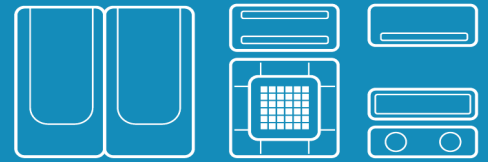


RAC

Technical Data Book

2016 RAC for North America
(Inv, R410A, 60Hz, HP)



Model : AQN36VFUAGM/CV
(Max)

History

Version	Modification	Date	Remark
1.0	Release the new TDB	16.08.12	

Index

1 Specifications

2 Capacity table

3 Dimensional drawing

4 Electrical wiring diagram

5 Sound pressure level

***6 Temperature and air flow
distribution***

7 Cycle diagram

8 Operation limit

9 Capacity correction

1 Specifications

Inverter(HP)

Type				Inverter(HP)			
Model Name		Indoor Unit		AQN36VFUAGM/CV			
		Outdoor Unit		AQX36VFUAGM/CV			
System	Mode		-		Max		
	Capacity	Cooling(Min/Std/Max)		kW		2.64 / 9.67 / 11.14	
				Btu/h		9,000 / 33,000 / 38,000	
				US RT		0.75 / 2.75 / 3.17	
		Heating(Min/Std/Max)		kW		2.64 / 9.96 / 13.19	
				Btu/h		9,000 / 34,000 / 45,000	
				US RT		0.75 / 2.83 / 3.75	
	Power	Power Input (Nominal)	Cooling(Min/Std/Max)	kW	0.68 / 3.00 / 4.00		
			Heating(Min/Std/Max)		0.62 / 3.20 / 4.50		
		Current Input (Nominal)	Cooling(Min/Std/Max)	A	3.60 / 14.20 / 18.00		
			Heating(Min/Std/Max)		3.30 / 15.00 / 21.00		
		MCA		A	19.50 (MCA)		
		MFA		A	30.00		
	Energy Efficiency	EER (Nominal Cooling)		-	3.22		
		EER (Nominal Cooling, US)		Btu/Wh	11.00		
		COP (Nominal Heating)		-	3.11		
		Energy Grade		Energy	SEER 18		
				Energy	HSPF 9		
	Piping Connection s	Liquid Pipe			Ø, mm	6.35	
					Ø, inch	1/4"	
		Gas Pipe			Ø, mm	15.88	
					Ø, inch	5/8"	
		Installation Limitation	Max. Length	m	50		
				ft	164		
			Max. Height	m	30		
				ft	98		
	Field Wiring	Power Source Wire		Ø, mm	-		
		Transmission Cable		Ø, mm	-		
	Refrigerant	Type		-	R410A		
		Control Method		-	-		
Factory Charging		kg	2.50				
		lbs	5.51				
		Power Supply		Ø, #, V, Hz	1,2,208-230,60		
Fan	Type		-	Cross Flow Fan			
	Motor	Output	W	58 x 1			
			CFM	920 / 750 / 580			
	External Static Pressure	Min/Std/Max	Pa	-			
			In Wg	-			
	Drain	Drain Pipe		Ø,mm	ID18 HOSE		
Sound	Pressure	High/Low	dB(A)	49 / 33			
		Cooling		-			
Indoor Unit	External Dimension	Net Weight		kg	18.20		
				lbs	40.12		
		Shipping Weight		kg	21.60		
				lbs	47.62		
		Net Dimensions (WxHxD)		mm	1,279 x 229 x 345		
				inch	50.35 x 9.02 x 13.58		
	Shipping Dimensions (WxHxD)		mm	1,352 x 326 x 420			
			inch	53.23 x 12.83 x 16.54			
	Panel Size	Panel model		-	-		
		Panel Net Weight		kg	-		
				lbs	-		
		Shipping Weight		kg	-		
				lbs	-		
		Net Dimensions (WxHxD)		mm	-		
	inch			-			
	Shipping Dimensions (WxHxD)		mm	-			
			inch	-			
	Additional Accessories	Drain pump	Drain pump	-	-		
Max. Lifting			mm/liter/h	-			
Air Filter		-	-				
Outdoor Unit	Power Supply		Ø, #, V, Hz	1,2,208-230,60			
	Compressor	Type		-	BLDC Rotary		
		Model		-	G5T360FUCEK		
		Output		kW	10.99		
	Fan	Oil	Type	-	POE		
		Air Flow Rate	Cooling	CFM	2,300		
	Sound	Pressure	Cooling/Heating	dB(A)	59		
			Cooling		-		
	External Dimension	Net Weight		kg	87.00		
				lbs	191.80		
		Shipping Weight		kg	96.00		
				lbs	211.64		
		Net Dimensions (WxHxD)		mm	932 x 1,128 x 375		
				inch	36.69 x 44.41 x 14.76		
Shipping Dimensions (WxHxD)		mm	1,095 x 476 x 1,285				
		inch	43.11 x 18.74 x 50.59				
Operating Temp.	Cooling		°F	14.0 ~ 114.8			
	Heating		°F	5.0 ~ 75.2			

* Specifications may be subject to change without prior notice.

1) Nominal capacity are based on (Refrigerant Piping : 24.6ft(7.5m) , Level Differences : 0ft);

.Cooling : Indoor temperature : 80°F DB, 67°F WB / Outdoor temperature : 95°F DB, 75°F WB

.Heating : Indoor temperature : 70°F DB, 60°F WB / Outdoor temperature : 47°F DB, 43°F WB

2) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.

