HITACHI

TECHNICAL CATALOGUE

MONO SPLIT

RAK-18REF
RAK-25REF/25REFC
RAK-35REF/35REFC
RAK-50REF/50REFC

RAC-18WEF
RAC-25WEF
RAC-35WEF

RAC-50WEF

HITACHI

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CONTENTS

1 SPECIFICATIONS

1.1. WALL TYPE

INDOOR	Unit	RAK-18REF	RAK-25REF RAK-25REFC	RAK-35REF RAK-35REFC	RAK-50REF RAK-50REFC
Nominal capacity adjustable		no	no	no	no
Nominal Cooling capacity (min - max)	kW	2.00 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90- 5.20)
Cooling sensible capacity	kW	1.99	2.28	2.87	3.47
Nominal Heating capacity (min - max)	kW	2.50 (0.90 - 3.20)	3.40 (0.90 - 4.40)	4.20 (0.90 - 5.00)	6.00 (2.20 - 7.30)
Noise level cooling (sound pressure) (SL / L / M / H)	dB(A)	21 / 24 / 33 / 37	22 / 24 / 33 /40	25 / 26 / 36 / 43	28 / 30 / 40 / 46
Noise level heating (sound pressure) (SL / L / M / H)	dB(A)	19 / 22 / 33 / 38	20 / 23 / 34 / 41	26 / 27 / 36 / 44	25 / 30 / 39 / 47
Noise level (sound power)	dB(A)	51	54	57	60
Air flow cooling mode (SL / L / M / H)	m^3/h	312/350/400/440	333/370/430/510	333/400/485/600	333/450/600/700
Air flow heating mode (SL / L / M / H)	m^3/h	312/350/420/480	333/400/500/570	333/520/550/660	433/510/650/770
Fan Motor	W	38	38	38	38
Dehumidification	l/h	1.2	1.4	1.6	2.0
Dimensions (H x W x D)	mm	280 x 780 x 215	280 x 780 x 215	280 x 780 x 215	280 x 780 x 215
Weight	kg	7.7	7.7	7.7	8.2
Colour		Star White (N9.3)	Star White (N9.3)	Star White (N9.3)	Star White (N9.3)
Condensate Drain	mm	φ16mm	φ16mm	φ16mm	φ16mm
Running current (C/H)	A	1.09-4.39/1.09-4.22	1.09-5.61/1.09-5.43	1.09-6.35/1.09-7.39	2.17-9.13/2.17-11.96
Power supply		220-230V	220-230V	220-230V	220-230V
Cable section (Interconnection)	mm²	1.50x 3+EARTH/-	1.50x 3+EARTH/-	1.50x 3+EARTH/-	2.50x 3+EARTH/-
Piping diameter (Liq / Gas)	Inch	1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"	1/4" / 1/2"
Drain diameter (ext)	mm	φ16mm	φ16mm	φ16mm	φ16mm
Remote control (standard/optional) *		RAR-7PE1/SPX-RCDB	RAR-7PE1/SPX-RCDB	RAR-7PE1/SPX-RCDB	RAR-7PE1/SPX-RCDB
Filter					
ACL Filter		Activated carbon (optional)	Activated carbon (optional)	Activated carbon (optional)	Activated carbon (optional)
ACL part name		SPX-CFH25	SPX-CFH25	SPX-CFH25	SPX-CFH25
Pre-filter (Standard/Optional)		Washable/ SPX-SPF8	Washable/ SPX-SPF8	Washable/ SPX-SPF8	Washable/ SPX-SPF8

NOTE:

1. *The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the ISO 5151.*

Operation Conditions		*Cooling*	*Heating*
Indoor Air Inlet Temperature	***dB***	*27.0 °C*	*20.0 °C*
	WB	*19.0 °C*	*15.0 °C*
Outdoor Air Inlet Temperature	***dB***	*35.0 °C*	*7.0 °C*
	WB	*24.0 °C*	*6.0 °C*
***Piping Length**: 5.0 meters; **Piping Lift**: 0 meter* ***dB**: Dry Bulb; **WB**: Wet Bulb*			

2. *The Sound Pressure Level is based on the following conditions:*
   - *0.8 meter beneath indoor height center*
   - *1 meter from Discharge grille*

   The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

1.2. WALL TYPE

OUTDOOR		UNIT	RAC-18WEF	RAC-25WEF	RAC-35WEF	RAC-50WEF
Nominal Cooling capacity (min - max)		kW	2.00 (0.90 - 2.50)	2.50 (0.90 - 3.10)	3.50 (0.90 - 4.00)	5.00 (1.90 - 5.20)
Nominal Heating capacity (min - max)		kW	2.50 (0.90 - 3.20)	3.40 (0.90- 4.40)	4.20 (0.90 - 5.00)	6.00 (2.20 - 7.30)
Nominal cooling power input (min - max)		kW	0.58(0.25 - 1.01)	0.70 (0.25 - 1.29)	1.09 (0.25 - 1.46)	1.56 (0.50 - 2.10)
Nominal heating power input (min - max)		kW	0.62(0.25 - 0.97)	0.88 (0.25 - 1.25)	1.10 (0.25 - 1.70)	1.66 (0.50 - 2.75)
EER / COP			3.45/4.03	3.57/3.86	3.21/3.82	3.21/3.61
SEER / SCOP			6.10/4.20	6.10/4.20	6.10/4.20	6.10/4.30
Energy class (SEER/SCOP)			A++/A+	A++/A+	A++/A+	A++/A+
Noise level cooling (sound pressure)		dB(A)	45	47	48	50
Noise level heating (sound pressure)		dB(A)	46	48	49	50
Noise level (sound power)		dB(A)	59	61	62	64
Air flow (Cooling / Heating)		m^3/h	1860 / 1620	1860 / 1620	1860 / 1620	2160 / 2160
Dimensions (H x W x D)		mm	530x660 x278	530x660 x278	530x660 x278	600x792x299
Weight		kg	23.7	23.7	25	39.5
Colour			Beige (5Y7/2)	Beige (5Y7/2)	Beige (5Y7/2)	Beige (5Y7/2)
Power supply			230V/1Ph/50Hz	230V/1Ph/50Hz	230V/1Ph/50Hz	230V/1Ph/50Hz
Recommended fuse size		A	15	15	15	25
Starting current (C/H)		A	3.19/3.62	3.84/4.56	5.41/5.56	7.16/7.62
Running current (C/H)		A	1.09-4.39/1.09-4.22	1.09-5.61/1.09-5.43	1.09-6.35/1.09-7.39	2.17-9.13/2.17-11.96
Cable section (Power)		mm^2	1.50x 2+EARTH	1.50x 2+EARTH	1.50x 2+EARTH	2.50x 2+EARTH
Cable section (Interconnection)		mm^2	1.50x 3+EARTH	1.50x 3+EARTH	1.50x 3+EARTH	2.50x 3+EARTH
Piping diameter (Liq / Gas)			1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"	1/4" / 1/2"
Minimum piping length		m	3	3	3	3
Maximum piping length / height difference		m	20 / 10	20 / 10	20 / 10	20 / 10
Current quantity of refrigerant / Chargeless		kg	0.53	0.53	0.70	0.93
Chargeless / Additional refrigerant charge		m / g/m	20/-	20/-	20/-	20/-
Working range (cooling / heating)		°C	-10°C-46°C/ -15°C-21°C	-10°C-46°C/ -15°C-21°C	-10°C-46°C/ -15°C-21°C	-10°C-46°C/ -15°C-21°C
Refrigerant			R32	R32	R32	R32
Condenser Fan			Propeller Fan	Propeller Fan	Propeller Fan	Propeller Fan
Compressor	Type		ROTARY	ROTARY	ROTARY	2 Cylinder Rotary
	Oil Charge	mL	320±20	320±20	320±20	480±20
	Oil Type		ACS-68R or equivalent	ACS-68R or equivalent	ACS-68R or equivalent	ACS-68R or equivalent
	Coil Resistance	Ω	2.167 at 20℃	2.167 at 20℃	2.167 at 20℃	1.354 at 20℃
	Quantity		1	1	1	1

NOTE:

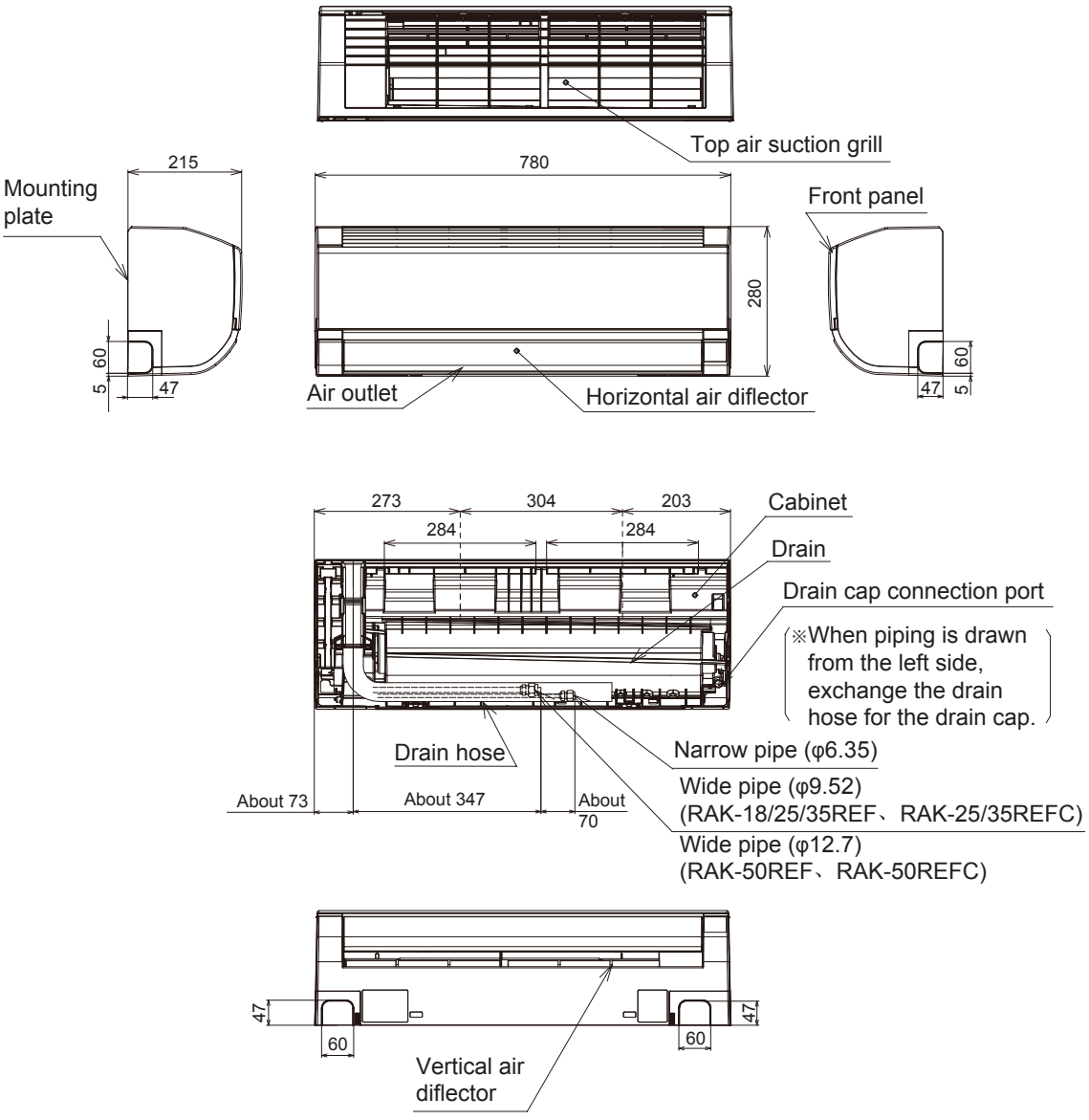
1. *The Sound Pressure Level is based on the following conditions:*
   - *1 meter from the unit front surface and 1 meter from floor level*

   The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

2 DIMENSIONAL DATA

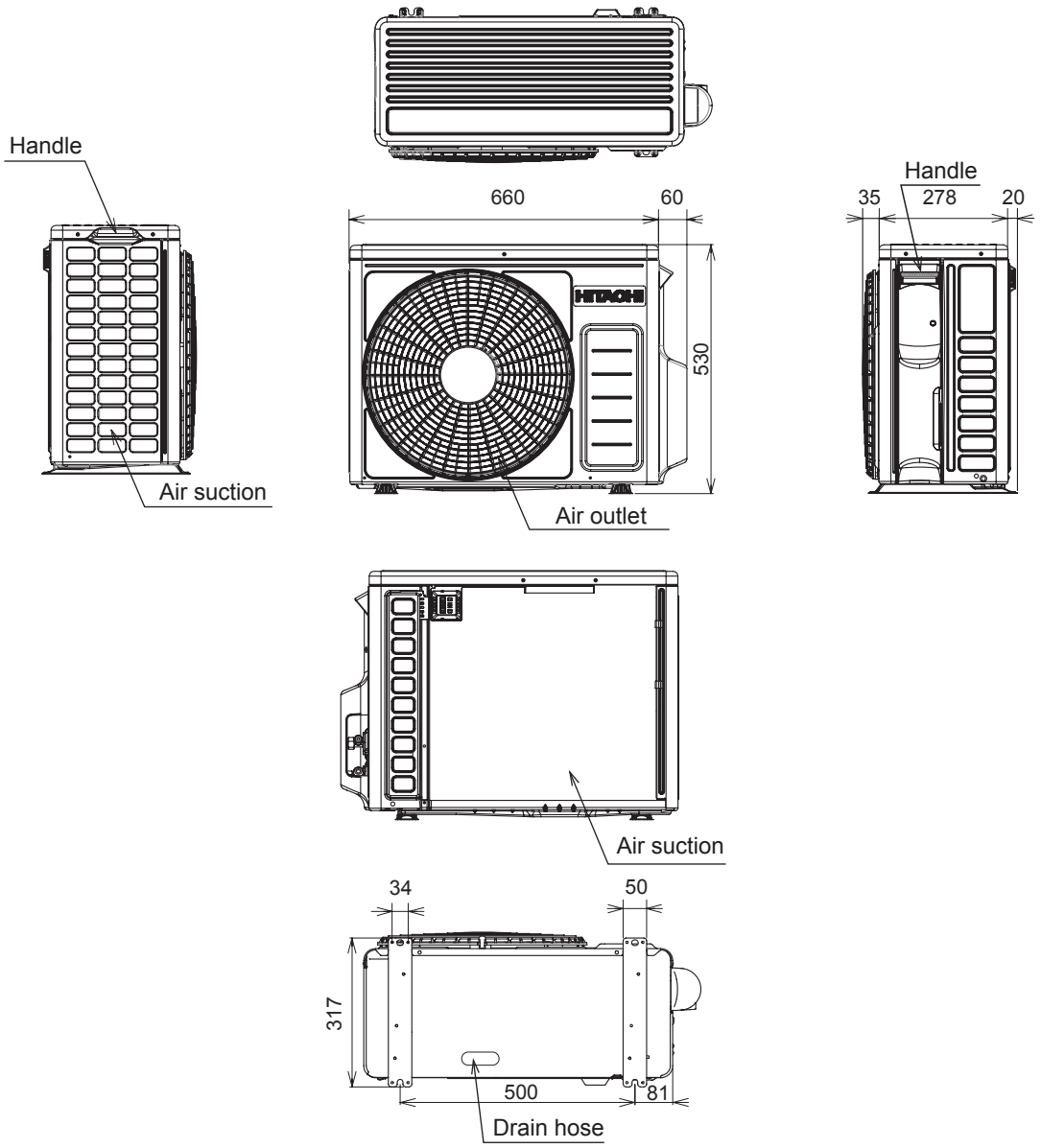
2.1. WALL TYPE: RAK-18REF,RAK-25REF,RAK-25REFC RAK-35REF,RAK-35REFC,RAK-50REF,RAK-50REFC

Unit: mm



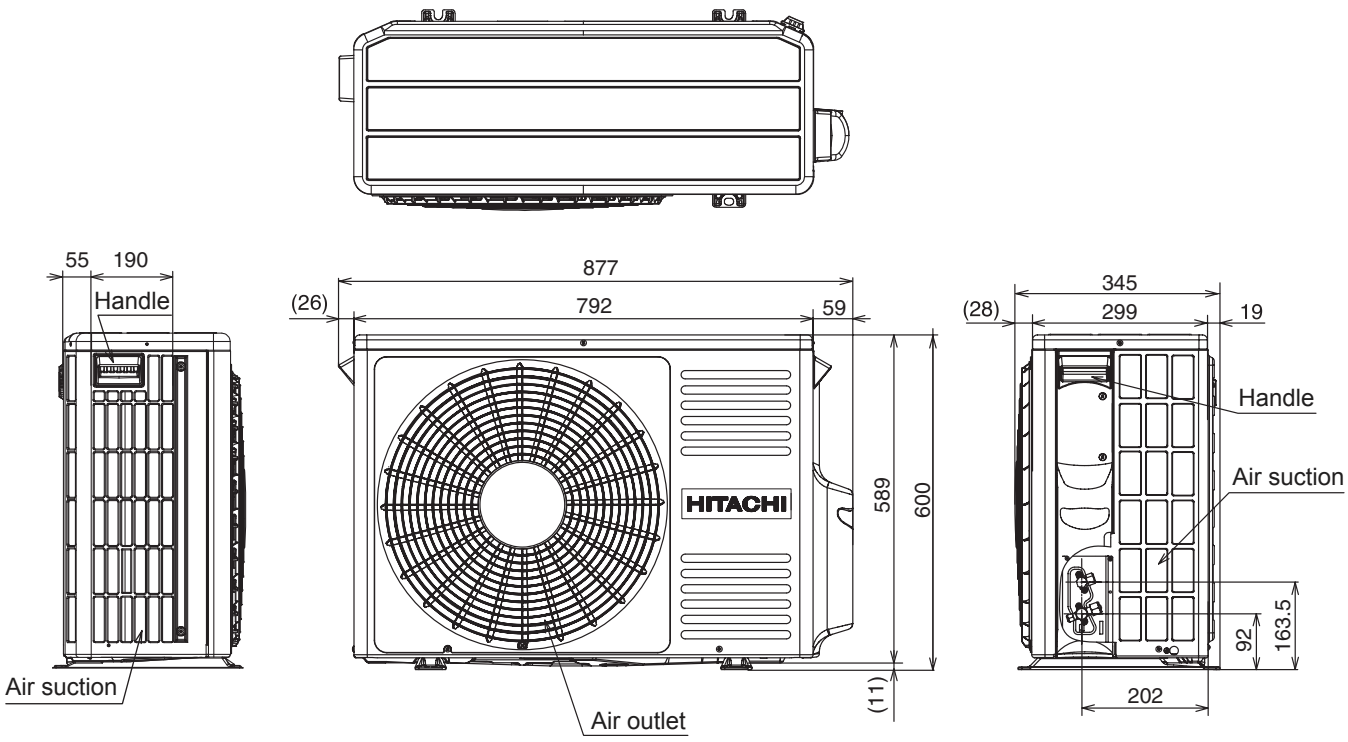
2.2. WALL TYPE: RAC-18WEF,RAC-25WEF,RAC-35WEF

