with appropriate IP rating and material selection for your application)
- Ensure that main supply connection is made through a switch that disconnects all poles, with contact gap of a least 0.12 inch(3mm).
- Devices disconnected from the power supply should be completely disconnected in the condition of overvoltage category.
- Keep distances of 1.97 inch(50mm) or more between power cable and communication cable.

Main power terminal block specifications

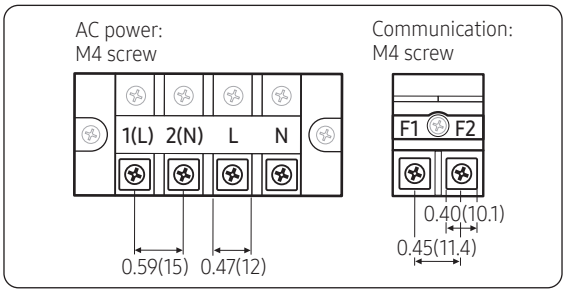
- AC018BXADCH (1-phase)

[Unit : inch(mm)]



- AC024/030/036/042/048BXADCH (1-phase)

[Unit : inch(mm)]



Main power cable specifications

The power cable is not supplied with air conditioner.

- Select the power supply cable in accordance with relevant local and national regulations.
- Wire size must comply with the applicable local and national code.
- Specifications for local wiring power cord and branch wiring are in compliance with local cord.

Installation

Outdoor Units

Model		Power Source	RLA (A)	Outdoor		Indoor	MCA (A)	MOP (A)
Outdoor	Indoor			MOC		Rated input current of the power conversion equipment		
				FAN1(A)	FAN2(A)	FAN(A)		
AC018BXADCH	AC018BN1DCH	208~230V/60Hz	12.7	1.25	-	0.42	20.1	25.0
	AC018BN4DCH					0.79		
	AC018BN6DCH					0.79		
	AC018BNADCH					0.42		
	AC018BNHDCH					2.10		
	AC018BNJDCH					0.49		
	AC018BNLDCH					1.06		
	AC018BNNDCH					0.30		
	AC018BNZDCH					1.50		
AC024BXADCH	AC024BN4DCH		15.9	1.25	-	0.79	24.1	30.0
	AC024BN6DCH					0.79		
	AC024BNADCH					0.42		
	AC024BNHDCH					2.10		
	AC024BNZDCH					2.10		
AC030BXADCH	AC030BN4DCH		16.2	1.25	-	0.79	24.0	30.0
	AC030BN6DCH					0.79		
	AC030BNHDCH					2.10		
	AC030BNTDCH					0.51		
	AC030BNZDCH					2.50		
AC036BXADCH	AC036BN4DCH		14.7	1.25	1.25	0.79	24.5	35.0
	AC036BN6DCH					0.79		
	AC036BNHDCH					3.50		
	AC036BNTDCH					0.51		
	AC036BNZDCH					3.60		
AC042BXADCH	AC042BN4DCH		20.9	1.25	1.25	0.79	32.2	40.0
	AC042BN6DCH					0.79		
	AC042BNHDCH					3.50		
	AC042BNZDCH					3.40		
AC048BXADCH	AC048BN4DCH		20.9	1.25	1.25	0.79	32.8	40.0
	AC048BN6DCH					0.79		
	AC048BNHDCH					3.50		
	AC048BNZDCH					4.10		