2 Capacity table

Inverter(HP)

AQN36VFUAGM/CV +AQX36VFUAGM/CV

Cooling

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

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)																	
	68 (DB)			72 (DB)			77 (DB)			80 (DB)			82 (DB)			86 (DB)		
	57 (WB)			61 (WB)			64 (WB)			67 (WB)			70 (WB)			72 (WB)		
	TC(MBH)	SHC(MBH)	PI(kW)	TC(MBH)	SHC(MBH)	PI(kW)	TC(MBH)	SHC(MBH)	PI(kW)	TC(MBH)	SHC(MBH)	PI(kW)	TC(MBH)	SHC(MBH)	PI(kW)	TC(MBH)	SHC(MBH)	PI(kW)
14	44.01	18.05	2.14	42.72	24.35	2.15	44.01	25.09	2.17	44.01	28.61	2.18	45.31	25.83	2.19	46.61	24.70	2.19
32	42.51	17.43	2.10	41.22	23.49	2.11	42.51	24.23	2.13	42.51	27.63	2.14	43.81	24.97	2.15	45.11	23.91	2.15
50	41.05	16.83	2.10	39.75	22.66	2.11	41.05	23.40	2.13	41.05	26.68	2.09	42.34	24.14	2.15	43.64	23.13	2.15
68	39.55	16.21	2.01	38.25	21.80	2.02	39.55	22.54	2.04	39.55	25.70	2.05	40.84	23.28	2.07	42.14	22.33	2.09
77	37.36	15.32	2.29	36.06	20.56	2.30	37.36	21.30	2.33	37.36	24.28	2.34	38.66	22.04	2.36	39.95	21.18	2.39
90	34.32	14.07	2.72	33.03	18.83	2.74	34.32	19.57	2.77	34.32	22.31	2.78	35.62	20.30	2.81	36.92	19.57	2.84
95	33.00	13.53	2.94	31.70	18.07	2.96	33.00	18.81	2.99	33.00	21.45	3.00	34.30	19.55	3.02	35.59	18.86	3.03
104	31.46	12.90	3.46	30.16	17.19	3.50	31.46	17.93	3.53	31.46	20.45	3.57	32.76	18.67	3.61	34.05	18.05	3.64
110	30.54	12.52	3.77	29.24	16.67	3.81	30.54	17.41	3.89	30.54	19.85	3.93	31.83	18.15	3.99	33.13	17.56	4.04
115	29.62	12.14	4.12	28.32	16.14	4.16	29.62	16.88	4.25	29.62	19.25	4.29	30.91	17.62	4.33	32.21	17.07	4.42

Heating

TC : Total Capacity, PI: Power Input

Outdoor Air Temp. (°F, DB)	Indoor Temperature (°F)											
	61 (DB)		64 (DB)		68 (DB)		70 (DB)		72 (DB)		75 (DB)	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW	MBH	kW
5	25.56	3.43	25.06	3.50	24.57	3.57	24.57	3.59	24.57	3.61	24.57	3.64
14	30.08	3.51	29.49	3.58	28.91	3.65	28.91	3.67	28.91	3.69	28.91	3.73
23	34.61	3.59	33.93	3.66	33.26	3.73	33.26	3.75	33.26	3.77	33.26	3.81
32	39.13	3.67	38.36	3.74	37.61	3.82	37.61	3.84	37.61	3.86	37.61	3.89
36	40.94	3.70	40.13	3.77	39.35	3.85	39.35	3.87	39.35	3.89	39.35	3.93
41	34.84	3.06	34.15	3.13	33.48	3.19	33.15	3.21	32.81	3.22	32.16	3.25
47	35.73	3.07	35.03	3.14	34.34	3.20	34.00	3.22	34.00	3.23	33.66	3.26
50	37.07	3.08	36.34	3.15	35.63	3.21	35.27	3.23	35.27	3.25	34.92	3.28
59	39.29	3.11	38.52	3.17	37.77	3.24	37.39	3.25	37.39	3.27	37.02	3.30
68	41.52	3.13	40.71	3.20	39.91	3.26	39.51	3.28	39.51	3.29	39.12	3.33
75	43.31	3.15	42.46	3.21	41.63	3.28	41.21	3.30	41.21	3.31	40.80	3.35

- Capacities are based on following conditions;

. Cooling mode indoor air temperature (°F, DB/WB) : 68/57, 72/61, 77/64, 80/67, 82/70, 86/72, 90/75

. Heating mode outdoor air : 85%RH. However, the condition rated capacity is 47 DB / 43 WB.

. Refrigerant piping length : 7.5m (24.6ft) . Level difference : 0m.

. In case of Inverter models, the cooling capacity on the capacity table can be higher than nominal capacity as inverter compressors operate with different Hz depending on outdoor and indoor temperatures.