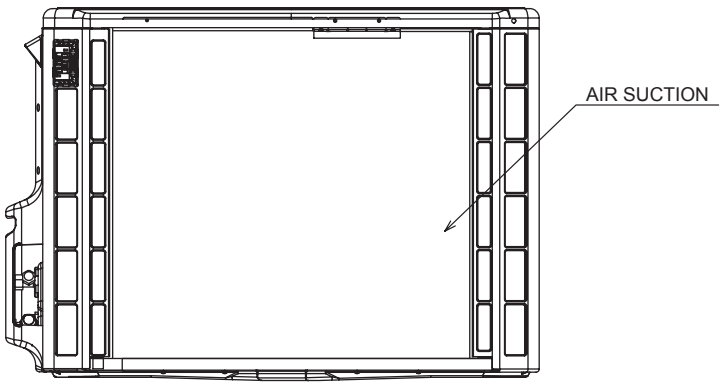
Unit: mm



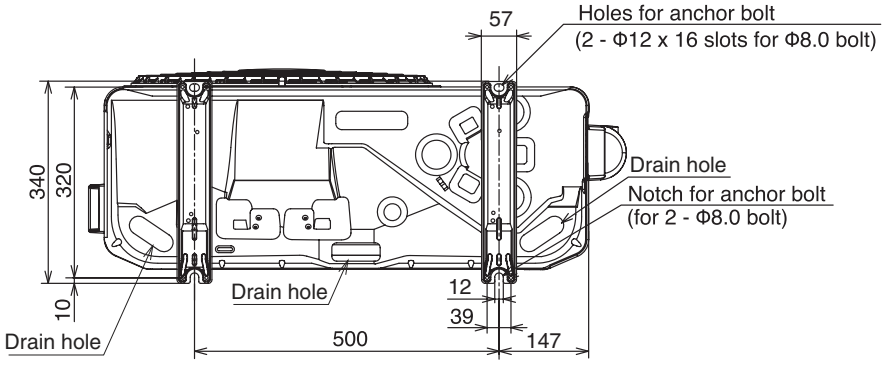
2.3. WALL TYPE: RAC-50WEF

Unit : mm





View from the rear



3 CAPACITIES TABLE

3.1. CAPACITY CHARACTERISTIC CURVES

The following charts show the characteristics of outdoor unit capacity, which corresponds with the operating ambient temperature of outdoor unit.

Conditions:

①Pipe length / height difference : 5m / 0m
②Indoor fan speed at High mode
③Compressor at rated inverter frequency
④Capacity loss due to white frost and defrost operation is not included.

3.1.1. RAK-18REF/RAC-18WEF

COOLING [50Hz, 230V]

INDOOR		OUTDOOR TEMPERATURE (°CDW)																				
EWB	EDB	-10			21			27			32			35			40			43		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
12.0	18	1606	1502	334	1880	2070	410	1740	1910	483	1640	1811	534	1580	1731	557	1480	1632	597	1420	1552	621
14.0	20	1606	1502	334	2020	2070	410	1880	1930	489	1760	1811	539	1700	1751	563	1580	1632	603	1520	1572	632
16.0	22	1606	1598	339	2160	2070	415	2000	1930	495	1880	1811	545	1820	1751	574	1700	1632	615	1640	1572	638
18.0	25	1723	1714	345	2300	2249	421	2120	2090	500	2000	1970	551	1920	1891	574	1800	1771	621	1720	1692	644
19.0	27	1781	1772	350	2380	2368	426	2200	2189	506	2080	2070	557	2000	1990	580	1880	1871	621	1800	1791	644
22.0	30	1974	1752	350	2640	2348	426	2440	2169	506	2300	2050	563	2220	1970	586	2000	1910	644	1860	1871	679
24.0	32	2110	1752	355	2820	2348	432	2600	2169	512	2460	2050	563	2360	1970	592	2080	1950	661	1900	1930	702

HEATING [50Hz, 230V]

INDOOR	OUTDOOR TEMPERATURE (°CDW)																					
EDB	-15			-10			-7			-5			0			7			10			15		
°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
16	1175		618	1738		649	2082		660	2151		647	2315		624	2529		571	2865		587	3446		612
18	1163		624	1725		655	2066		670	2132		659	2295		637	2514		596	2851		613	3423		641
20	**1150**		**630**	1713		661	**2050**		**680**	2114		671	2275		650	**2500**		**620**	2838		639	3400		670
22	1138		636	1700		667	2034		690	2096		684	2255		663	2486		644	2824		664	3377		699
24	1125		642	1688		674	2018		700	2078		696	2235		676	2471		669	2810		690	3354		728

EWB : Evaporator Wet Bulb temperature (°C)
EDB : Evaporator Dry Bulb temperature (°C)
(°CDB) : Outdoor Unit Inlet Air Dry Bulb Temperature (°C)

TC : Total Capacity (W)
SHC : Sensible Heating Capacity (W)
PI : Power Input

3.1.2. RAK-25REF/RAC-25WEF,RAK-25REFC/RAC-25WEF

COOLING [50Hz, 230V]

INDOOR		OUTDOOR TEMPERATURE (°CDW)																				
EWB	EDB	-10			21			27			32			35			40			43		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
12.0	18	2140	1834	430	2350	2371	495	2175	2189	583	2050	2075	644	1975	1984	672	1850	1870	721	1775	1778	749
14.0	20	2140	1834	430	2525	2371	495	2350	2212	590	2200	2075	651	2125	2006	679	1975	1870	728	1900	1801	763
16.0	22	2140	1952	436	2700	2371	501	2500	2212	597	2350	2075	658	2275	2006	693	2125	1870	742	2050	1801	770
18.0	25	2295	2093	443	2875	2576	508	2650	2394	604	2500	2257	665	2400	2166	693	2250	2029	749	2150	1938	777
19.0	27	2372	2163	450	2975	2713	514	2750	2508	611	2600	2371	672	2500	2280	700	2350	2143	749	2250	2052	777
22.0	30	2630	2140	450	3300	2690	514	3050	2485	611	2875	2348	679	2775	2257	707	2500	2189	777	2325	2143	819
24.0	32	2810	2140	457	3525	2690	521	3250	2485	617	3075	2348	679	2950	2257	714	2600	2234	798	2375	2212	847

HEATING [50Hz, 230V]

INDOOR	OUTDOOR TEMPERATURE (°CDW)																					
EDB	-15			-10			-7			-5			0			7			10			15		
°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
16	2334		1102	2959		1152	3343		1172	3364		1120	3404		1003	3439		811	3812		837	4463		878
18	2317		1111	2942		1161	3321		1186	3339		1137	3377		1021	3420		845	3794		873	4431		919
20	**2300**		**1120**	2925		1170	**3300**		**1200**	3314		1154	3350		1040	**3400**		**880**	3775		910	4400		960
22	2283		1129	2908		1179	3279		1214	3290		1172	3323		1059	3380		915	3756		947	4369		1001
24	2266		1138	2891		1188	3257		1228	3265		1189	3296		1077	3361		949	3738		983	4337		1042

3.1.3. RAK-35REF/RAC-35WEF,RAK-35REFC/RAC-35WEF

COOLING [50Hz, 230V]

INDOOR		OUTDOOR TEMPERATURE (°CDW)																				
EWB	EDB	-10			21			27			32			35			40			43		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
12.0	18	2453	1890	548	2669	2421	625	2470	2235	736	2870	2612	1003	2765	2497	1046	2590	2353	1123	2485	2239	1166
14.0	20	2453	1890	548	2867	2421	625	2669	2258	745	3080	2612	1014	2975	2526	1057	2765	2353	1134	2660	2267	1188
16.0	22	2453	2012	556	3066	2421	633	2839	2258	754	3290	2612	1025	3185	2526	1079	2975	2353	1155	2870	2267	1199
18.0	25	2630	2157	565	3265	2631	641	3009	2444	762	3500	2841	1036	3360	2727	1079	3150	2554	1166	3010	2440	1210
19.0	27	2719	2230	574	3378	2770	650	3123	2561	771	3640	2985	1046	3500	2870	1090	3290	2698	1166	3150	2583	1210
22.0	30	3015	2205	574	3747	2747	650	3463	2537	771	4025	2956	1057	3885	2841	1101	3500	2755	1210	3255	2698	1275
24.0	32	3222	2205	582	4003	2747	658	3691	2537	780	4305	2956	1057	4130	2841	1112	3640	2813	1243	3325	2784	1319

HEATING [50Hz, 230V]

INDOOR	OUTDOOR TEMPERATURE (°CDW)																					
EDB	-15			-10			-7			-5			0			7			10			15		
°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
16	2742		1108	3461		1277	3903		1365	3961		1314	4092		1203	4248		1014	4677		1110	5428		1268
18	2721		1119	3440		1288	3877		1383	3930		1335	4059		1227	4224		1057	4654		1156	5389		1319
20	**2700**		**1130**	3419		1299	**3850**		**1400**	3900		1357	4025		1250	**4200**		**1100**	4631		1201	5350		1370
22	2679		1141	3398		1310	3823		1417	3870		1379	3991		1273	4176		1143	4608		1247	5311		1421
24	2658		1152	3377		1321	3797		1435	3839		1401	3958		1297	4152		1186	4585		1293	5272		1472

EWB : Evaporator Wet Bulb temperature (°C)
EDB : Evaporator Dry Bulb temperature (°C)
(°CDB) : Outdoor Unit Inlet Air Dry Bulb Temperature (°C)

TC : Total Capacity (W)
SHC : Sensible Heating Capacity (W)
PI : Power Input

3.1.4. RAK-50REF/RAC-50WEF,RAK-50REFC/RAC-50WEF

COOLING [50Hz, 230V]