Installation

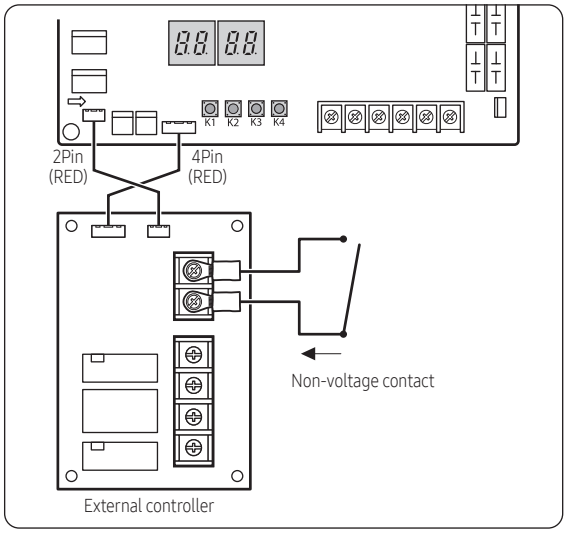
Outdoor Units

NOTE

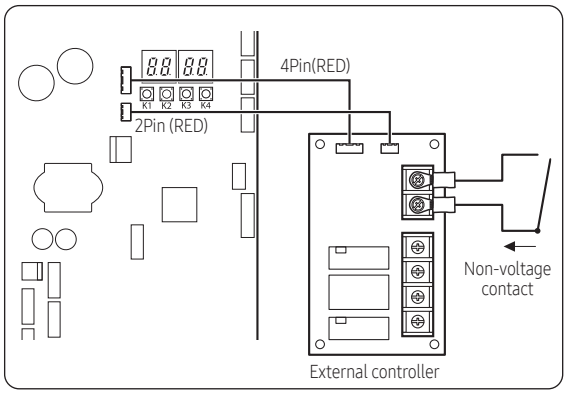
- RLA is based on AHRI 210/240 cooling standard condition [Indoor temp. : 26.7 °C / 80 °F(DB) / 19.46 °C / 67 °F(WB), Outdoor temp. : 35 °C / 95 °F(DB)]
- Voltage tolerance is ± 10 %.
- Maximum allowable voltage between phases is 2 %.
- Symbols
  - RLA: Rated Load Ampere (A)
  - MOC: Maximum Operating Current (A)
  - MCA: Minimum Circuit Ampere (A)
  - MOP: Maximum Overcurrent Protective Device (A)
- Voltage range
  - Units are suitable for use on electrical systems where voltage supplied to unit terminal is not below or above listed range limits.
- Maximum allowable voltage variation between phases is 2%.
- Wire size & type must comply with the applicable local and national code.
  - Wire size: Based on the value of MCA.
  - Wire type:
    1-phase: 60245 IEC57(IEC) or H05RN-F(CENELEC) grade or more

Silence mode controller wiring diagram with External controller

- AC018BXADCH



- AC024/030/036/042/048BXADCH

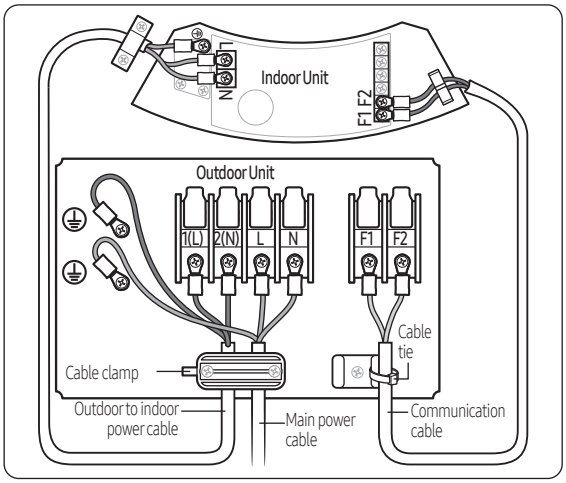


Installation

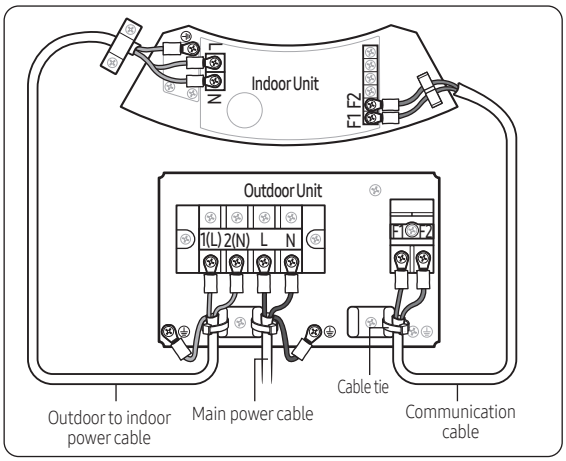
Outdoor Units

Connecting the outdoor-to-indoor power cable and the communication cable

- AC018BXADCH



- AC024/030/036/042/048BXADCH

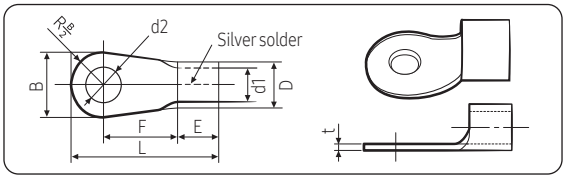


NOTE

- Lay the electrical wiring so that the front cover does not rise up when doing wiring work and attach the front cover securely.
- Ground wire for the indoor unit and outdoor unit connection cable must be clamped to a soft copper tin-plated eyelet terminal with M4 screw hole(NOT SUPPLIED WITH UNIT ACCESSORIES).
- The appearance of the unit may be different from the picture depending on the model.

Outdoor-to-indoor power terminal specifications

- Connect the cables to the terminal board using the compressed ring terminal.
- Cover a solderless ring terminal and a connector part of the power cable and then connect it.