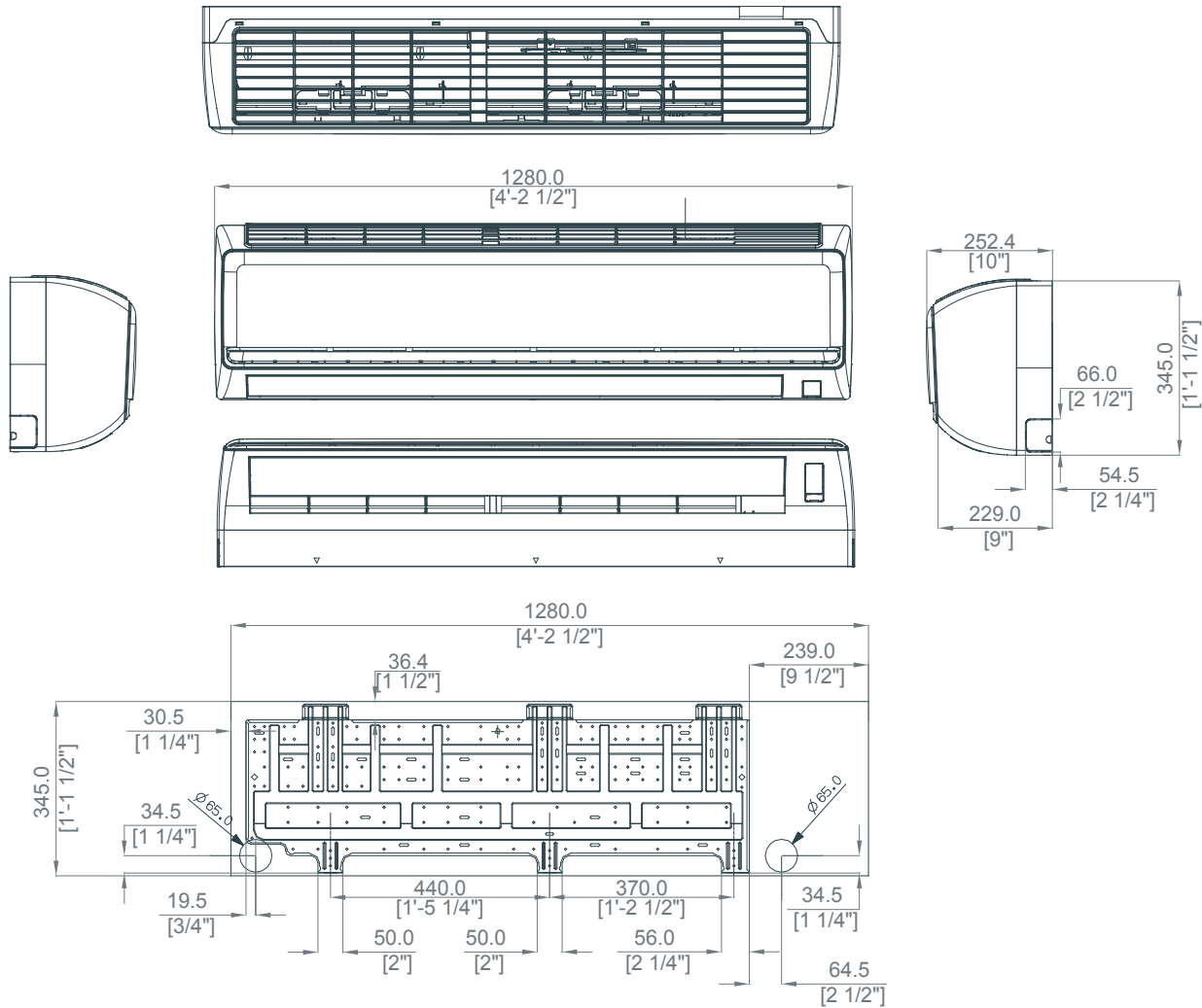
- The specifications, designs and information in this Databook is subject to change without notice.

3 Dimensional drawing

Indoor : Inverter(HP)

AQN36VFUAGM/CV

Units : mm / inches



3 Dimensional drawing

Outdoor

AQX36VFUAGM/CV

Units : mm / inches

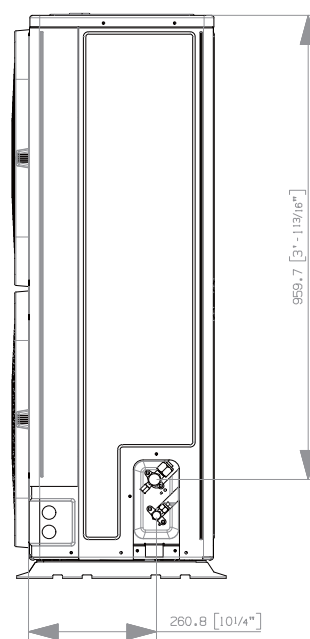
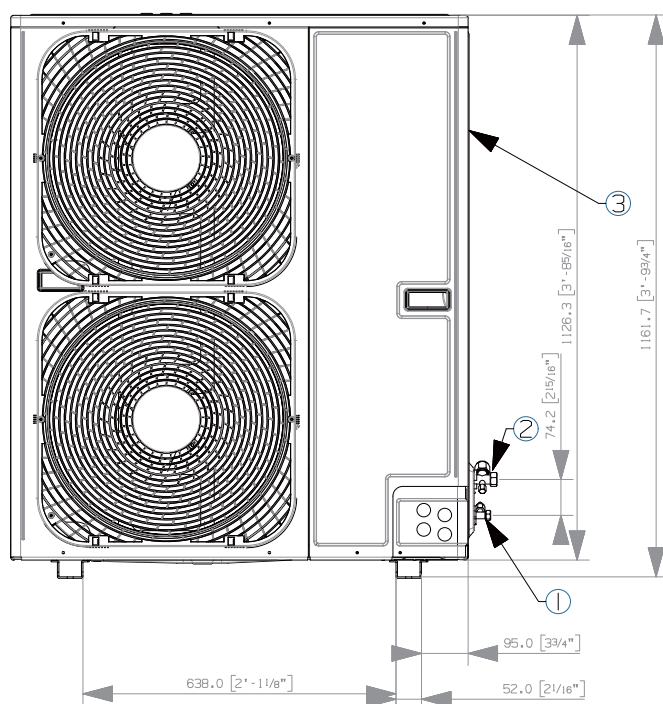
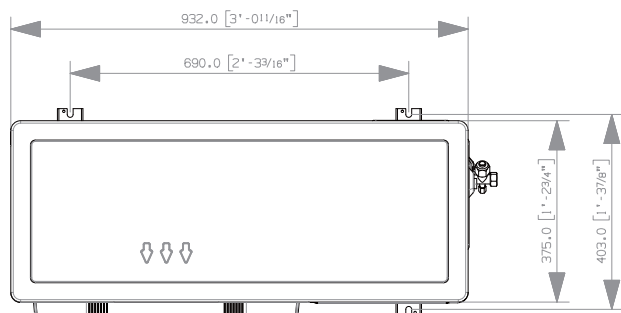