INDOOR		OUTDOOR TEMPERATURE (°CDW)																				
EWB	EDB	-10			21			27			32			35			40			43		
°C	°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
12.0	18	3228	2105	722	3603	2767	845	3335	2554	996	4100	3158	1435	3950	3019	1498	3700	2845	1607	3550	2707	1669
14.0	20	3228	2105	722	3872	2767	845	3603	2581	1008	4400	3158	1451	4250	3054	1513	3950	2845	1622	3800	2741	1700
16.0	22	3228	2240	733	4140	2767	856	3833	2581	1020	4700	3158	1466	4550	3054	1544	4250	2845	1654	4100	2741	1716
18.0	25	3461	2402	745	4408	3006	868	4063	2793	1031	5000	3435	1482	4800	3297	1544	4500	3088	1669	4300	2950	1732
19.0	27	3578	2483	756	4562	3166	879	4217	2926	1043	5200	3609	1498	5000	3470	1560	4700	3262	1669	4500	3123	1732
22.0	30	3967	2456	756	5060	3139	879	4677	2900	1043	5750	3574	1513	5550	3435	1576	5000	3331	1732	4650	3262	1825
24.0	32	4239	2456	767	5405	3139	890	4983	2900	1055	6150	3574	1513	5900	3435	1591	5200	3401	1778	4750	3366	1888

HEATING [50Hz, 230V]

INDOOR	OUTDOOR TEMPERATURE (°CDW)																					
EDB	-15			-10			-7			-5			0			7			10			15		
°C	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
16	3860		1817	4735		1911	5276		1947	5401		1886	5696		1759	6069		1530	6591		1578	7511		1656
18	3830		1833	4705		1927	5238		1974	5358		1919	5648		1795	6035		1595	6558		1647	7456		1733
20	**3800**		**1850**	4675		1944	**5200**		**2000**	5314		1951	5600		1830	**6000**		**1660**	6525		1716	7400		1810
22	3770		1867	4645		1960	5162		2026	5271		1984	5552		1865	5966		1725	6492		1785	7345		1887
24	3740		1883	4615		1977	5124		2053	5227		2017	5504		1901	5931		1790	6459		1854	7289		1964

EWB : Evaporator Wet Bulb temperature (°C)
EDB : Evaporator Dry Bulb temperature (°C)
(°CDB) : Outdoor Unit Inlet Air Dry Bulb Temperature (°C)

TC : Total Capacity (W)
SHC : Sensible Heating Capacity (W)
PI : Power Input

3.2. CORRECTION FACTORS ACCORDING TO PIPING LENGTH

Correction Factor for **Cooling Capacity** according to Piping Length

The cooling capacity should be corrected according to the following formula:

CCA = CC x F

CCA: Actual Corrected Cooling Capacity (kcal/h)
CC: Cooling Capacity in the Performance Table (kcal/h)
F: Correction Factor Based on the Equivalent Piping Length

Correction Factor for **Heating Capacity** according to Piping Length

The heating capacity should be corrected according to the following formula:

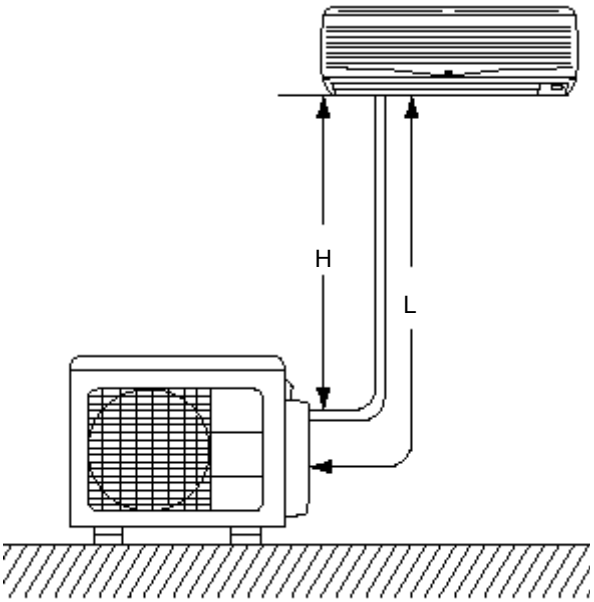
HCA= HC x F

HCA: Actual Corrected Heating Capacity (kcal/h)
HC: Heating Capacity in the Performance Table (kcal/h)
F: Correction Factor Based on the Equivalent Piping Length

The correction factors are shown in the following figure.

Equivalent Piping Length for:

- One 90º Elbow is 0.5m.
- One 180º Curve is 1.5m.

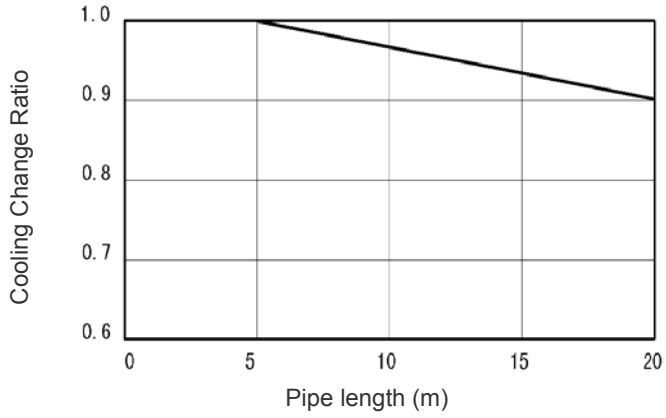


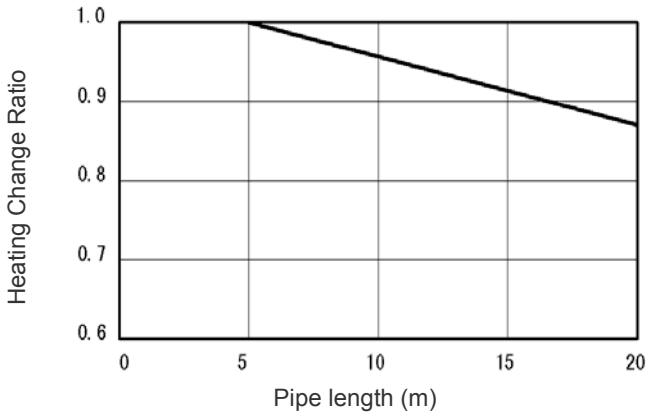
H: Vertical Distance Between Indoor Unit and Outdoor Units in Meters

L: Actual One-Way Piping Length Between Indoor Unit and Outdoor Unit in Meters

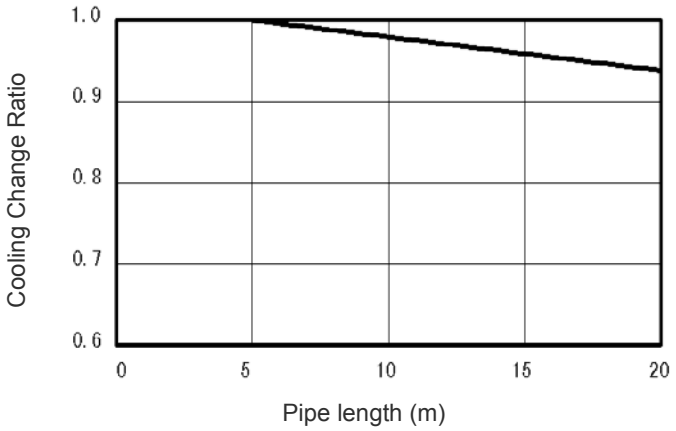
EL: Equivalent Total Distance Between Indoor Unit and Outdoor Unit in Meters
(Equivalent One-Way Piping Length)

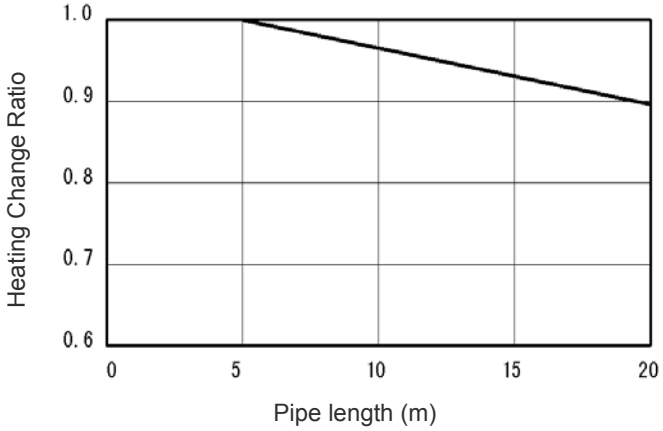
Models : RAK-18REF/RAC-18WEF,RAK-25REF/RAC-25WEF,RAK-35REF/RAC-35WEF
RAK-25REFC/RAC-25WEF,RAK-35REFC/RAC-35WEF





Models : RAK-50REF/RAC-50WEF,RAK-50REFC/RAC-50WEF





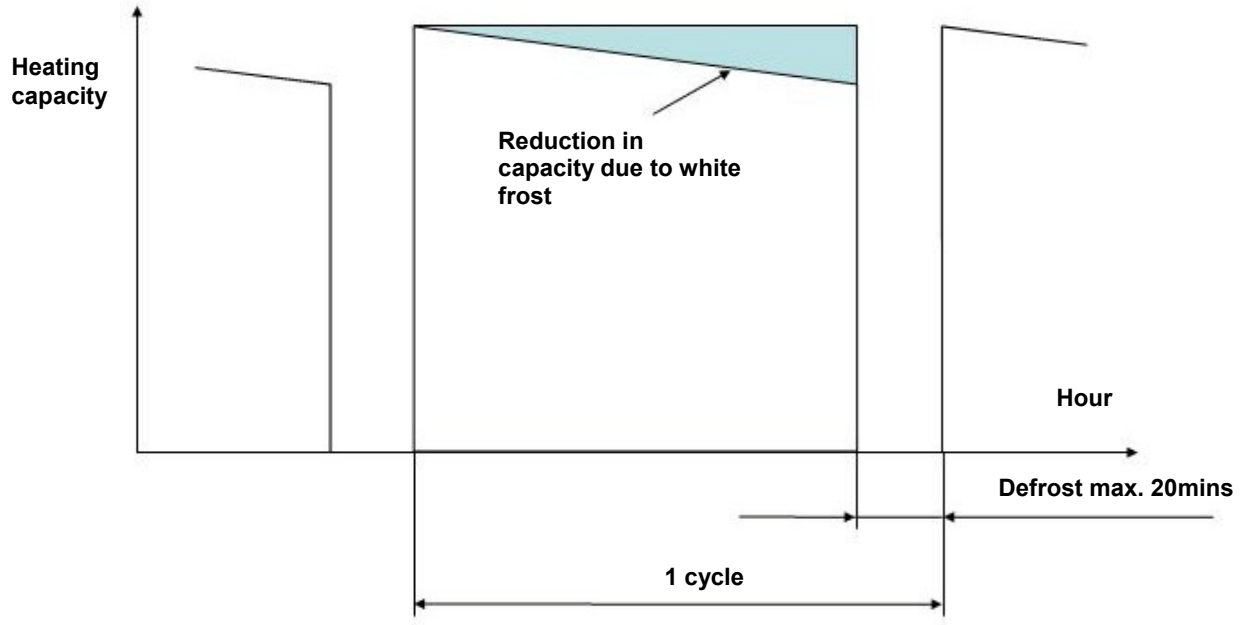
3.3. CORRECTION FACTORS ACCORDING TO DEFROSTING OPERATION

The heating capacity in the preceding paragraph, excludes the condition of the frost or the defrosting operation period. In consideration of the frost or the defrosting operation, the heating capacity is corrected by the equation below.

