

Digital Inverter 4 series 8 & 10HP

High static duct type

Indoor unit

RAV-SM2244DTP-E
RAV-SM2804DTP-E

Outdoor unit

RAV-SM2244AT8-E
RAV-SM2804AT8-E

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1. Line up

System

		RAV-SM2244AT8-E	RAV-SM2804AT8-E
High static duct	RAV-SM2244DTP-E	✓	-
	RAV-SM2804DTP-E	-	✓

Accessories

Type	Model name
Long life filter Kit	TCB-LK2801DP-E
Drain pump Kit	TCB-DP40DPE

2. Indoor unit (High static duct type)

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2-1. Specifications

High static duct type

(50 Hz)

Model name		Indoor unit	RAV-	SM2244DTP-E	SM2804DTP-E	
		Outdoor unit	RAV-	SM2244AT8-E	SM2804AT8-E	
Cooling capacity ...Note 1			(kW)	20.0	23.7	
Heating capacity ...Note 1			(kW)	22.4	27.0	
Electrical characteristics (factory setting)	Cooling	Indoor unit	Power supply	1 phase 50 Hz 230 V (220 V - 240 V)		
			Running current (220 V - 240 V)	(A)	2.80 (2.93 - 2.68)	3.75 (3.92 - 3.59)
			Power consumption	(kW)	0.530	0.785
			Power factor	(-)	0.82	0.91
		Outdoor unit	Power supply	3-phase 4 wires 50 Hz 380 V - 415 V		
			Running current (380 V - 415 V)	(A)	10.31 - 9.44	13.82 - 12.66
			Power consumption	(kW)	5.89	8.14
			Power factor	(-)	0.87	0.89
	Total	Power consumption (min - max)	(kW)	6.29 (2.63 - 7.60)	8.75 (2.68 - 12.20)	
		EER ...Note 2		3.18	2.71	
	Heating	Indoor unit	Power supply	1 phase 50 Hz 230 V (220 V - 240 V)		
			Running current (220 V - 240 V)	(A)	2.80 (2.93 - 2.68)	3.75 (3.92 - 3.59)
			Power consumption	(kW)	0.530	0.785
			Power factor	(-)	0.82	0.91
		Outdoor unit	Power supply	3-phase 4 wires 50 Hz 380 V - 415 V		
			Running current (380 V - 415 V)	(A)	9.29 - 8.51	11.22 - 10.27
Power consumption			(kW)	5.51	6.51	
Power factor			(-)	0.90	0.88	
Total	Power consumption (min - max)	(kW)	5.91 (2.32 - 7.02)	7.20 (2.55 - 9.32)		
	COP ...Note 2		3.79	3.75		
Maximum Current	Indoor unit	starting current	(A)	8.15	8.15	
	Outdoor unit	starting current	(A)	18.0	20.0	
Appearance				Zinc hot dipping steel plate		
Dimension	Height		(mm)	448		
	Width		(mm)	1400		
	Depth		(mm)	900		
Weight			(kg)	97		
Heat exchanger				Finned tube		
Soundproof / Heat-insulating material				Polyethylene foam		
Fan unit	Fan			Centrifugal fan		
	Standard air flow (Med./Low)		(m ³ /h)	3,800 (3,200 / 2,500)	4,800 (4,200 / 3,500)	
	Motor output		(kW)	1.0 × 1		
	External static pressure (factory setting)		(Pa)	150		
	External static pressure range		(Pa)	50-83-117-150-183-217-250 (7 steps)		
Controller				Remote controller		
Air filter				Sold separately (TCB-LK2801DP-E)		
Drain pump				Sold separately (TCB-DP40DPE)		
Connecting pipe	Gas side		(mm)	Ø28.6		
	Liquid side		(mm)	Ø12.7		
	Drain port		(mm)	25 (Polyvinyl chloride tube)		
Sound pressure level (High/Med./Low) ...Note 3 (factory setting)			(dB(A))	44 / 40 / 36	46 / 42 / 38	
Sound power level (High/Med./Low)			(dB(A))	79 / 75 / 71	81 / 77 / 73	

Note 1: The cooling capacities and electrical characteristics are measured under the conditions specified by JIS B 8615 based on the reference piping. The reference piping consists of 7.5 m piping connected with 0 meter height.

Note 2: The EER and COP are measured under conditions specified by BS EN14511 (2013)
External static pressure is different from factory setting.

Note 3: The sound level are measured in an anechoic chamber in accordance with JIS B 8616.

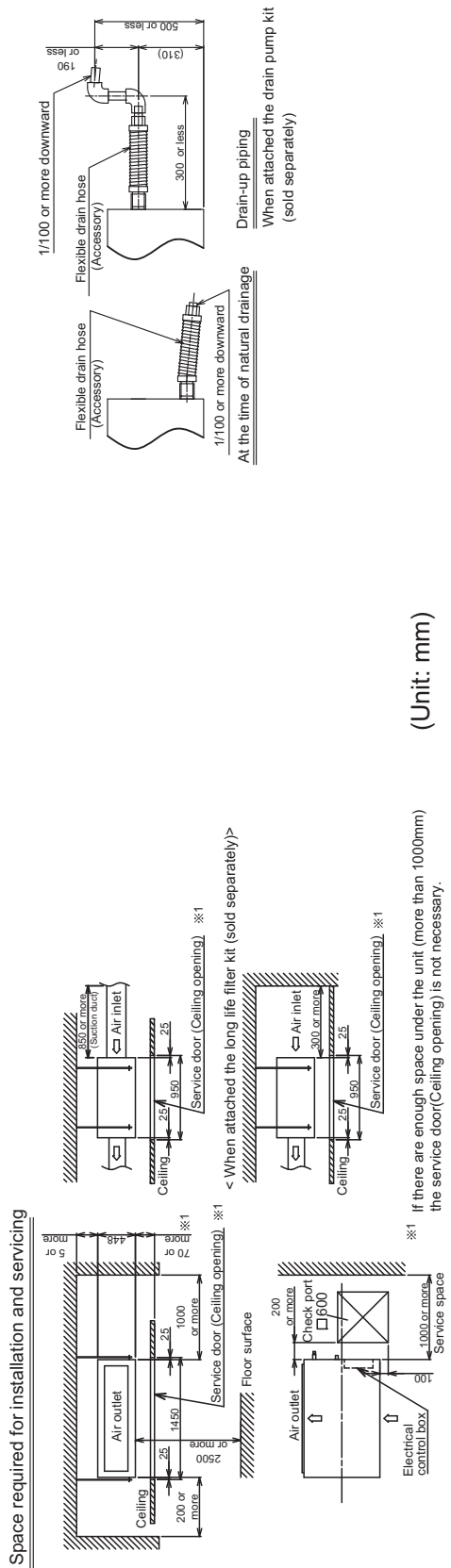
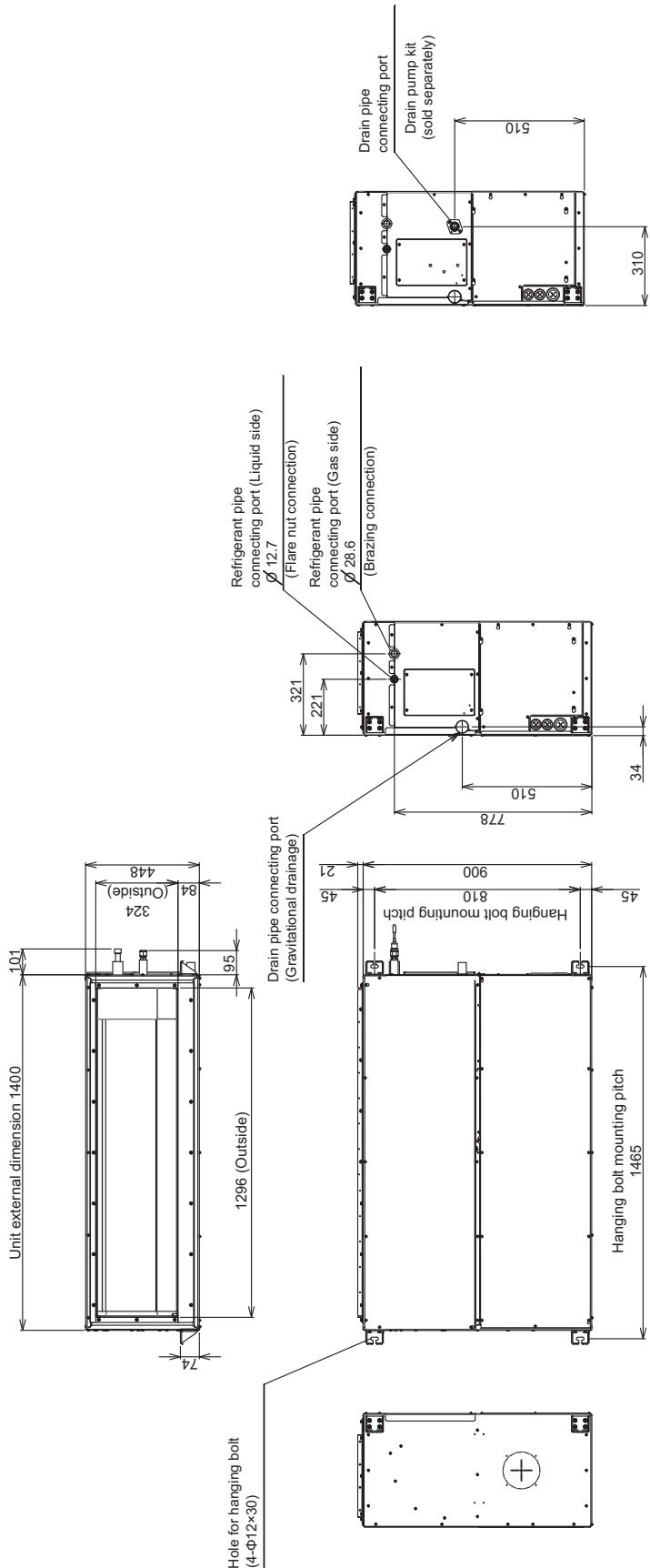
Normally, the values measured in the actual operating environment become larger than the indicated values due to the effects of external sound.