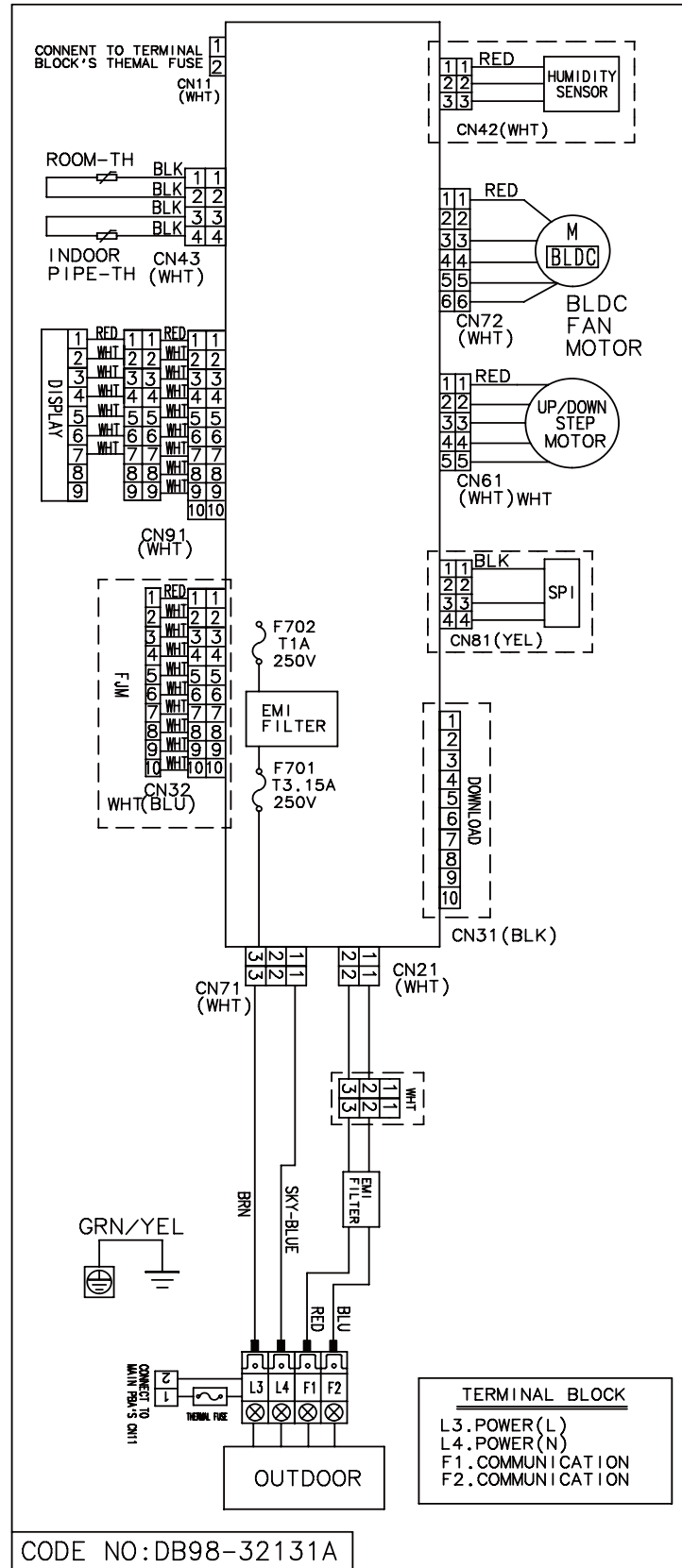
Table of descriptions

1	Refrigerant gas pipe	Ø6.35 Flare
2	Refrigerant liquid pipe	Ø15.88 Flare
3	Power & Comm. wiring conduits	
4		
5		
6		

4 Electrical wiring diagram

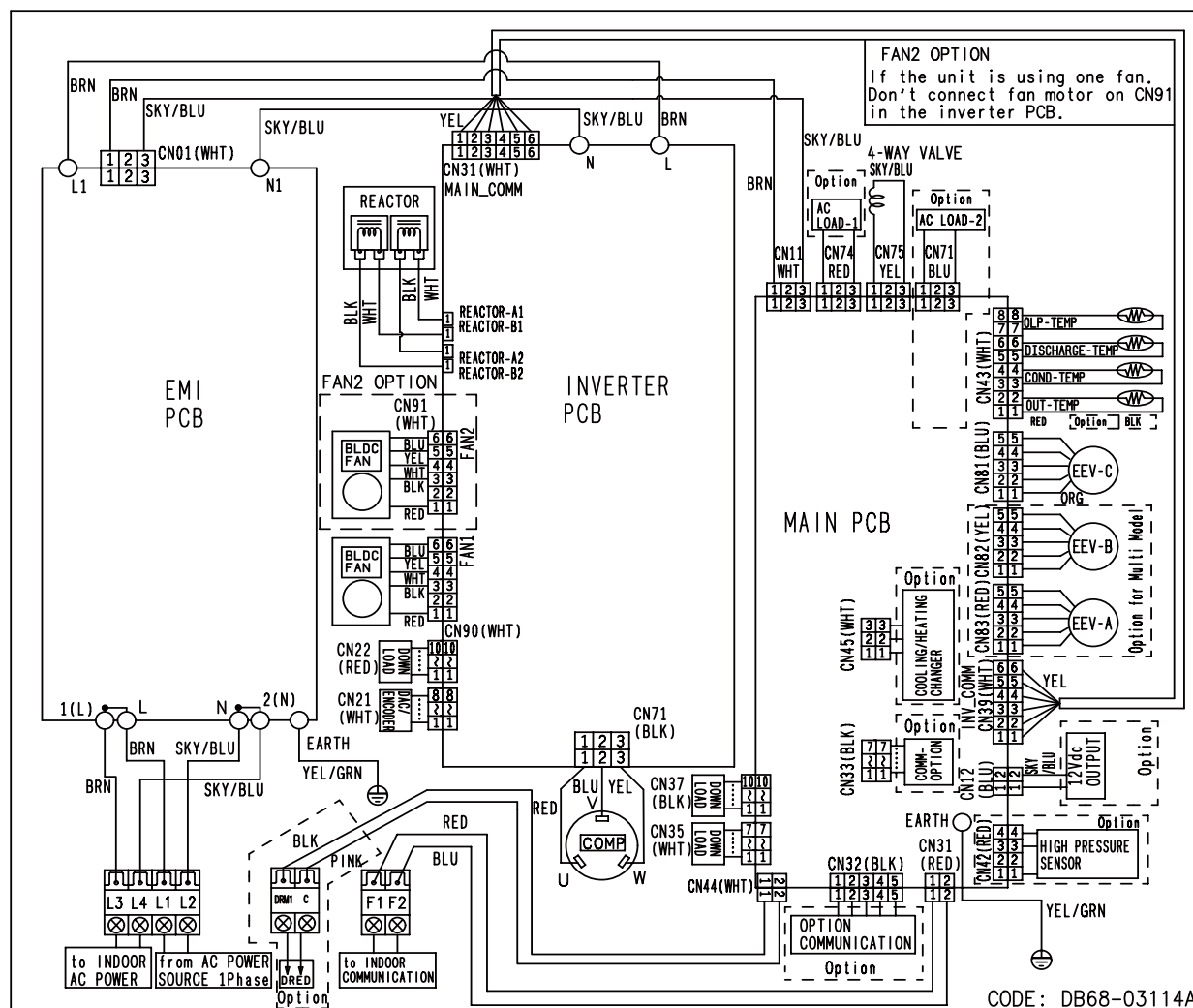
Indoor : Inverter(HP)

AQN36VFUAGM/CV



Outdoor

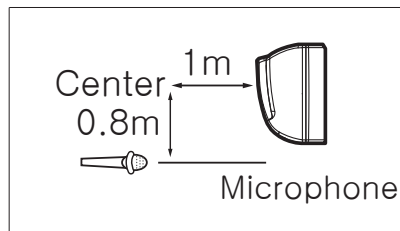
AQX36VFUAGM/CV



5 Sound pressure level

Indoor : Inverter(HP)

Unit: dB(A)



Model	High	Low
AQN36VFUAGM/CV (ODU : AQX36VFUAGM/CV)	49	33

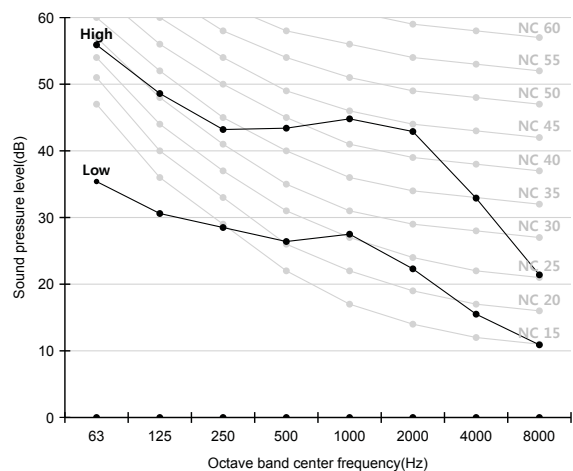
Note

* Specifications may be subject to change without prior notice

- 1) These operation values were obtained in an anechoic room.
- 2) Sound pressure level will vary depending on a range of factors such as the construction of the particular room where the equipment is installed.
- 3) Operation sound level may differ depending on operation and ambient conditions.