Corrected heating capacity = Defrost Correction factor x unit capacity

OUTDOOR TEMPERATURE (°CDB)	-15	-10	-5	0	7	10	15
Correction factor (humidity rate85% RH)	0.95	0.95	0.91	0.81	1.0	1.0	1.0

Correction Factor

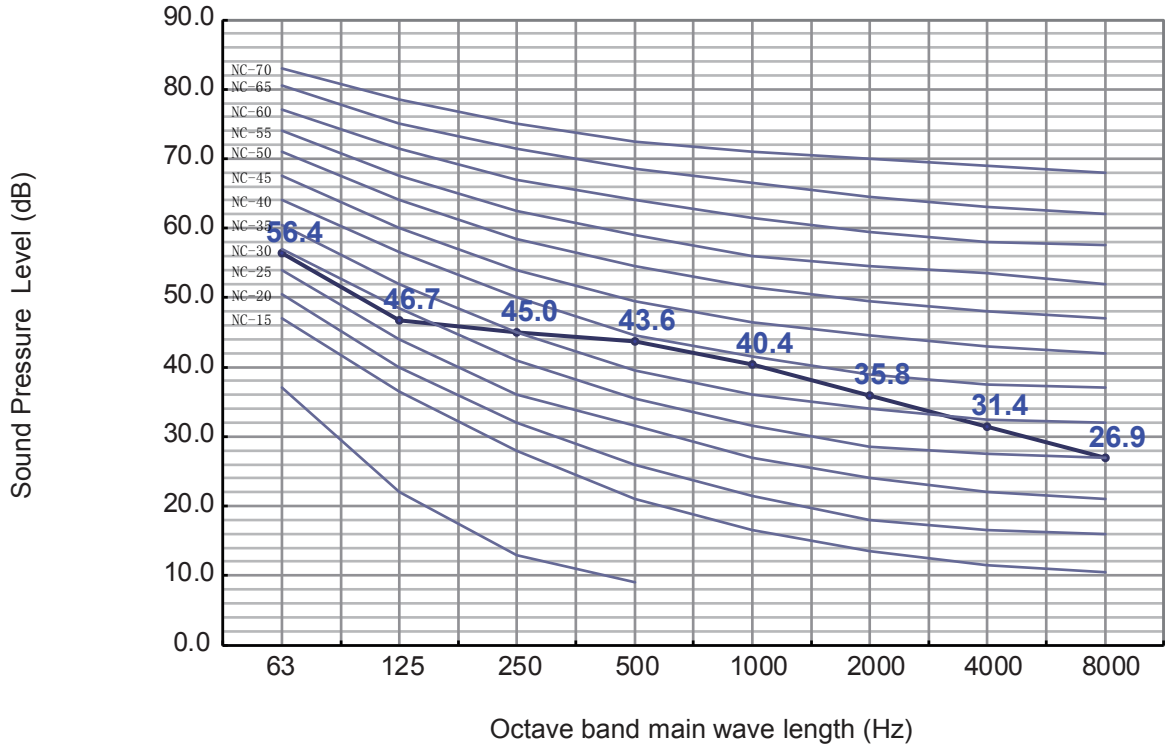


NOTE:
The correction factor is not valid for special conditions such as snowfall or operation in a transitional period.