Note: Rated conditions Cooling: Indoor air temperature 27°C DB / 19°C WB, Outdoor air temperature 35°C DB

Heating: Indoor air temperature 20°C DB, Outdoor air temperature 7°C DB / 6°C WB

2-2. Dimension

RAV-SM2244DT-E, SM2804DT-E



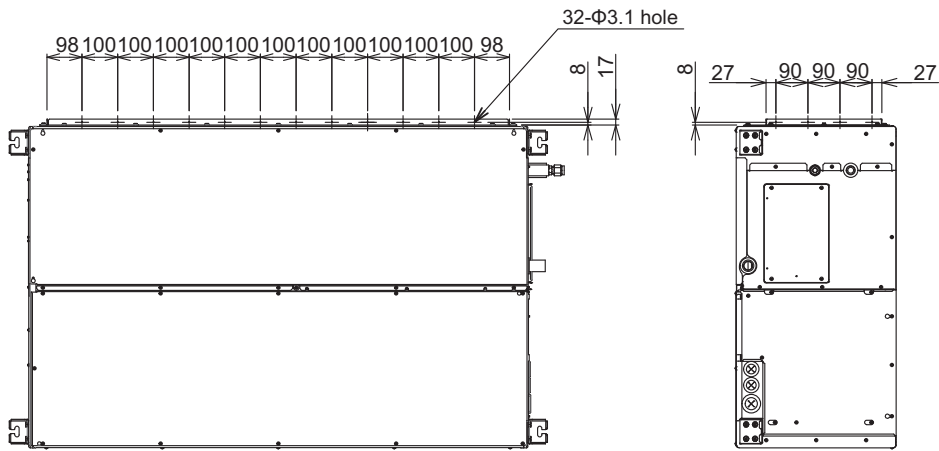
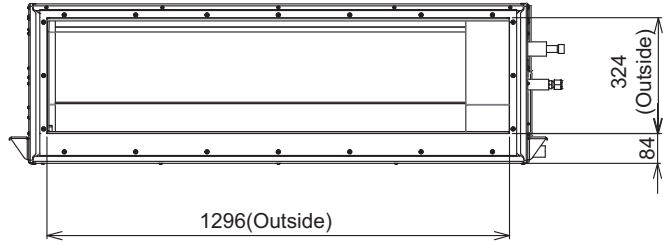
(Unit: mm)

※1 If there are enough space under the unit (more than 1000mm) the service door(Ceiling opening) is not necessary.

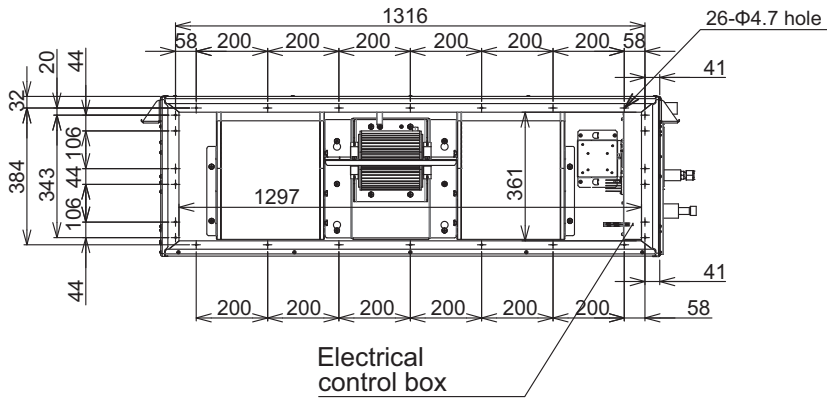
RAV-SM2244DT-E, SM2804DT-E

Duct arrangement

<Air outlet>



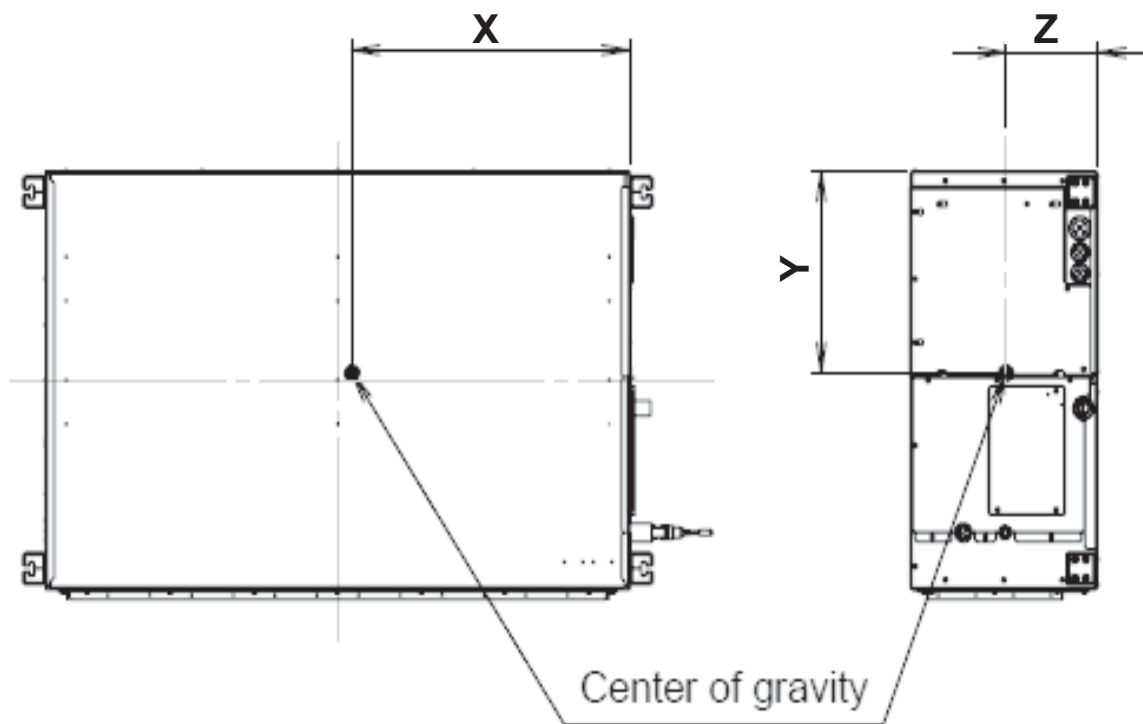
<Air inlet>



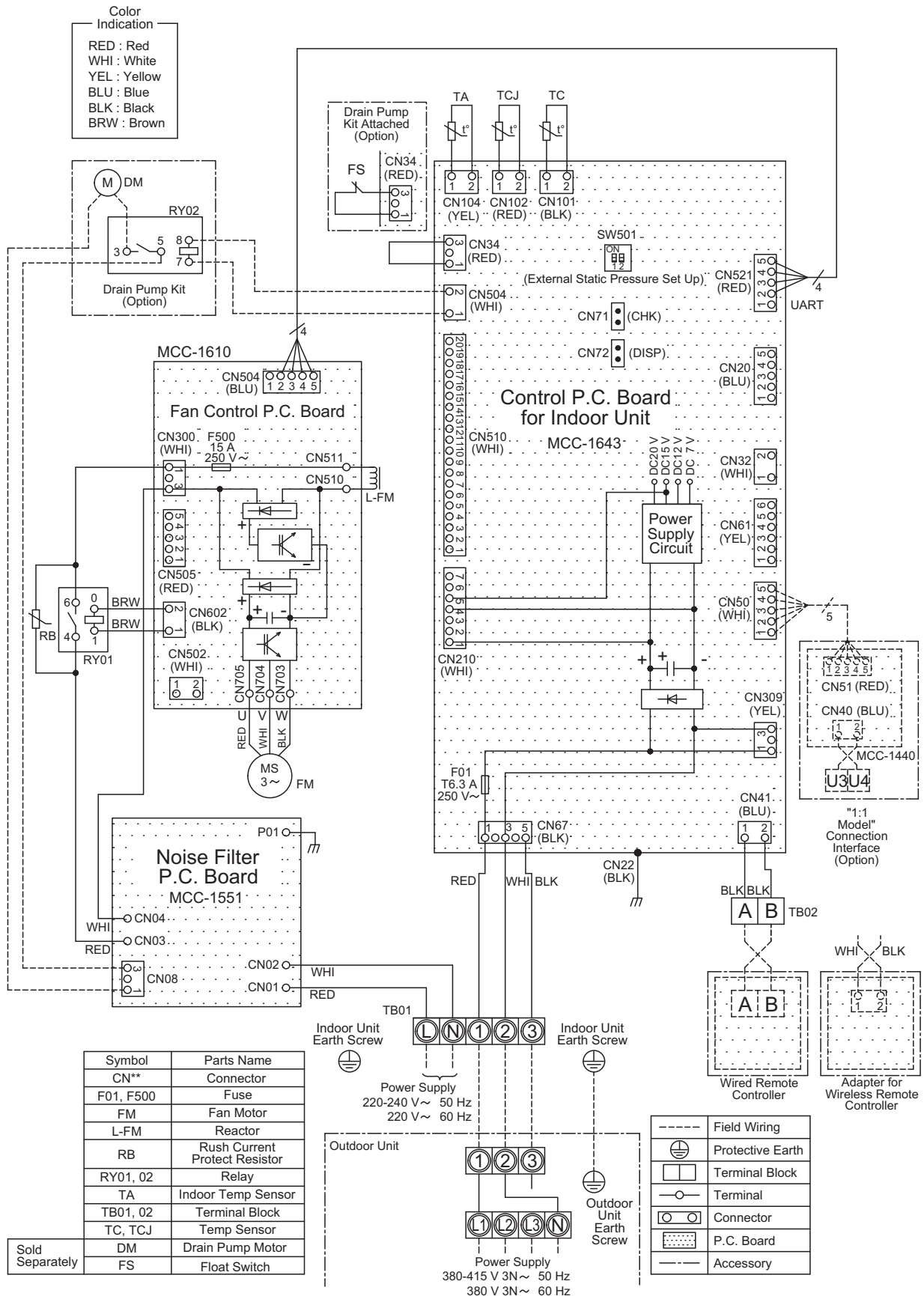
(Unit: mm)