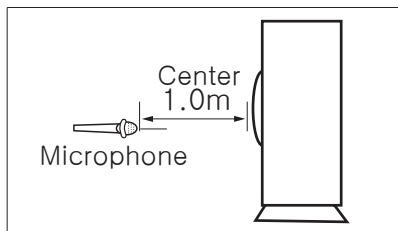
NC curve

1) AQN36VFUAGM/CV (ODU : AQX36VFUAGM/CV)



5 Sound pressure level

Outdoor



Unit: dB(A)	
Model	Cooling
AQX36VFUAGM/CV (IDU : AQN36VFUAGM/CV)	59

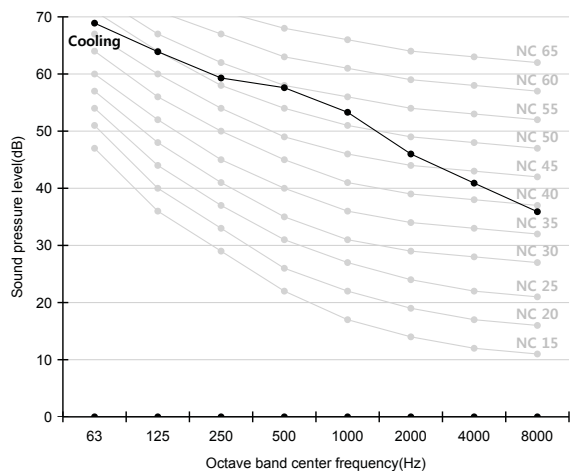
Note

* Specifications may be subject to change without prior notice

- 1) These operation values were obtained in an anechoic room.
- 2) Sound pressure level will vary depending on a range of factors such as the construction of the particular room where the equipment is installed.
- 3) Operation sound level may differ depending on operation and ambient conditions.

NC curve

1) AQX36VFUAGM/CV (IDU : AQN36VFUAGM/CV)

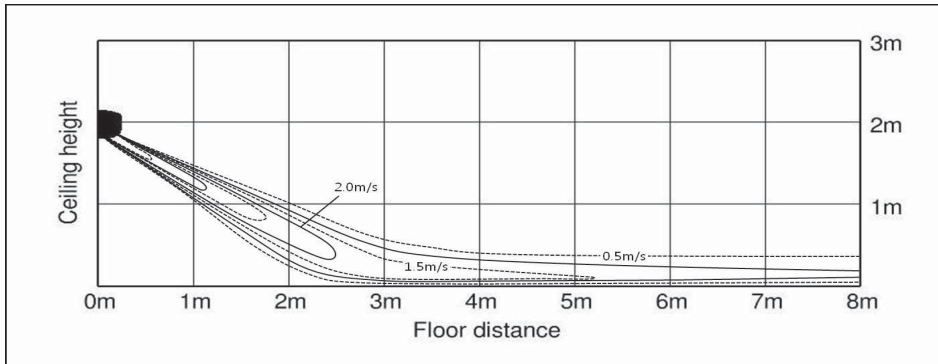


6 Temperature and air flow distribution

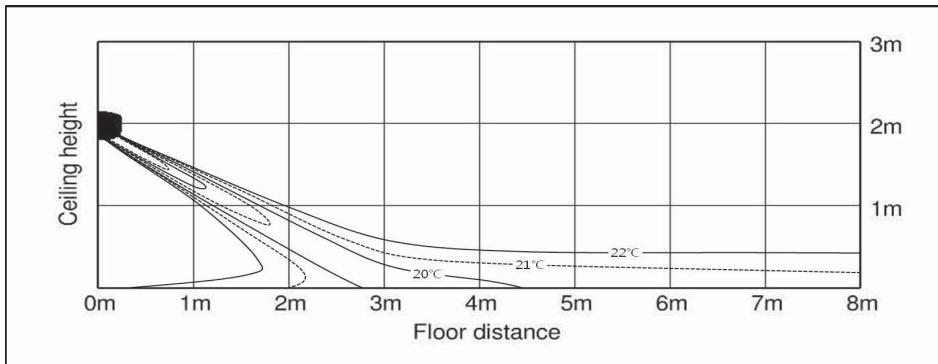
Indoor : Inverter(HP)