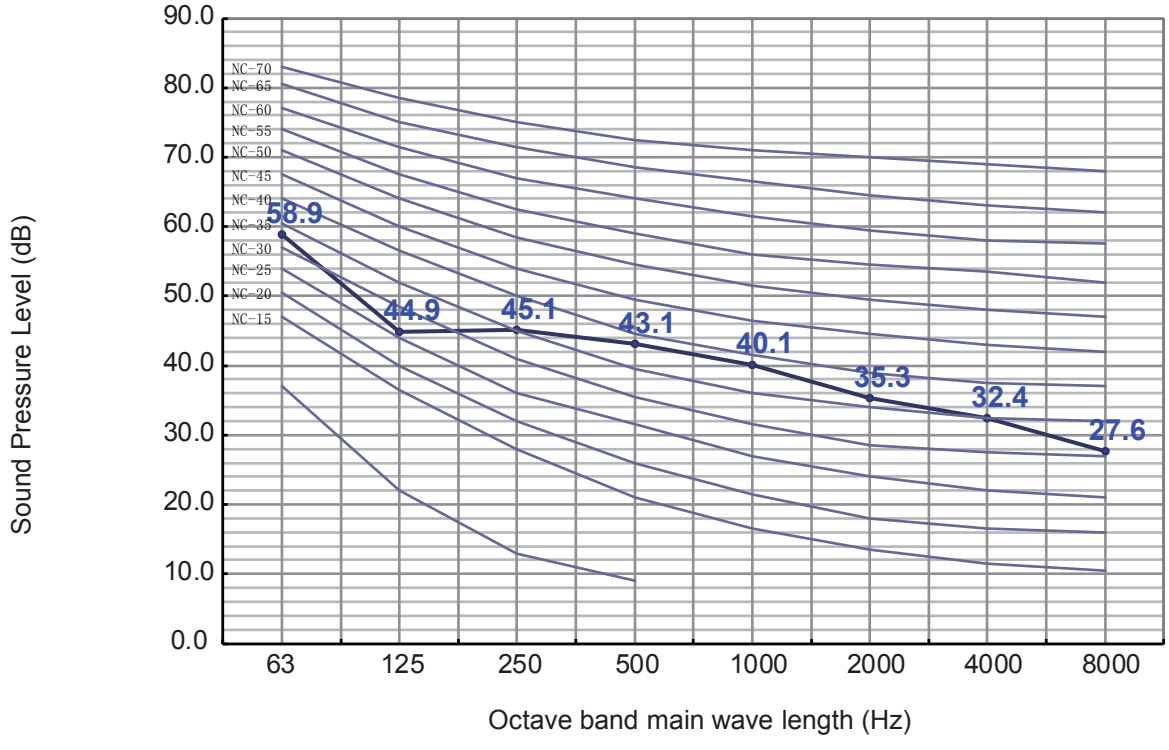
4 SOUND DATA

4.1. RAC-18WEF

COOLING



HEATING

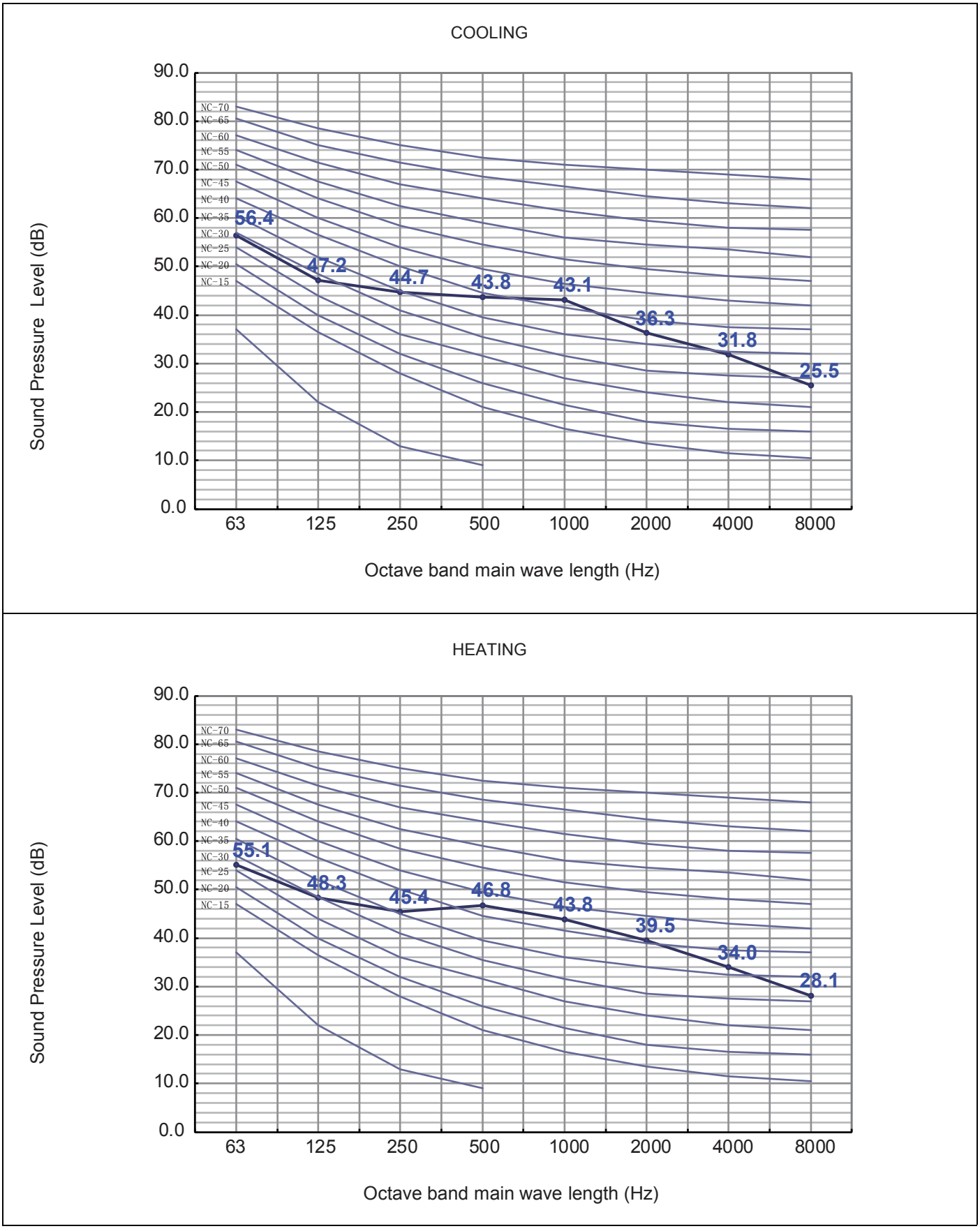


The Sound Pressure Level is based on the following conditions:

1 meter from the unit front surface and 1 meter from floor level

The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.2. RAC-25WEF

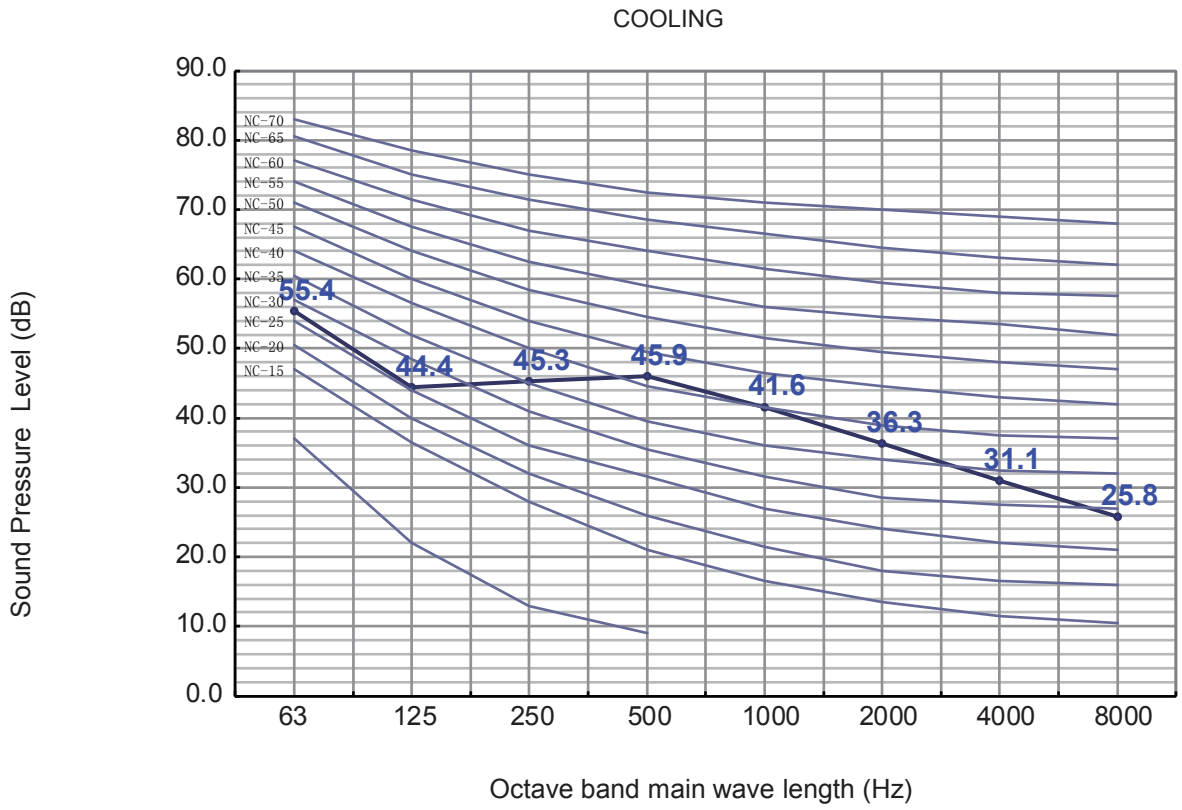


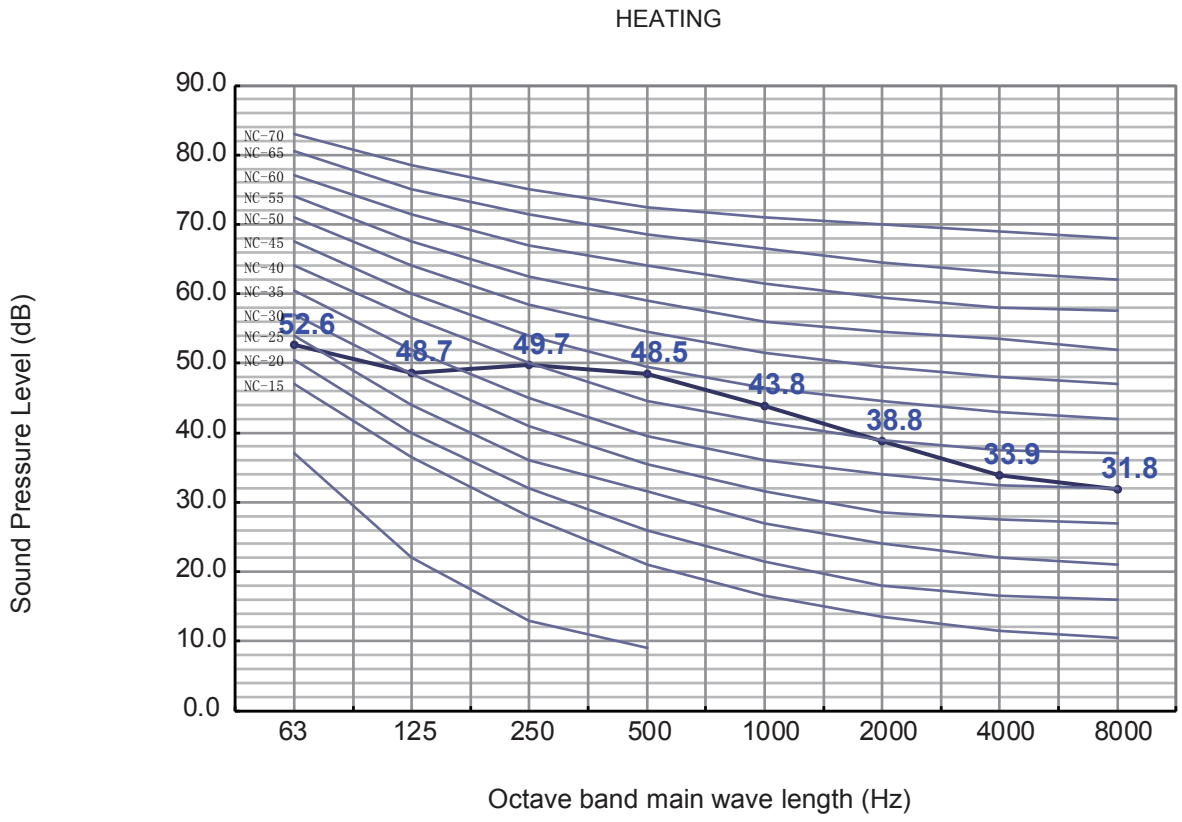
The Sound Pressure Level is based on the following conditions:

1 meter from the unit front surface and 1 meter from floor level

The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.3. RAC-35WEF



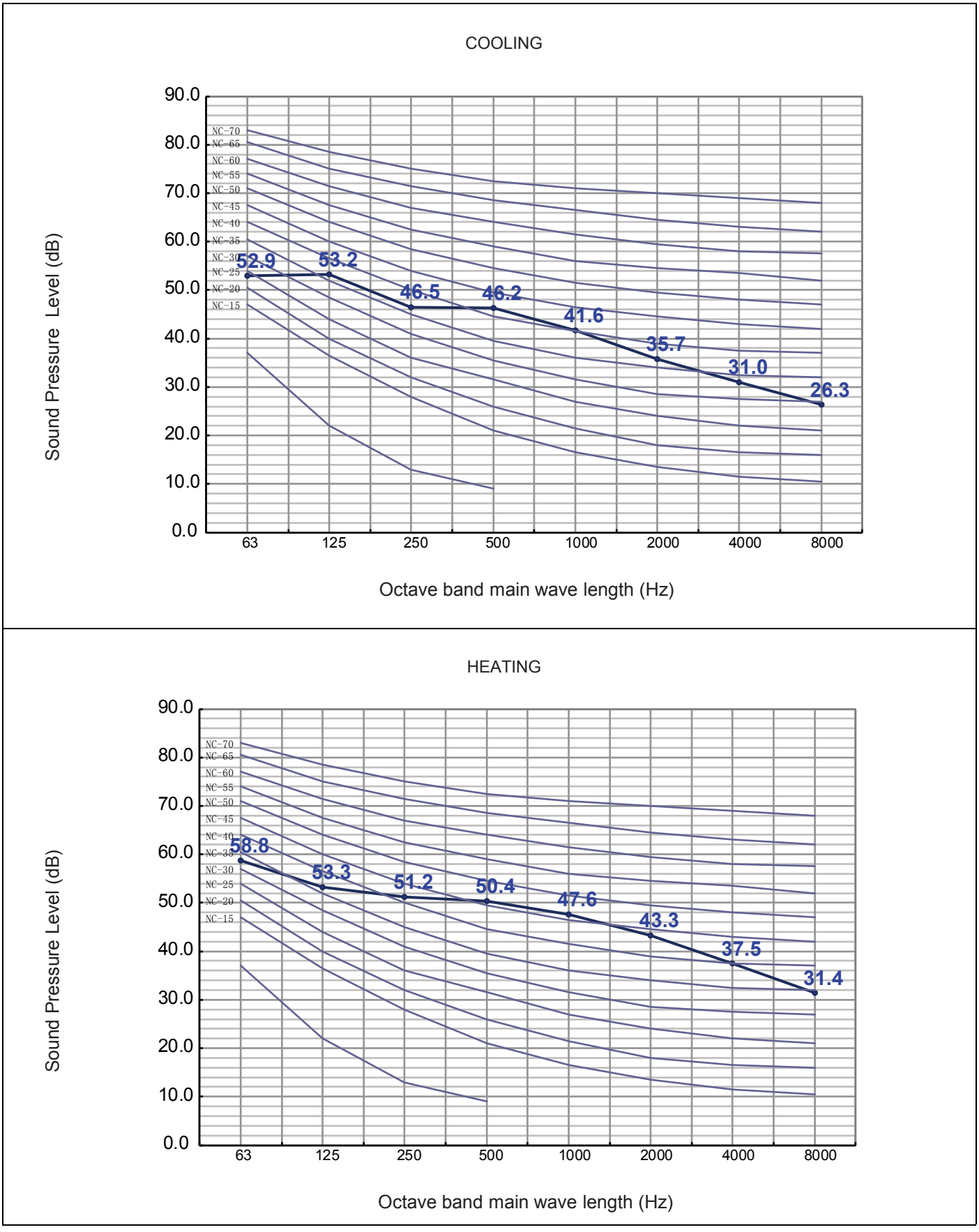


The Sound Pressure Level is based on the following conditions:

1 meter from the unit front surface and 1 meter from floor level

The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.4. RAC-50WEF



The Sound Pressure Level is based on the following conditions:

1 meter from the unit front surface and 1 meter from floor level

The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

5 WORKING RANGE

5.1. POWER SUPPLY

Working Voltage	207V ~ 253V
Voltage Imbalance	Within a 3% Deviation from Each Voltage at the Main Terminal of Outdoor Unit
Starting Voltage	Higher than 85% of the Rated Voltage

5.2. WORKING RANGE

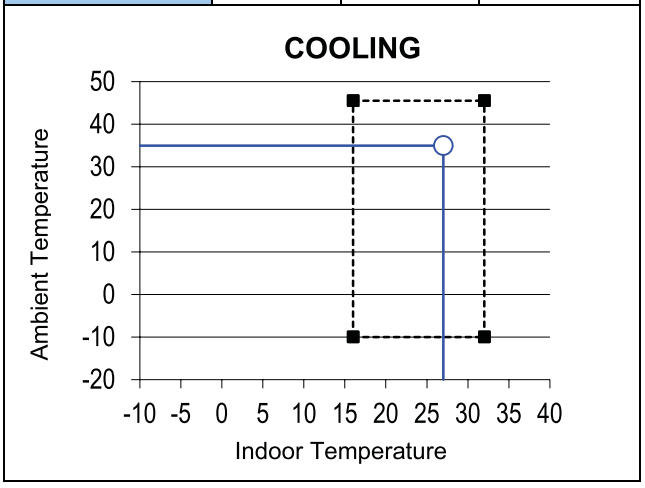
Applicable models:

RAC-18WEF
RAC-25WEF
RAC-35WEF
RAC-50WEF

The temperature range is indicated in the following table.

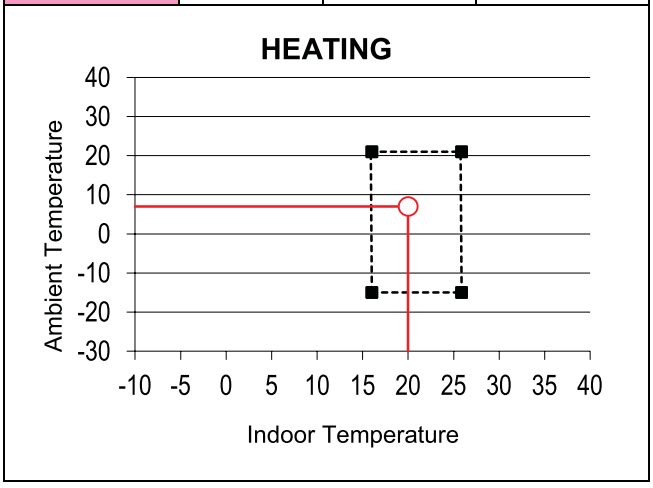
Cooling

working range	min (°C)	max (°C)	rated (°C)
outdoor	-10	46	35
indoor	16	32	27



Heating

working range	min (°C)	max (°C)	rated (°C)
outdoor	-15	21	7
indoor	16	26	20



6 ELECTRICAL DATA

6.1. INDOOR UNIT

Model	Unit Main Power		Applicable Current		Indoor Fan Motor	
	VOL, PH, Hz	Fuse Rating (A)	STC	RNC	RNC	IPT
RAK-18REF	230,1,50	3.15	(C)3.19 (H)3.62	(C) 4.39 (H) 4.22	0.67	38
RAK-25REF RAK-25REFC	230,1,50	3.15	(C)3.84 (H)4.56	(C) 5.61 (H) 5.43	0.67	38
RAK-35REF RAK-35REFC	230,1,50	3.15	(C)5.41 (H)5.56	(C) 6.35 (H) 7.39	0.67	38
RAK-50REF RAK-50REFC	230,1,50	3.15	(C)7.16 (H)7.62	(C) 9.13 (H) 11.96	0.67	38

VOL: Rated Unit Power Supply Voltage (V)
Hz: Frequency (Hz)
STC: Starting Current (A)
RNC: Running Current (A)
PH: Phase (ϕ)
IPT: Input (W)

6.2. OUTDOOR UNIT

Model	Unit Main Power				Compressor Motor					
	VOL, PH, Hz	Fuse Rating (A)	Min (V)	Max (V)	Locked Rotor Ampere (A)	STC	Cooling Operation		Heating Operation	
							RNC	IPT	RNC	IPT
RAC-18WEF	220 ~ 230, 1, 50	15	207	253	-	3.62	4.39	580	4.22	620
RAC-25WEF	220 ~ 230, 1, 50	15	207	253	-	4.56	5.61	700	5.43	880
RAC-35WEF	220 ~ 230, 1, 50	15	207	253	-	5.56	6.35	1090	7.39	1100
RAC-50WEF	220 ~ 230, 1, 50	25	207	253	-	7.62	9.13	1560	11.96	1660

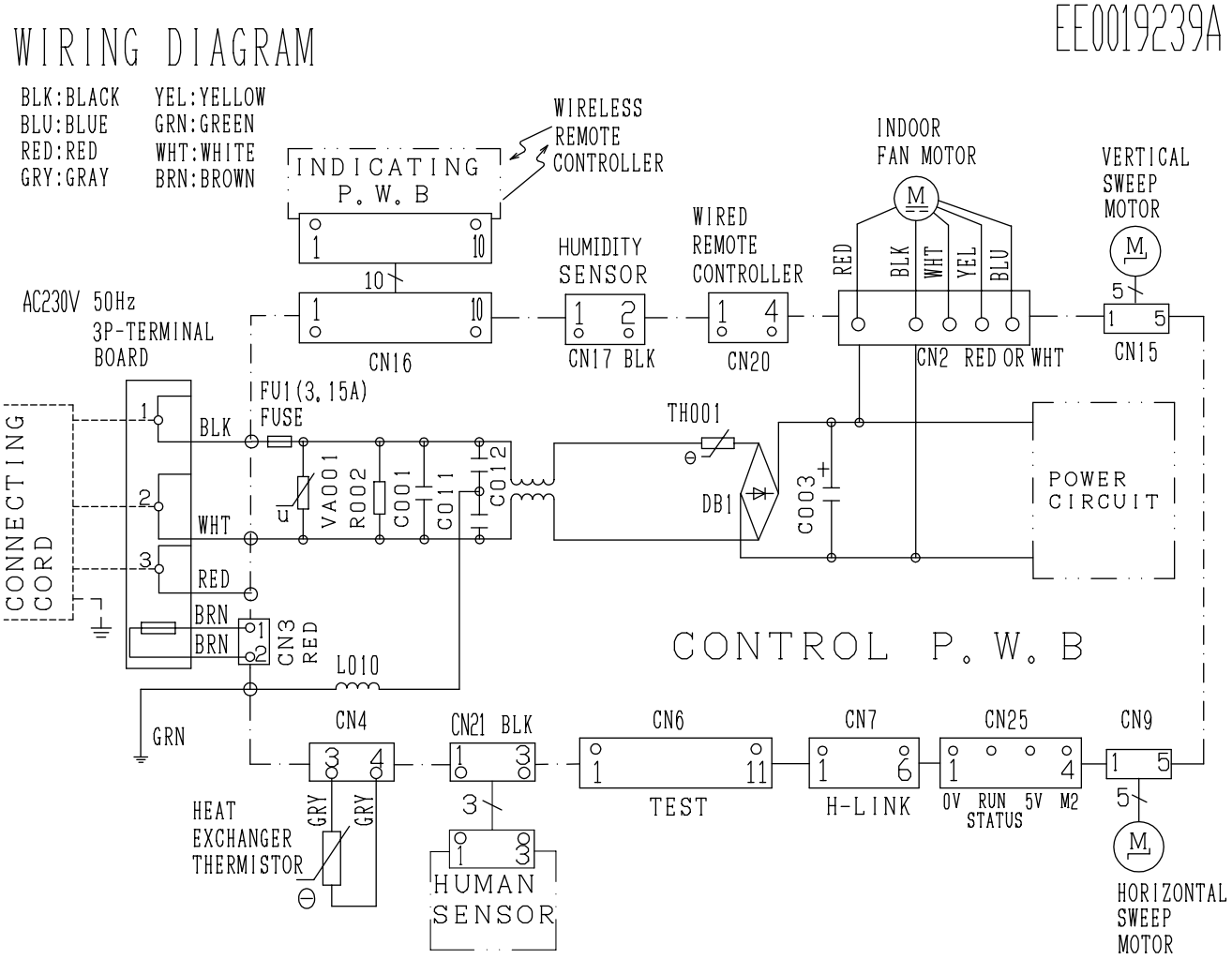
VOL: Rated Unit Power Supply Voltage (V)
HZ: Frequency (Hz)
STC: Starting Current (A)
RNC: Running Current (A)
PH: Phase (ϕ)
IPT: Input (W)