2-3. Center of gravity

Model name	X (mm)	Y (mm)	Z (mm)	Total weight (kg)
RAV-SM2244DTP-E	665	435	220	97
RAV-SM2804DTP-E				

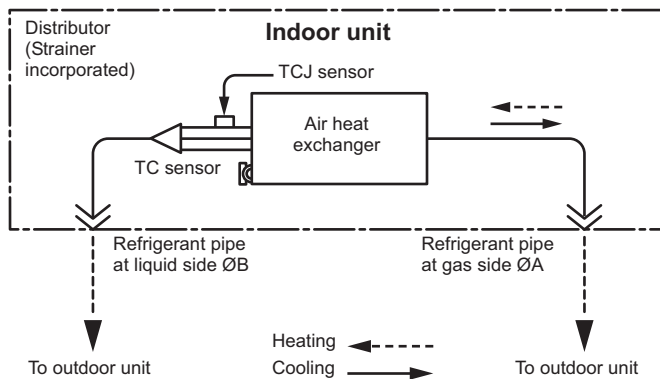


2-4. Wiring diagram



2-5. Refrigerant cycle

RAV-SM2244DT-E, SM2804DT-E



Dimension table

Indoor unit	Outer diameter of refrigerant pipe	
	Gas side ØA	Liquid side ØB
SM224, SM280 type	28.6	12.7

2-6. Electrical characteristics

50 Hz

Model	Nominal Voltage (V-Ph-Hz)	Voltage Range		Fan Motor		Power Supply	
		Min	Max	kW	FLA	MCA	MOCP
RAV-SM2244DTP-E	230-1-50	198	264	1.000	4.1	5.2	15
RAV-SM2804DTP-E	230-1-50	198	264	1.000	5.3	6.6	15

Legend MCA : Minimum Circuit Amps
 MOCP : Maximum Overcurrent Protection (Amps)
 FLA : Full Load Amps
 kW : Fan Motor Rated Output (kW)

2-7. Sensible capacity table

RAV-SM2244DTP-E / RAV-SM2244AT8-E

unit size	outdoor air temp. °CDB	indoor air temp.													
		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB		24°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
224	10.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	12.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	14.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	16.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	18.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	20.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	21.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	23.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	25.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	27.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	29.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	31.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	33.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	35.0	16.4	14.8	18.2	15.8	19.4	16.7	20.0	16.7	20.6	16.7	21.8	16.5	22.8	16.1
	37.0	15.9	14.3	17.6	15.2	18.8	16.2	19.4	16.1	19.9	16.1	21.1	16.0	22.1	15.6
39.0	15.5	13.9	17.1	14.8	18.3	15.7	18.8	15.7	19.4	15.7	20.5	15.6	21.5	15.2	

RAV-SM2804DTP-E / RAV-SM2804AT8-E

unit size	outdoor air temp. °CDB	indoor air temp.													
		14°CWB		16°CWB		18°CWB		19°CWB		20°CWB		22°CWB		24°CWB	
		20°CDB		23°CDB		26°CDB		27°CDB		28°CDB		30°CDB		32°CDB	
		TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC	TC	SHC
280	10.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	12.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	14.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	16.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	18.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	20.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	21.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	23.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	25.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	27.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	29.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	31.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	33.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	35.0	19.5	17.7	21.5	18.8	23.0	20.0	23.7	19.9	24.4	19.9	25.8	19.7	27.0	19.3
	37.0	18.8	17.1	20.8	18.2	22.3	19.3	22.9	19.3	23.6	19.3	25.0	19.1	26.2	18.7
39.0	18.3	16.6	20.2	17.7	21.6	18.8	22.3	18.7	23.0	18.7	24.3	18.6	25.4	18.1	

TC: Total capacity [kW]

SHC: Sensible capacity [kW]

2-8. Part load data

Combination

Indoor unit : RAV-SM2244DTP-E

Outdoor unit : RAV-SM2244AT8-E

	Cooling		Heating	
	Capacity Q (W)	Power consumption W (W)	Capacity Q (W)	Power consumption W (W)
MINIMUM	10870	2630	10270	2320
RATING	20000	6290	22400	5910

Q: Capacity in W
W: Power Consumption
in W

Cooling

Outdoor temperature (°C)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	15880	15880	14110	12350	10580	9580	9580	9580	9580	9580
	W	6300	6230	5210	4310	3560	3170	3170	3170	3170	3170
40	Q	18920	17030	15140	13240	11350	10280	10280	10280	10280	10280
	W	6730	5630	4690	3850	3150	2800	2800	2800	2800	2800
35	Q	20000	18000	16000	14000	12000	10870	10870	10870	10870	10870
	W	6290	5270	4390	3610	2960	2630	2630	2630	2630	2630
30	Q	21000	18900	16800	14700	12600	11410	11410	11410	11410	11410
	W	5840	4890	4080	3360	2750	2450	2450	2450	2450	2450
25	Q	22000	19800	17600	15400	13200	11960	11960	11960	11960	11960
	W	5410	4540	3790	3120	2570	2280	2280	2280	2280	2280
20	Q	23000	20700	18400	16100	13800	12500	12500	12500	12500	12500
	W	4990	4190	3500	2880	2370	2100	2110	2110	2110	2110

Heating

Outdoor temperature (°C)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	29900	26910	23920	20930	17940	14950	13710	13710	13710	13710
	W	7000	6000	5160	4350	3700	3020	2800	2800	2800	2800
15	Q	27010	24310	21610	18910	16210	13510	12390	12390	12390	12390
	W	6490	5530	4730	3950	3300	2720	2530	2530	2530	2530
10	Q	24530	22080	19620	17170	14720	12260	11240	11240	11240	11240
	W	6160	5260	4500	3760	3140	2600	2410	2410	2410	2410
7	Q	22400	20160	17920	15680	13440	11200	10270	10270	10270	10270
	W	5910	5045	4320	3610	3020	2500	2320	2320	2320	2320
5	Q	20900	18810	16720	14630	12540	10450	9580	9580	9580	9580
	W	5740	4890	4190	3510	2930	2440	2260	2260	2260	2260
2	Q	18730	16850	14980	13110	11240	9360	8580	8580	8580	8580
	W	5470	4670	4010	3360	2800	2330	2170	2170	2170	2170
0	Q	14630	13160	11700	10240	8780	7310	6710	6710	6710	6710
	W	4900	4190	3600	3010	2530	2100	1950	1950	1950	1950
-5	Q	14630	13160	11700	10240	8780	7310	6710	6710	6710	6710
	W	4900	4190	3600	3010	2530	2100	1950	1950	1950	1950
-7	Q	13750	12380	11000	9630	8250	6880	6310	6310	6310	6310
	W	4760	4070	3500	2920	2460	2040	1900	1900	1900	1900
-10	Q	12600	11340	10080	8820	7560	6300	5770	5770	5770	5770
	W	4570	3910	3360	2820	2370	1970	1840	1840	1840	1840
-15	Q	10620	9560	8490	7430	6370	5310	4870	4870	4870	4870
	W	4330	3710	3180	2680	2250	1870	1750	1750	1750	1750
-20	Q	8690	7820	6950	6080	5210	4350	3980	3980	3980	3980
	W	4090	3500	3020	2540	2130	1780	1660	1660	1660	1660

Combination

Indoor unit : RAV-SM2804DTP-E

Outdoor unit : RAV-SM2804AT8-E

	Cooling		Heating	
	Capacity Q (W)	Power consumption W (W)	Capacity Q (W)	Power consumption W (W)
MINIMUM	11000	2840	10290	2550
RATING	23700	8750	27000	7200

Q: Capacity in W
W: Power Consumption
in W

Cooling

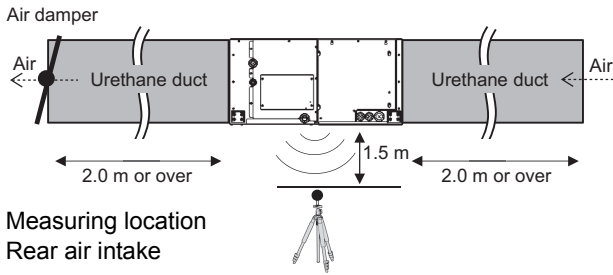
Outdoor temperature (°C)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
46	Q	16010	16010	16010	14190	12160	10140	9410	9410	9410	9410
	W	6520	6520	6520	5490	4520	3640	3390	3390	3390	3390
40	Q	22420	20180	17940	15690	13450	11210	10410	10410	10410	10410
	W	9360	7480	6140	5100	4080	3220	3020	3020	3020	3020
35	Q	23700	21330	18960	16590	14220	11850	11000	11000	11000	11000
	W	8750	7000	5750	4780	3840	3030	2840	2840	2840	2840
30	Q	24640	22180	19710	17250	14780	12320	11430	11430	11430	11430
	W	8140	6520	5360	4460	3580	2830	2660	2660	2660	2660
25	Q	25680	23110	20550	17980	15410	12840	11920	11920	11920	11920
	W	7550	6050	4980	4140	3340	2650	2490	2490	2490	2490
20	Q	26700	24030	21350	18690	16010	13350	12390	12390	12390	12390
	W	6950	5570	4590	3830	3090	2460	2320	2320	2320	2320