Installation

Outdoor Units

Nominal dimensions for cable [mm2(inch2)]	Nominal dimensions for screw [mm(inch)]	B		D		d1		E	F	L	d2		t
		Standard dimension [mm(inch)]	Allowance [mm(inch)]	Standard dimension [mm(inch)]	Allowance [mm(inch)]	Standard dimension [mm(inch)]	Allowance [mm(inch)]	Min. [mm (inch)]	Min. [mm (inch)]	Max. [mm (inch)]	Standard dimension [mm(inch)]	Allowance [mm(inch)]	Min. [mm (inch)]
4/6 (0.006/ 0.009)	4(3/8)	9.5(3/8)	±0.2 (±0.007)	5.6(1/4)	+0.3(+0.011) -0.2(-0.007)	3.4(1/8)	±0.2 (±0.007)	6 (1/4)	5 (3/16)	20 (3/4)	4.3 (3/16)	+0.2 (+0.007) 0(0)	0.9 (0.03)
	8(3/16)	15(9/16)							9 (3/8)	28.5 (1-1/8)	8.4 (1-3/16)	+0.4 (+0.015) 0(0)	
10(0.01)	8(3/16)	15(9/16)	±0.2 (±0.007)	7.1(1/4)	+0.3(+0.011) -0.2(-0.007)	4.5(3/16)	±0.2 (±0.007)	7.9 (5/16)	9 (3/8)	30 (1-3/16)	8.4 (1-3/16)	+0.4 (+0.015) 0(0)	1.15 (0.04)
16(0.02)	8(3/16)	16(10/16)	±0.2 (±0.007)	9(3/8)	+0.3(+0.011) -0.2(-0.007)	5.8(1/4)	±0.2 (±0.007)	9.5 (5/16)	13 (1/2)	33 (1-5/16)	8.4 (1-3/16)	+0.4 (+0.015) 0(0)	1.45 (0.05)
25(0.03)	8(3/16)	12(1/2)	±0.3 (±0.011)	11.5(7/16)	+0.5(+0.019) -0.2(-0.007)	7.7(5/16)	±0.2 (±0.007)	11 (3/8)	15 (5/8)	34 (1-3/8)	8.4 (1-3/16)	+0.4 (+0.015) 0(0)	1.7 (0.06)
	8(3/16)	16.5(10/16)							13 (1/2)		8.4 (1-3/16)		
35(0.05)	8(3/16)	16(10/16)	±0.3 (±0.011)	13.3(1/2)	+0.5(+0.019) -0.2(-0.007)	9.4(3/8)	±0.2 (±0.007)	12.5 (1/2)	13 (1/2)	38 (1-1/2)	8.4 (1-3/16)	+0.4 (+0.015) 0(0)	1.8 (0.07)
	8(3/16)	22(7/8)							13 (1/2)	43 (1-11/16)	8.4 (1-3/16)		
50(0.07)	8(3/16)	22(7/8)	±0.3 (±0.011)	13.5(1/2)	+0.5(+0.019) -0.2(-0.007)	11.4(7/16)	±0.3 (±0.011)	17.5 (11/16)	14 (9/16)	50 (2)	8.4 (1-3/16)	+ 0.4(+0.015) 0(0)	1.8 (0.07)
70(0.10)	8(3/16)	24(1)	±0.4 (±0.015)	17.5(11/16)	+0.5(+0.019) -0.4(-0.015)	13.3(1/2)	±0.4 (±0.015)	18.5 (3/4)	20 (3/4)	51 (2)	8.4 (1-3/16)	+ 0.4(+0.015) 0(0)	2.0 (0.078)

- Connect the rated cables only.
- Connect using a driver which is able to apply the rated torque to the screws.
- If the terminal is loose, fire may occur caused by arc. If the terminal is connected too firmly, the terminal may be damaged.

	Tightening torque	
	lbf•ft	N•m
M4	0.87 to 1.30	0.8 to 1.2
M5	1.45 to 2.17	2.0 to 3.0

⚠ CAUTION

- When connecting cables, you can connect the cables to the electrical part or connect them through the holes below depending on the spot.
- Connect the communication cable between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.
- Remove all burrs at the edge of the knock-out hole and secure the cable to the outdoor knock-out using lining and bushing with an electrical insulation such as rubber and so on.
- Must keep the cable in a protection tube.
- Keep distances of 1.97 inch(50mm) or more between power cable and communication cable.
- When the cables are connected through the hole, remove the Plate bottom.

Installation

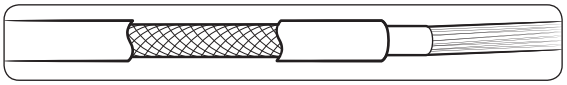
Outdoor Units

Outdoor-to-indoor power and communication cables specifications

- Indoor unit :
  MPAH(AC***BNZ***)

Indoor power supply		
Power supply	Max/Min (V)	Indoor power cable
1Φ, 208-230V~, 60Hz	±10%	0.0039 inch²↑ (2.5mm² ↑), 3 wires
Communication cable		
0.0012 inch²↑ (0.75mm² ↑), 2 wires		

- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation IEC:60245 IEC 57 / CENELEC: H05RN-F)
- When installing the indoor unit in a computer room or network room, use the double shielded (tape aluminum / polyester braid + copper) cable of FROHH2R type.



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Ver.1.0

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