AQN36VFUAGM/CV

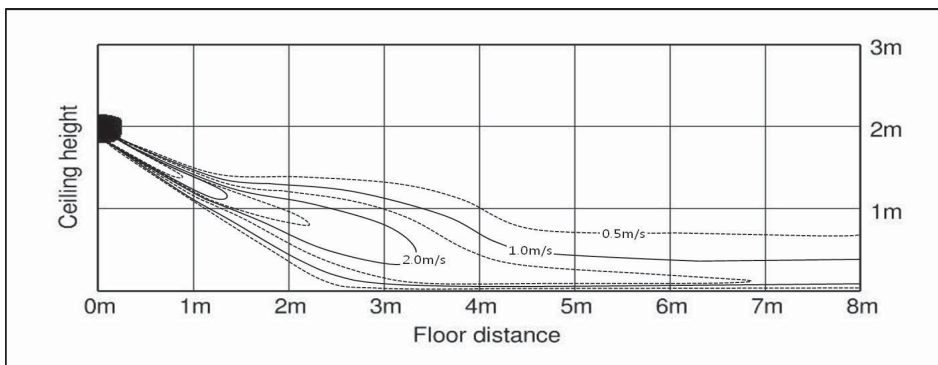
(1) Cooling air velocity distribution



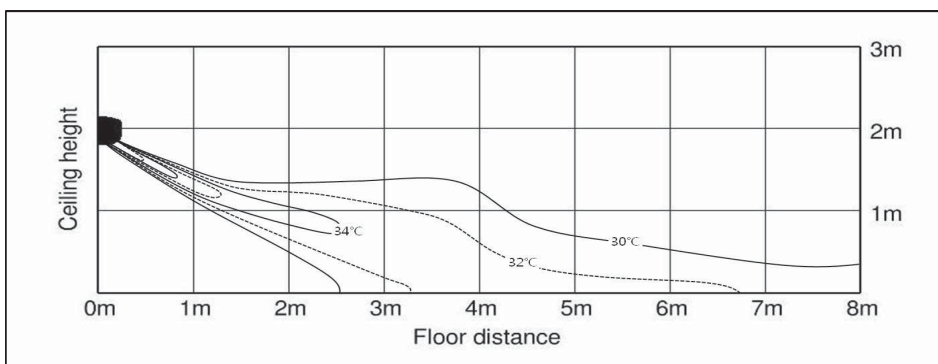
(2) Cooling temperature distribution



(3) Heating air velocity distribution



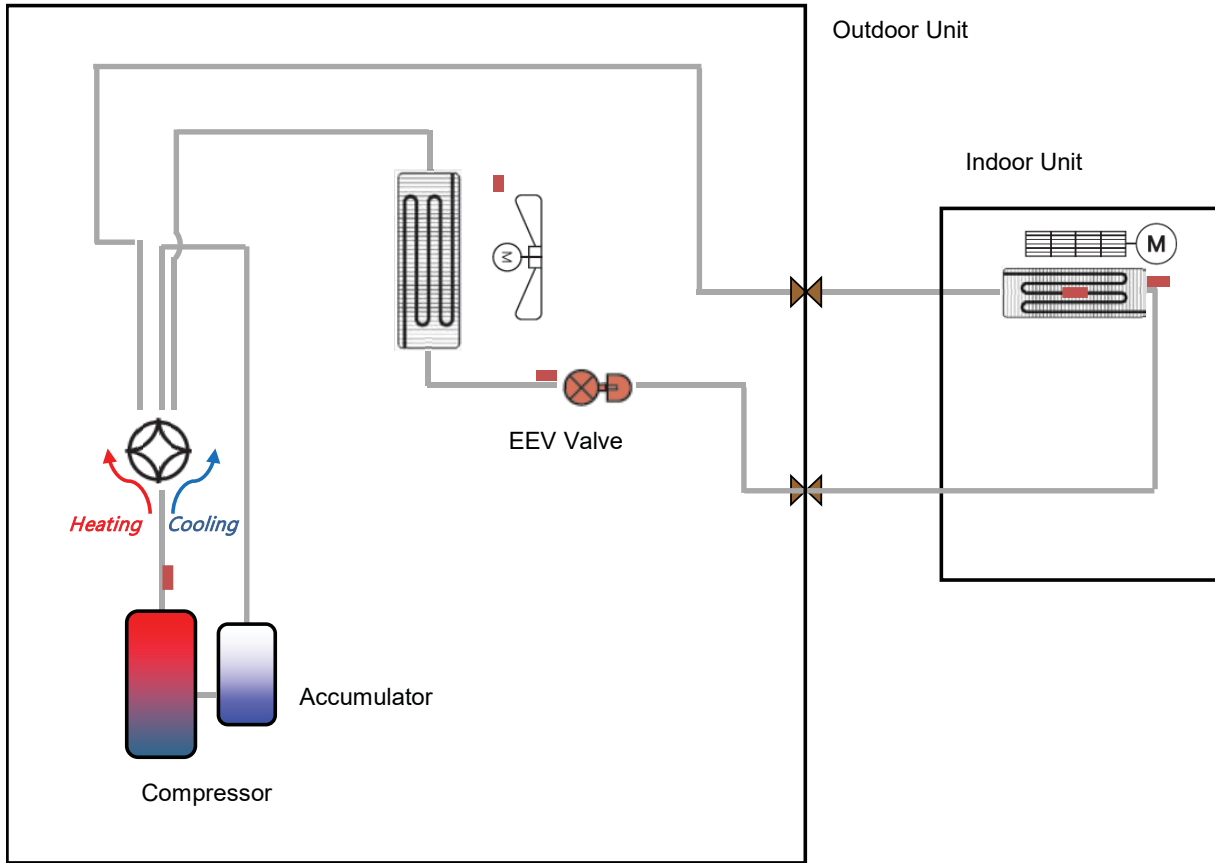
(4) Heating temperature distribution

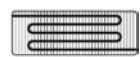


7 Cycle diagram

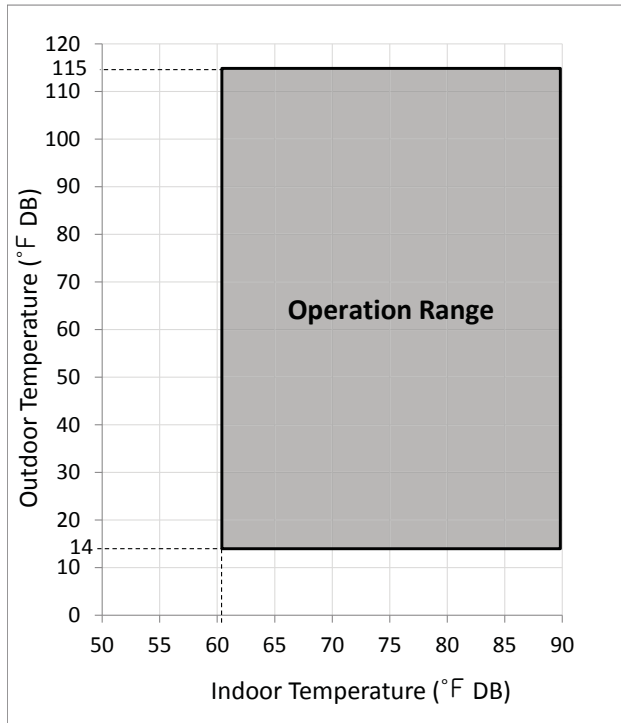
Outdoor

AQX36VFUAGM/CV

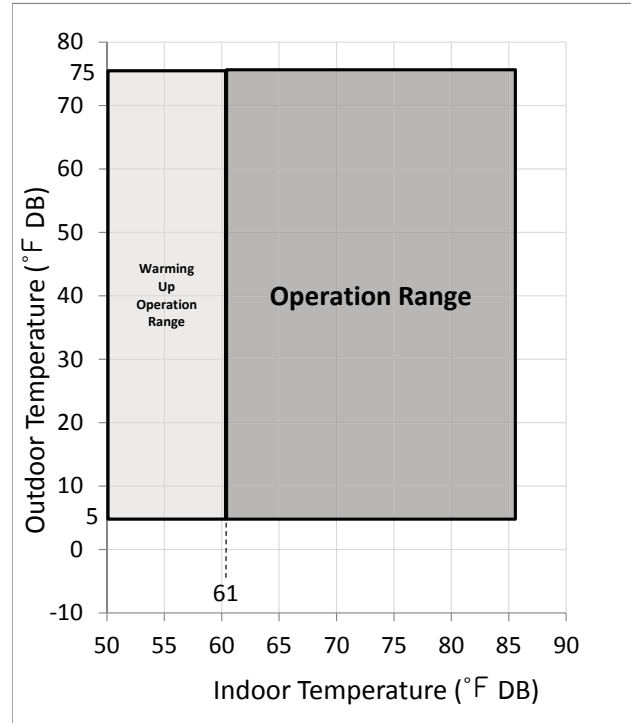


Category		Symbol	Description
Compressor			Rotary Compressor
Accumulator			Accumulator
Heat Exchanger			Condensing/Evaporating unit
Blower			Cross Fan/Propeller Fan
			
Expansion			EEV Valve
Valve			Service valve
			4-way valve
Sensor	Temperature		Pipe/Air Temperature sensor

Cooling



Heating



AQN36VFUAGM/CV +AQX36VFUAGM/CV

Cooling

		Pipe Length (ft)										
		16	33	41	49	66	82	98	115	131	148	164
Level Difference (ft)	98	-	-	-	-	-	-	0.87	0.86	0.85	0.84	0.83
	82	-	-	-	-	-	0.89	0.88	0.87	0.86	0.85	0.84
	66	-	-	-	-	0.91	0.90	0.89	0.88	0.87	0.86	0.85
	49	-	-	-	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
	33	-	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
	23	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
	16	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
	0	1.00	0.99	0.98	0.98	0.96	0.96	0.94	0.94	0.92	0.92	0.90