Heating

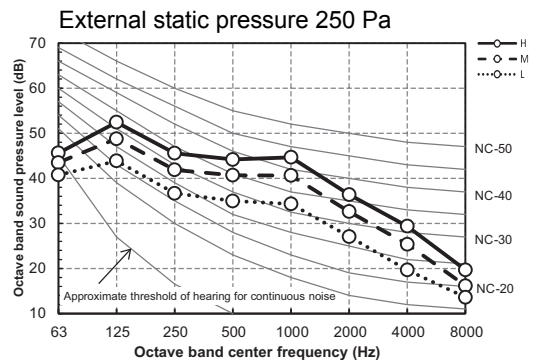
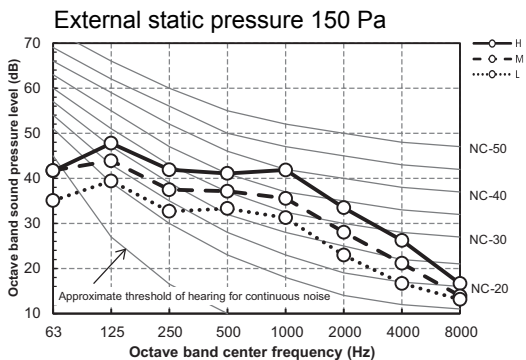
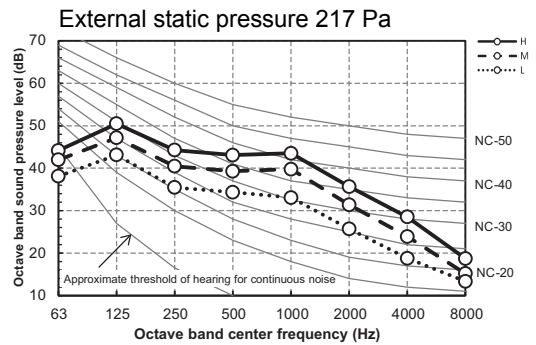
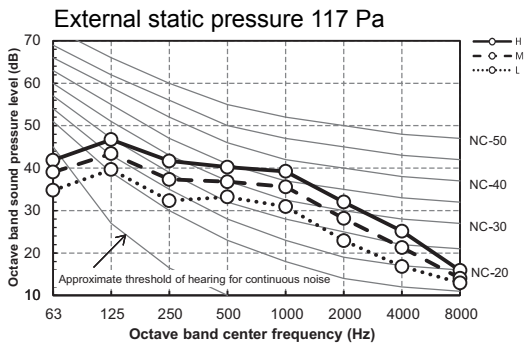
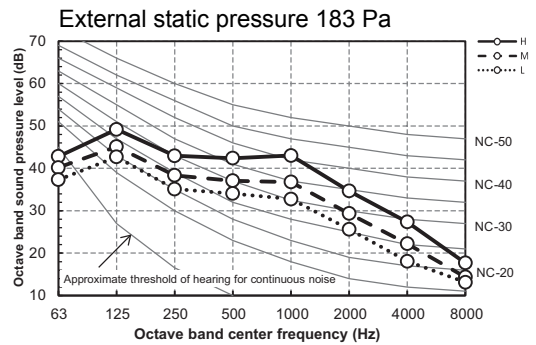
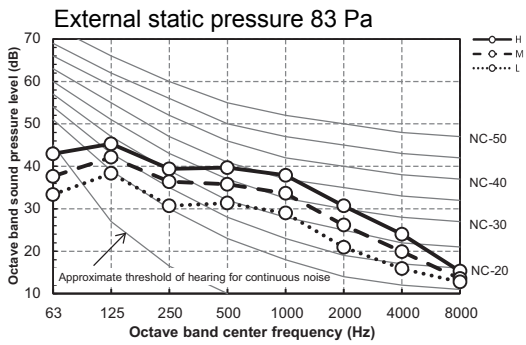
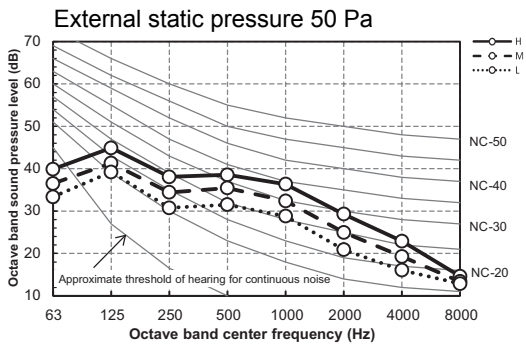
Outdoor temperature (°C)		Load (%)									
		100	90	80	70	60	50	40	30	20	10
20	Q	36040	32430	28830	25220	21620	18020	14410	13730	13730	13730
	W	7960	6880	5950	5170	4380	3690	2970	2860	2860	2860
15	Q	32560	29300	26050	22790	19540	16280	13020	11820	11820	11820
	W	7650	6610	5680	4910	4120	3400	2780	2690	2690	2690
10	Q	29570	26610	23650	20700	17740	14780	11830	10730	10730	10730
	W	7280	6280	5400	4670	3920	3250	2650	2570	2570	2570
7	Q	27000	24300	21600	18900	16200	13500	10800	10290	10290	10290
	W	7200	6220	5350	4630	3890	3220	2640	2550	2550	2550
5	Q	25190	22670	20150	17630	15110	12600	10080	9140	9140	9140
	W	6990	6050	5200	4500	3790	3130	2580	2480	2480	2480
2	Q	22570	20310	18060	15800	13540	11290	9030	8190	8190	8190
	W	6680	5770	4970	4310	3630	3010	2470	2380	2380	2380
0	Q	17630	15870	14100	12340	10580	8820	7050	6400	6400	6400
	W	5870	5080	4380	3800	3210	2670	2200	2130	2130	2130
-5	Q	17630	15870	14100	12340	10580	8820	7050	6400	6400	6400
	W	5870	5080	4380	3800	3210	2670	2200	2130	2130	2130
-7	Q	16580	14920	13260	11600	9950	8290	6630	6020	6020	6020
	W	5820	5040	4350	3780	3190	2660	2190	2120	2120	2120
-10	Q	15180	13670	12150	10630	9110	7590	6070	5510	5510	5510
	W	5600	4860	4180	3640	3070	2560	2120	2050	2050	2050
-15	Q	12800	11520	10240	8960	7680	6400	5120	4650	4650	4650
	W	5310	4600	3980	3460	2930	2440	2020	1950	1950	1950
-20	Q	10480	9430	8380	7330	6290	5240	4190	3800	3800	3800
	W	5020	4360	3770	3280	2770	2330	1930	1870	1870	1870

2-9. Sound data

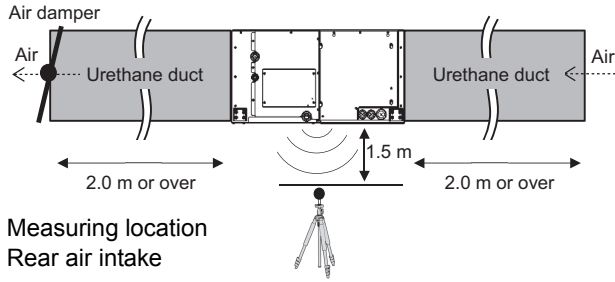
RAV-SM2244DTP-E



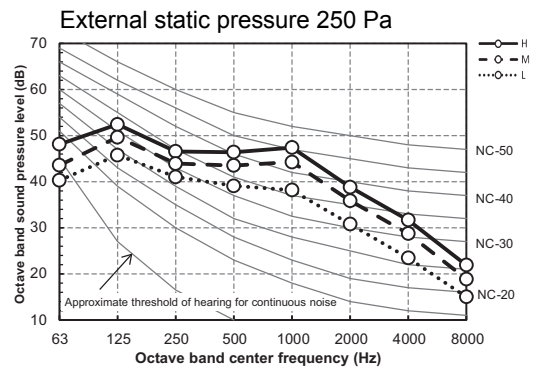
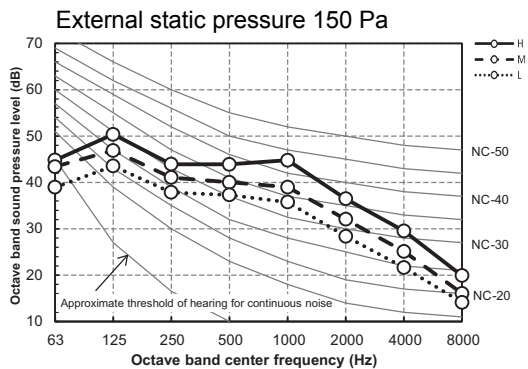
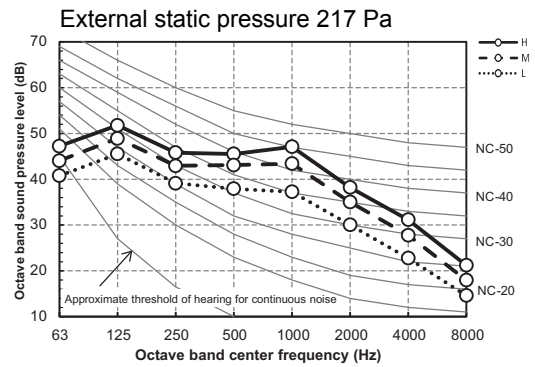
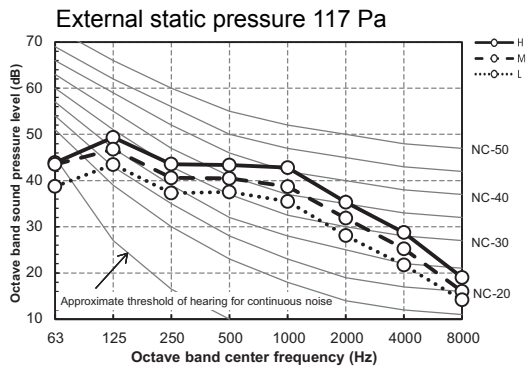
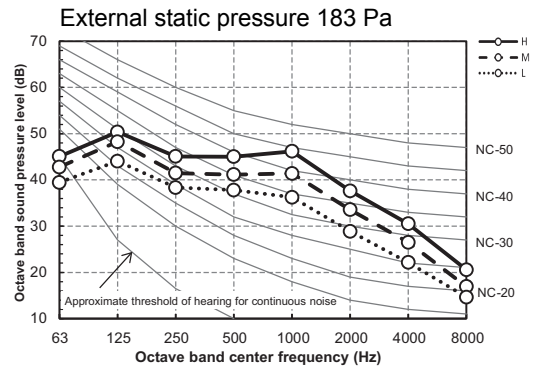
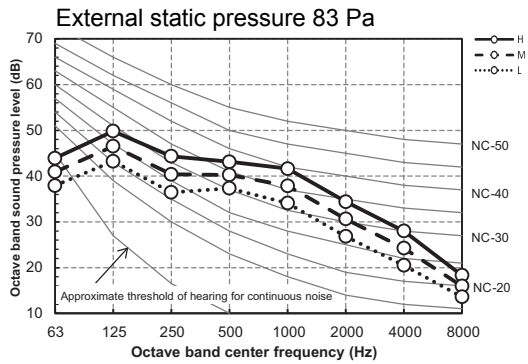
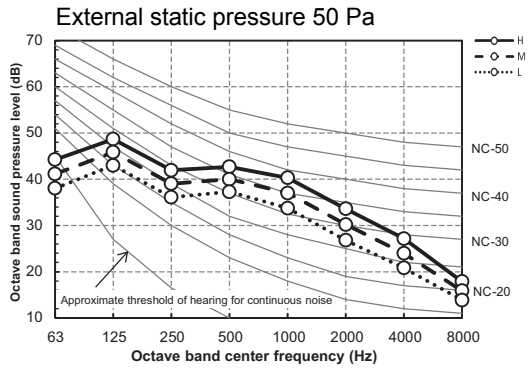
ESP (Pa)	Sound Pressure Level (dBA)		
	H	M	L
50	42.5	38.5	34.5
83	43.0	39.0	35.0
117	43.5	39.5	35.5
150	44.0	40.0	36.0
183	45.0	41.0	37.0
217	46.0	42.0	38.0
250	47.0	43.0	39.0



RAV-SM2804DTP-E

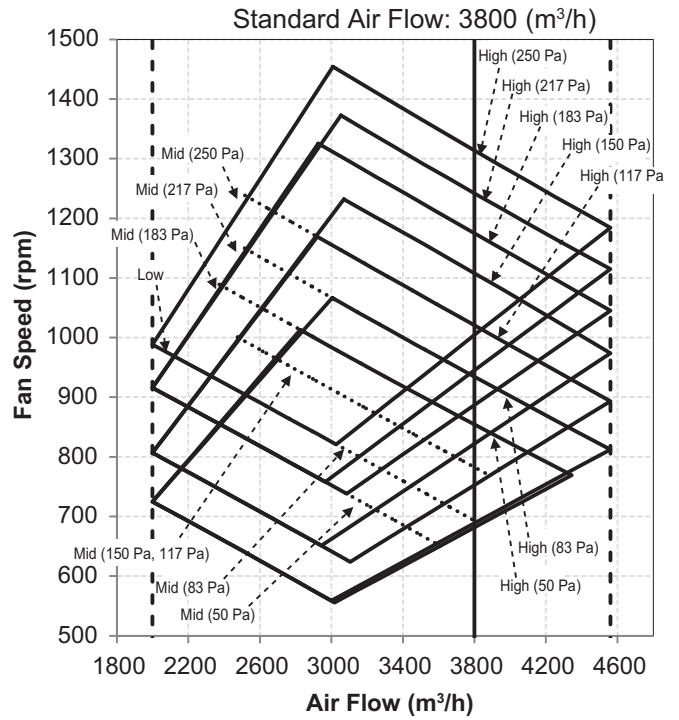
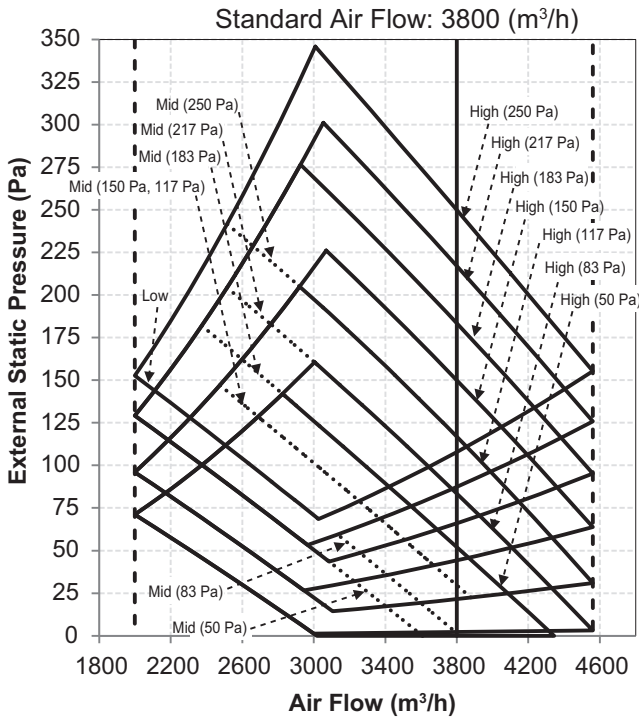


ESP (Pa)	Sound Pressure Level (dBA)		
	H	M	L
50	44.5	40.5	36.5
83	45.0	41.0	37.0
117	45.5	41.5	37.5
150	46.0	42.0	38.0
183	47.0	43.0	39.0
217	48.0	44.0	40.0
250	49.0	45.0	41.0

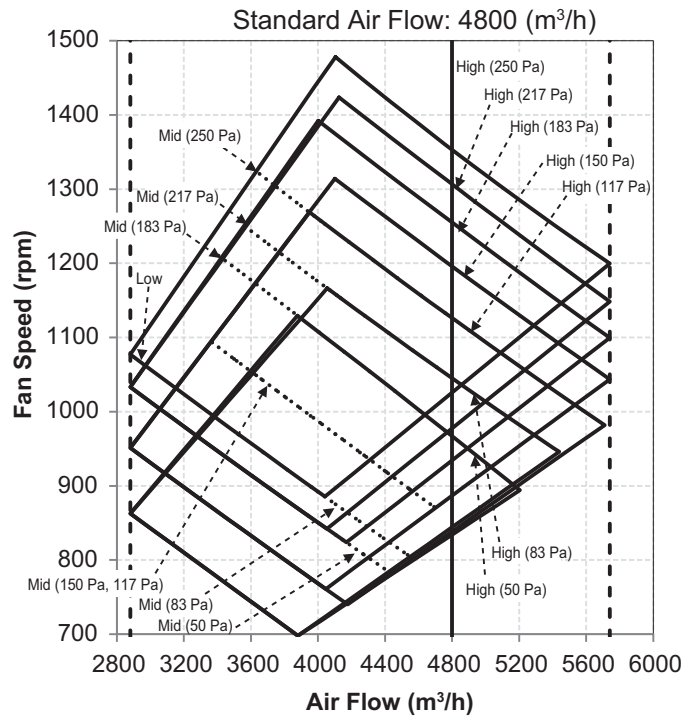
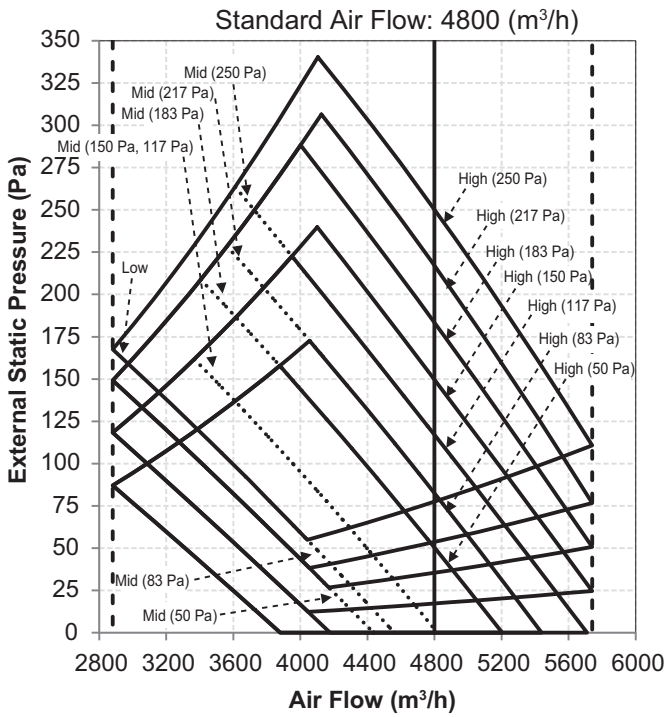


2-10. Fan characteristics

RAV-SM2244DTP-E



RAV-SM2804DTP-E

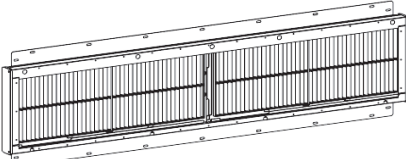
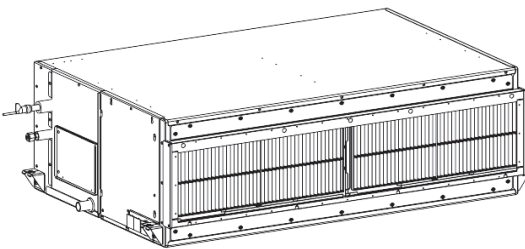
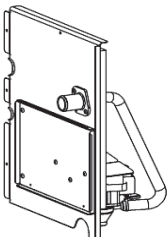
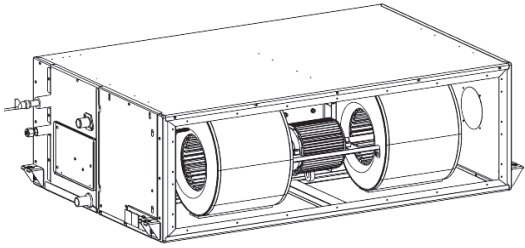