	-16	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
	-23	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
	-33	-	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
	-49	-	-	-	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
	-66	-	-	-	-	0.91	0.90	0.89	0.88	0.87	0.86	0.85
	-82	-	-	-	-	-	0.89	0.88	0.87	0.86	0.85	0.84
	-98	-	-	-	-	-	-	0.87	0.86	0.85	0.84	0.83

Heating

		Pipe Length (ft)										
		16	33	41	49	66	82	98	115	131	148	164
Level Difference (ft)	98	-	-	-	-	-	-	0.87	0.86	0.85	0.84	0.83
	82	-	-	-	-	-	0.89	0.88	0.87	0.86	0.85	0.84
	66	-	-	-	-	0.91	0.90	0.89	0.88	0.87	0.86	0.85
	49	-	-	-	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
	33	-	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
	23	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
	16	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
	0	1.00	0.99	0.98	0.98	0.96	0.96	0.94	0.94	0.92	0.92	0.90
	-16	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89
	-23	-	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
	-33	-	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87
	-49	-	-	-	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
	-66	-	-	-	-	0.91	0.90	0.89	0.88	0.87	0.86	0.85
	-82	-	-	-	-	-	0.89	0.88	0.87	0.86	0.85	0.84
	-98	-	-	-	-	-	-	0.87	0.86	0.85	0.84	0.83

SAMSUNG

2016.08
Ver.1.0

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