2-11. Accessories

List

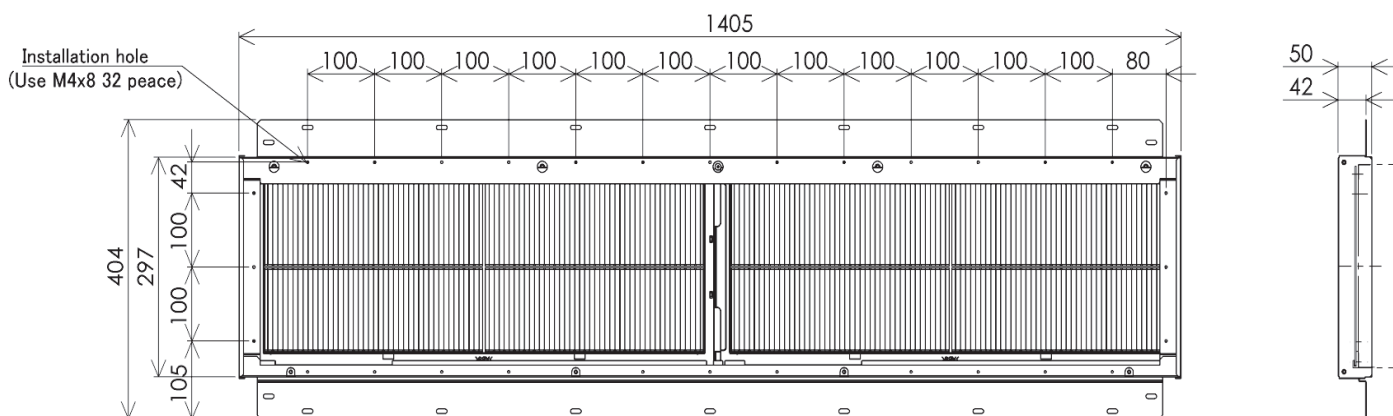
Parts name	Model name	Applied model
Long life filter Kit	TCB-LK2801DP-E	RAV-SM2244, 2804DTP-E
Drain pump Kit	TCB-DP40DPE	RAV-SM2244, 2804DTP-E

Shape

Model name	Shape	Attached shape on the duct unit
TCB-LK2801DP-E		
TCB-DP40DPE		

External dimension

TCB-LK2801D-E



2-12. Reference

Caution for implementing the fresh air intake on site.

Caution

1. Be sure to provide air return.
2. The fresh air shall be treated by heat reclaim ventilator or the like.
3. Recommended treated air temperature is 12°C to 30°C.
4. Be sure to decide the fresh air volume so that mixed suction air with fresh air keep operating temperature.
Provide an air filter in fresh air way to prevent sucking dust.
5. Be sure to insulate the fresh air duct.
6. When using the Booster fan, you must do the interlock wiring with the fan of the indoor unit.
7. Due to the Ta sensor (Indoor suction temperature sensor) becomes not able to detect the correct indoor temperature, switch it to the remote controller sensor control.
(Refer to the installation manual of the indoor unit or manual of the remote controller.)

Characteristics between air volume of fresh air

Up to 10% fresh air intake ratio is available by using the booster fan.

fresh air intake ratio = (fresh air volume) / (total air volume) × 100%

Inter - lock circuit

When do the interlock wiring, the Application control kit (TCB-PCUC1E) sold separately is necessary.

Refer to the installation manual of the Application control kit (TCB-PCUC1E), and use the function of "FAN OUTPUT".

After installation, implement a test run to check that the duct fan of the indoor unit start / stop simultaneously.

(Implement the test run following to the installation manual of the indoor unit.)

3. Outdoor unit

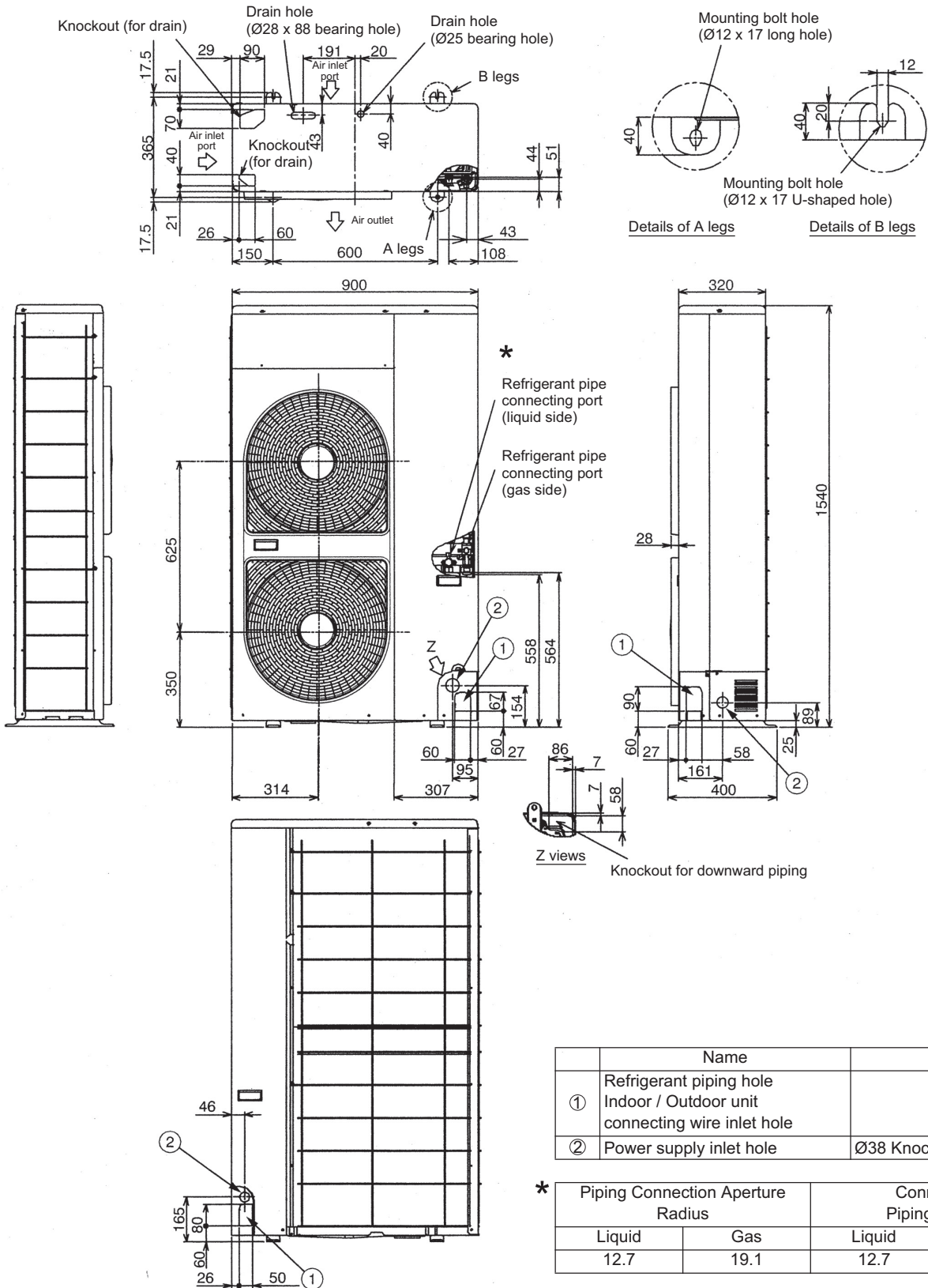
- 3-1. Specifications**
- 3-2. Dimension**
- 3-3. Center of gravity**
- 3-4. Wiring diagram**
- 3-5. Refrigerant cycle**
- 3-6. Sound data**
- 3-7. Capacity correction**
- 3-8. Refrigerant piping design**

3-1. Specifications

Model name	Outdoor unit		RAV-SM2244AT8-E	RAV-SM2804AT8-E	
Power supply	3-phase 380 - 415 V 50 Hz (Power exclusive to outdoor is required.)				
Compressor	Type	Hermetic compressor			
	Motor (kW)	3.75	3.75		
	Pole	4	4		
Refrigerant charged (kg)	5.9		5.9		
Refrigerant control	Pulse motor valve				
Additional refrigerant charge	According to calculation				
Pipe	Max. total length (m)	70		70	
	Min. length (m)	7.5		7.5	
	Height difference	Outdoor lower (m)	30		30
		Outdoor higher (m)	30		30
	Charge less length (mm)	30		30	
Drain port	VP20				
Outer dimension	Height (mm)	1540		1540	
	Width (mm)	900		900	
	Depth (mm)	320		320	
Appearance	Silky shade (Muncel 1Y8.5 - 0.5)				
Total weight (kg)	134		134		
Heat exchanger	Finned tube				
Fan unit	Fan	Propeller fan			
	Standard air flow (m ³ /min)	133		133	
	Motor (W)	100 + 100		100 + 100	
Connecting pipe (Outdoor unit side)	Gas side (mm)	19.1		19.1	
	Liquid side (mm)	12.7		12.7	
Sound pressure level	Cooling / Heating (dB(A))	56 / 57		57 / 58	
Sound power level	Cooling / Heating (dB(A))	72 / 74		74 / 75	
Outside air temperature, Cooling (C)	46 to -15C				
Outside air temperature, Heating (C)	15 to -20C				

3-2. Dimension

RAV-SM2244AT8-E, SM2804AT8-E



	Name	Note
①	Refrigerant piping hole Indoor / Outdoor unit connecting wire inlet hole	—
②	Power supply inlet hole	Ø38 Knockout hole

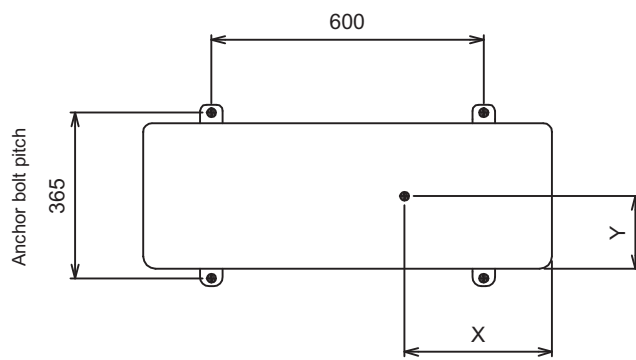
* Piping Connection Aperture Radius		Connection Piping Radius	
Liquid	Gas	Liquid	Gas
12.7	19.1	12.7	28.6

Since the connection diameter of the ball valve in the outdoor unit main body is Ø19.1, use the attached coupling pipe when performing maintenance.

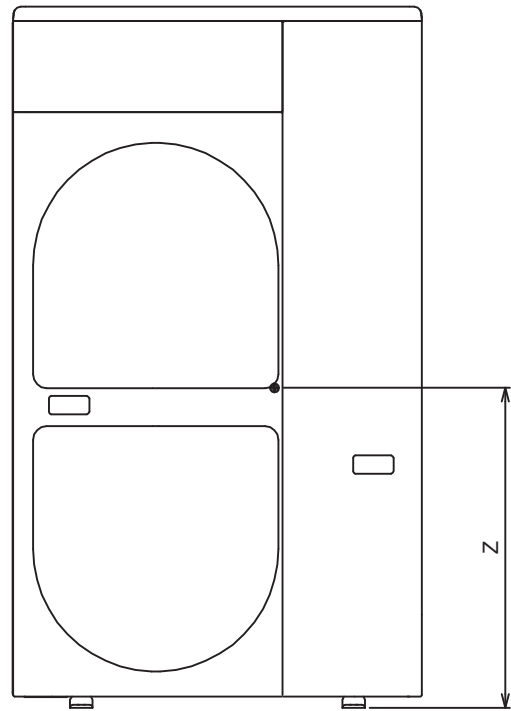
3-3. Center of gravity

Digital Inverter Outdoor unit

Model name	X (mm)	Y (mm)	Z (mm)	Total weight (kg)
RAV-SM2244AT8-E	325	160	705	134
RAV-SM2804AT8-E				

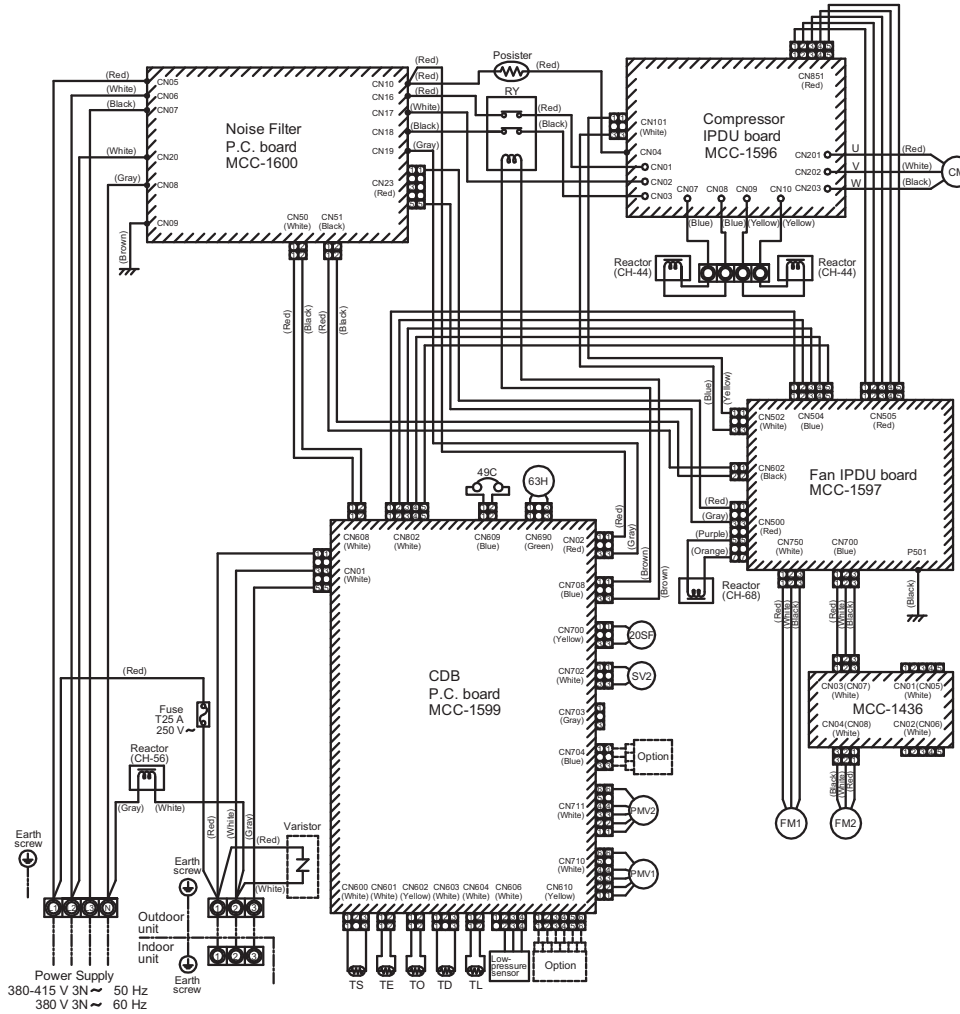


(Unit: mm)



3-4. Wiring diagram

RAV-SM2244AT8-E, SM2804AT8-E



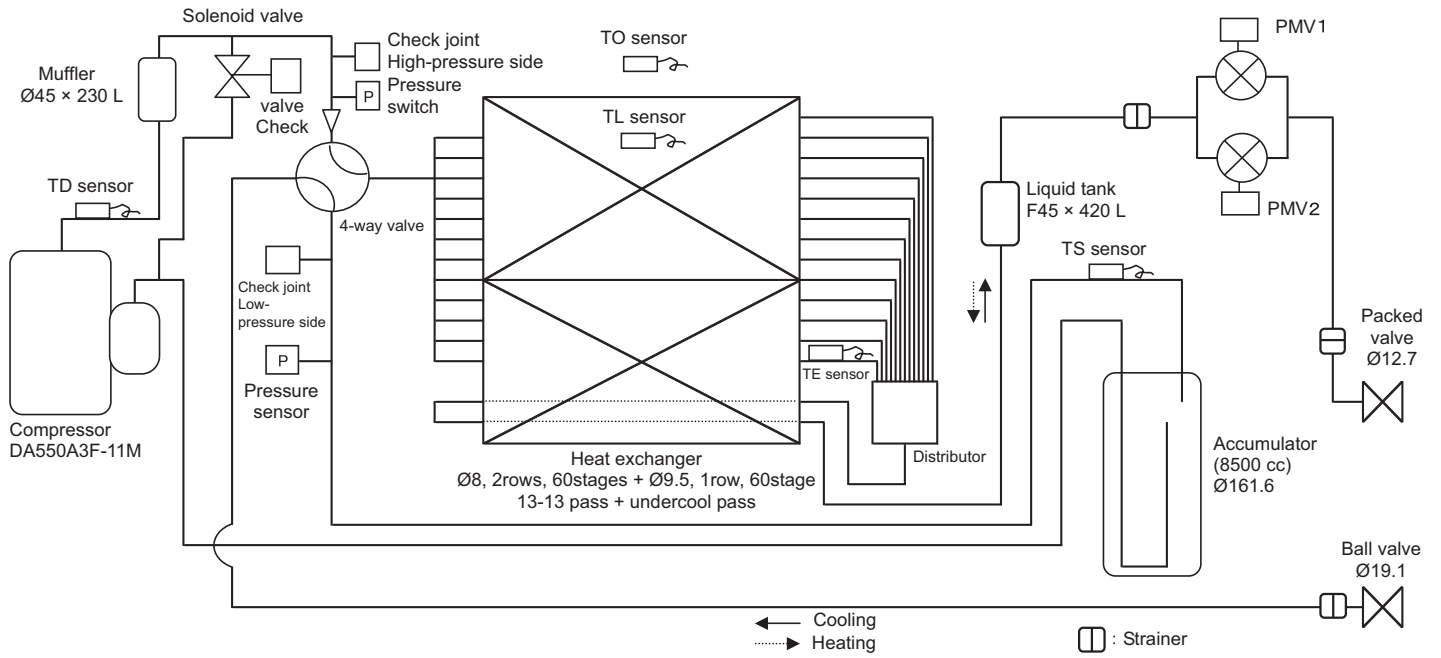
Model Name	Voltage frequency
RAV-SM****AT7	380 V 3N ~ 60 Hz
RAV-SM****AT8-E	380-415 V 3N ~ 50 Hz

Symbol	Part Name	Symbol	Part Name
CM	Compressor	TO	Outside temperature sensor
FM1, 2	Fan motor	SV2	2-way valve coil
PMV1, 2	Pulse motor valve	20SF	4-way valve coil
TD	Pipe temperature sensor (Discharge)	49C	Compressor case thermostat
TS	Pipe temperature sensor (Suction)	63H	High-pressure switch
TE	Heat exchanger sensor 1	RY	Relay
TL	Heat exchanger sensor 2		

1. © indicates the terminal block. Alphanumeric characters in the cycle indicate the terminal No.
2. The two-dot chain line indicates the wiring procured locally.
3. [Hatched box symbol] indicates the P.C. board.
4. For the indoor unit circuit, refer to the wiring diagram of the indoor unit.

3-5. Refrigerant cycle

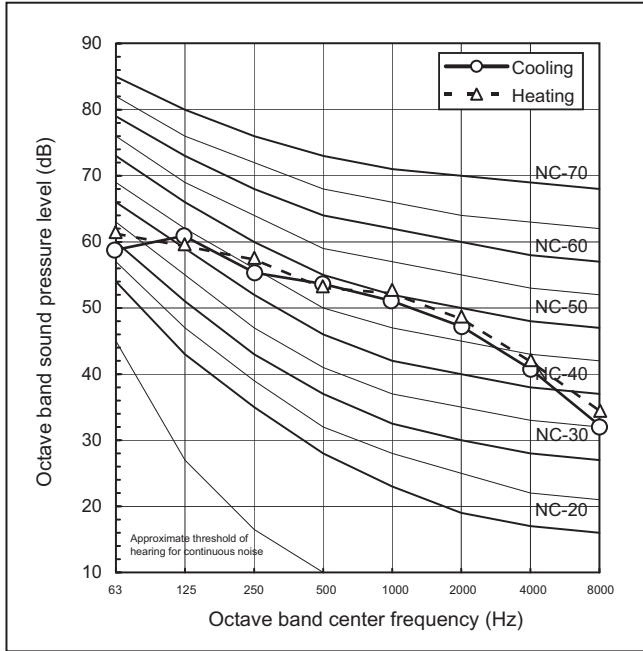
RAV-SM2244AT8-E, SM2804AT8-E



3-6. Sound data

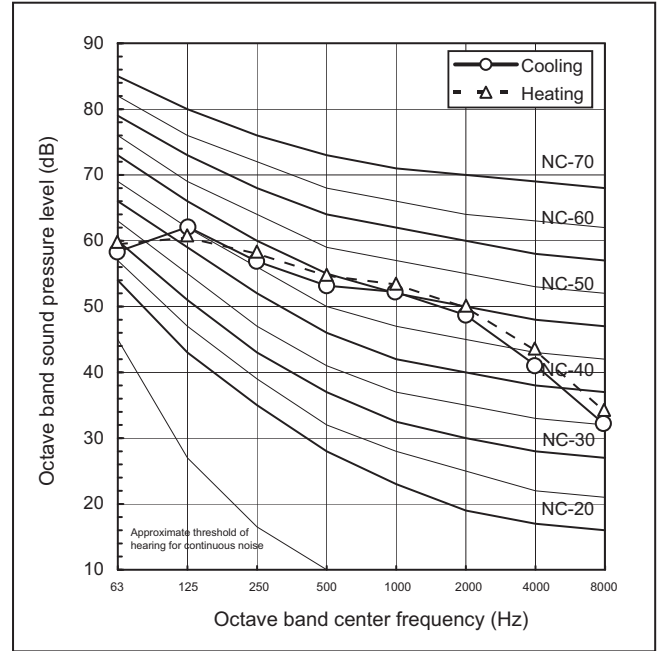
RAV-SM2244AT8-E

Sound pressure level (dB(A))	Cooling	Heating
	56	57



RAV-SM2804AT-E

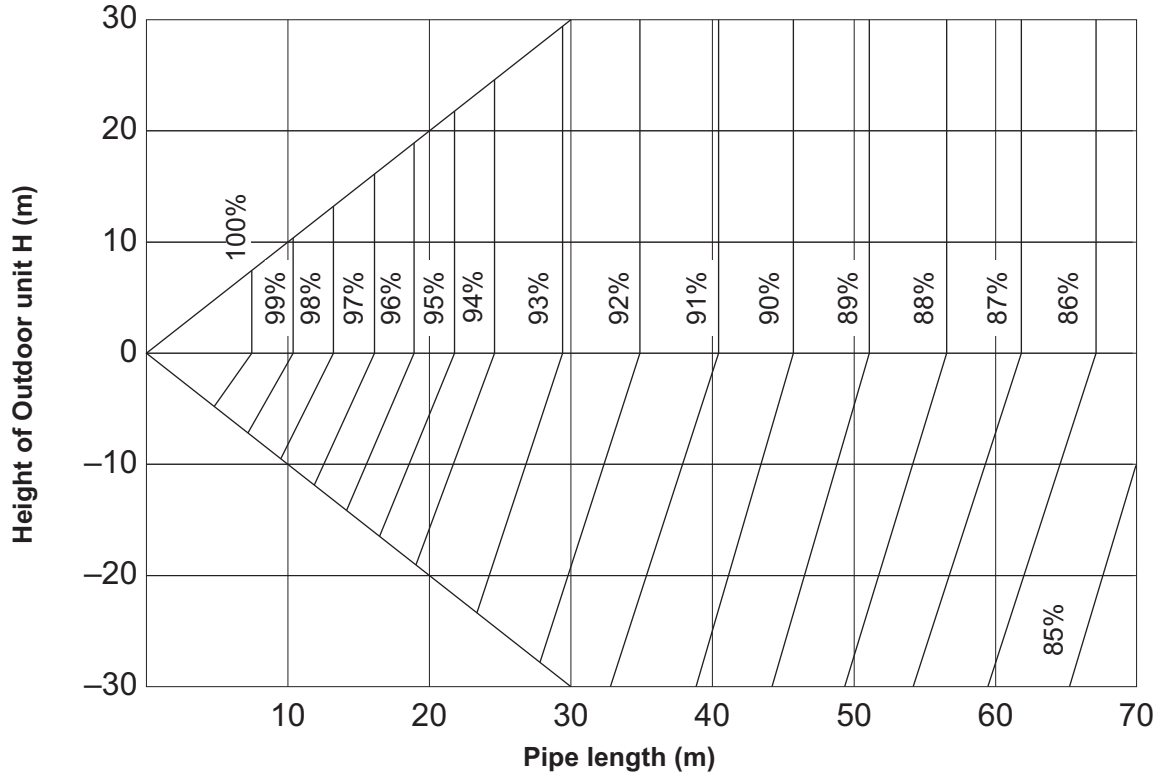
Sound pressure level (dB(A))	Cooling	Heating
	57	58



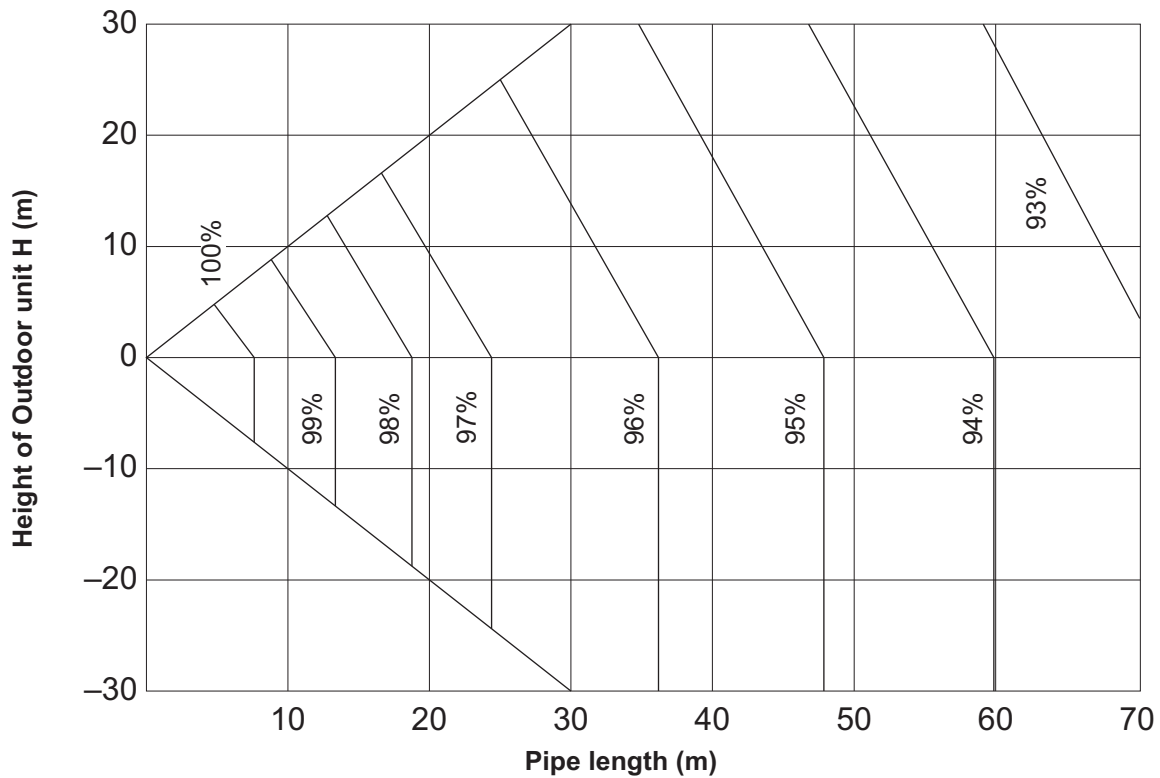
3-7. Capacity correction

Connecting pipe length and lift difference between indoor units vs. capacity correction value

Cooling



Heating



3-8. Refrigerant piping design

Piping connection with different diameter

- Piping connection with different diameter is possible under the below restraint conditions.
- Maximum pipe length is determined by the combination of liquid pipe diameter and gas pipe diameter.

Liquid pipe	Ø12.7 (standard)			
Gas pipe	Ø22.2 (1-size smaller)		Ø28.6 (standard)	
Pipe length	Max. pipe length	Pre-charged	Max. pipe length	Pre-charged
2244	70 m	30 m	70 m	30 m
2804	70 m	30 m	70 m	30 m



Normal piping size



The cooling capacity is lower since the diameter of gas pipe is smaller than standard one.

Liquid pipe	Ø15.9 (1-size larger)			
Gas pipe	Ø22.2 (1-size smaller)		Ø28.6 (standard)	
Pipe length	Max. pipe length	Pre-charged	Max. pipe length	Pre-charged
2244	50 m	20 m	50 m	20 m
2804	50 m	20 m	50 m	20 m

The cooling capacity is lower since the diameter of gas pipe is smaller than standard one.

Unit	Gas pipe	Pipe length (m)	7.5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70
2244	Ø22.2	Rate of decrease capacity	92 to 91%	91 to 89%	89 to 87%	87 to 86%	86 to 84%	84 to 81%	81 to 79%
2804									

Digital Inverter / High static duct 8 & 10HP Engineering Data Book

Model name:

RAV-SM__4DTP-E

May, 2016 First Edition

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