NOTE:

1. *The above compressor data is based on 100% capacity combination of indoor units at the rated operating frequency*
2. *This data is based on the same conditions as the nominal heating and cooling capacities.*
3. *The compressor started by an inverter, resulting in extremely low starting current.*

7 WIRING DIAGRAM

7.1. RAK-18REF,RAK-25REF,RAK-35REF,RAK-50REF RAK-25REFC,RAK-35REFC,RAK-50REFC

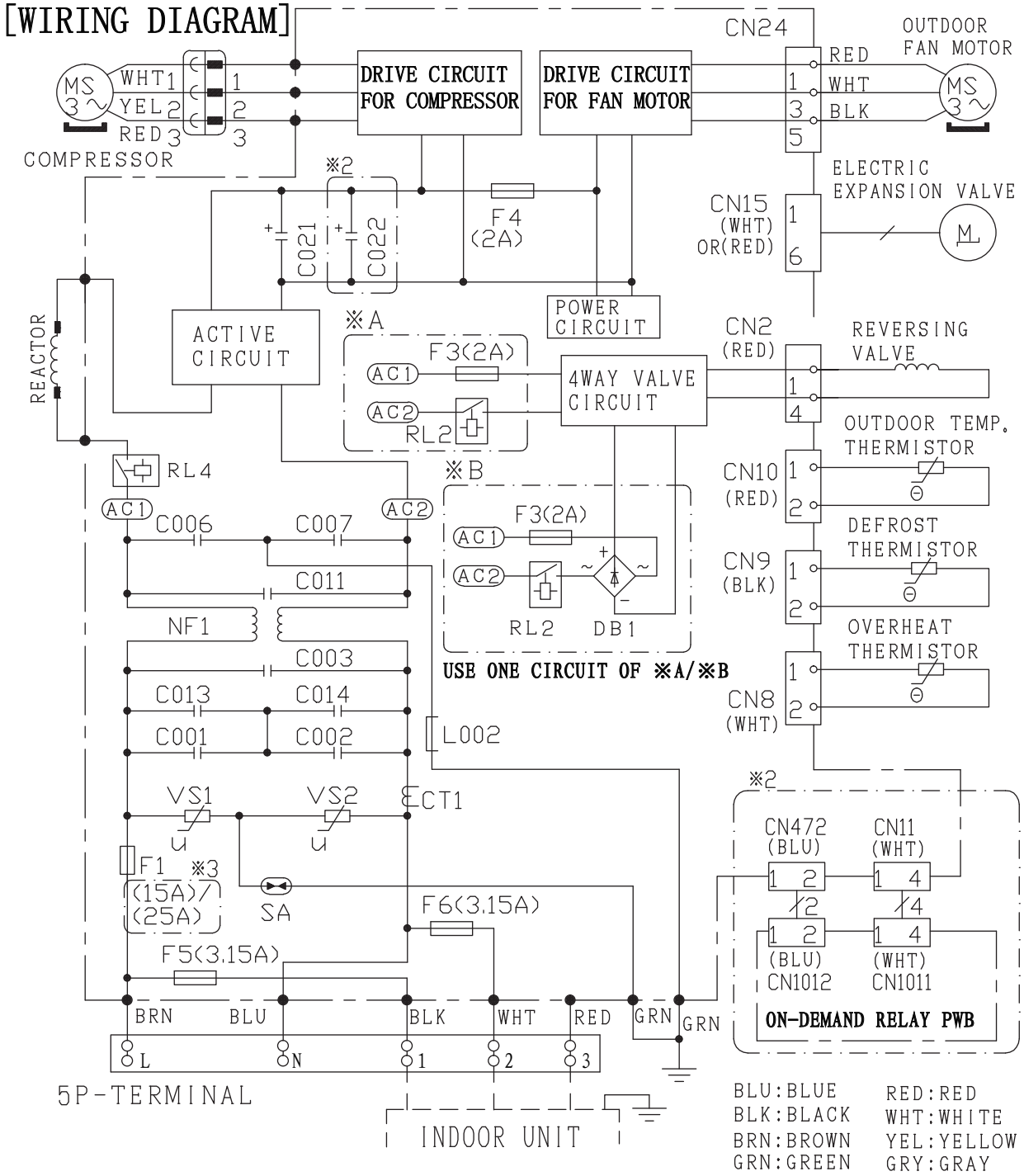


CAUTION! HIGH VOLTAGE	TURN OFF THE POWER SOURCE DURING THE SERVICE WORK.

※ SOME MODELS NOT NEED TO INSTALL THE HORIZONTAL SWEEP MOTOR, HUMIDITY SENSOR,HUMAN SENSOR

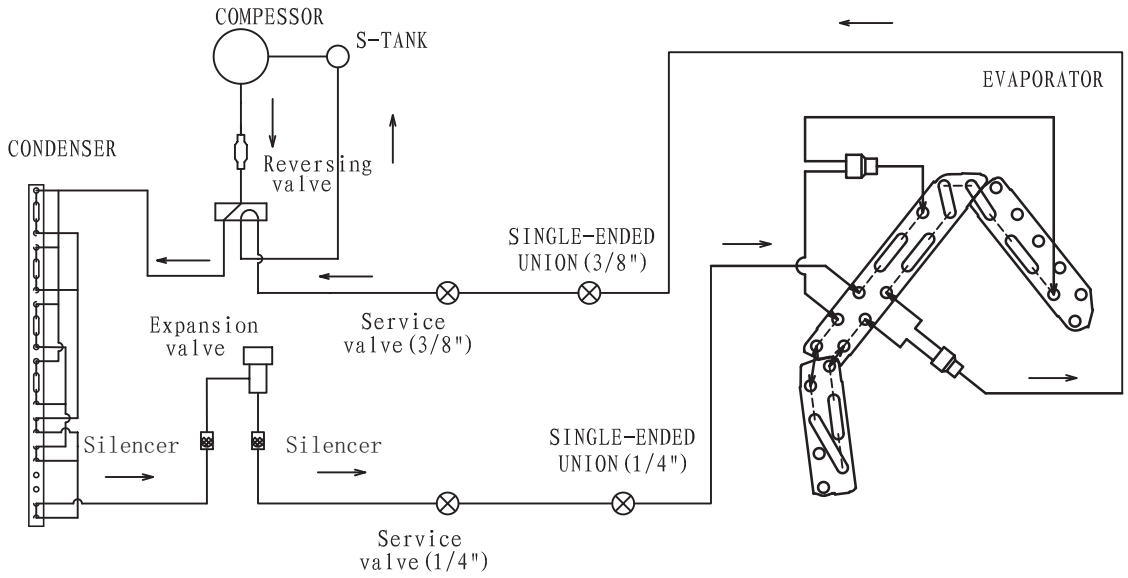
7.2. RAC-18WEF,RAC-25WEF,RAC-35WEF,RAC-50WEF

EE0022422A

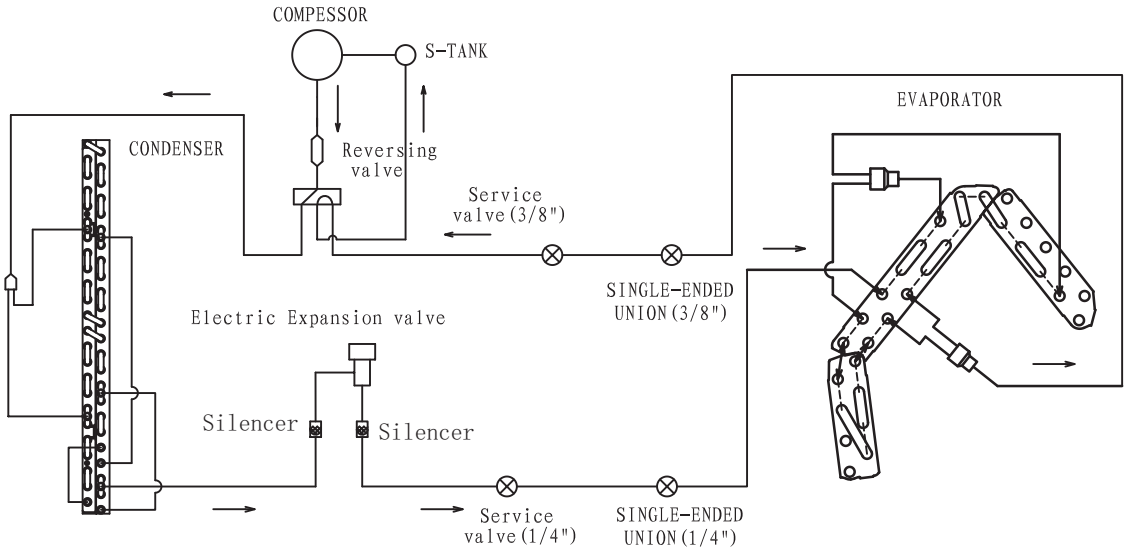


8 REFRIGERANT CYCLE

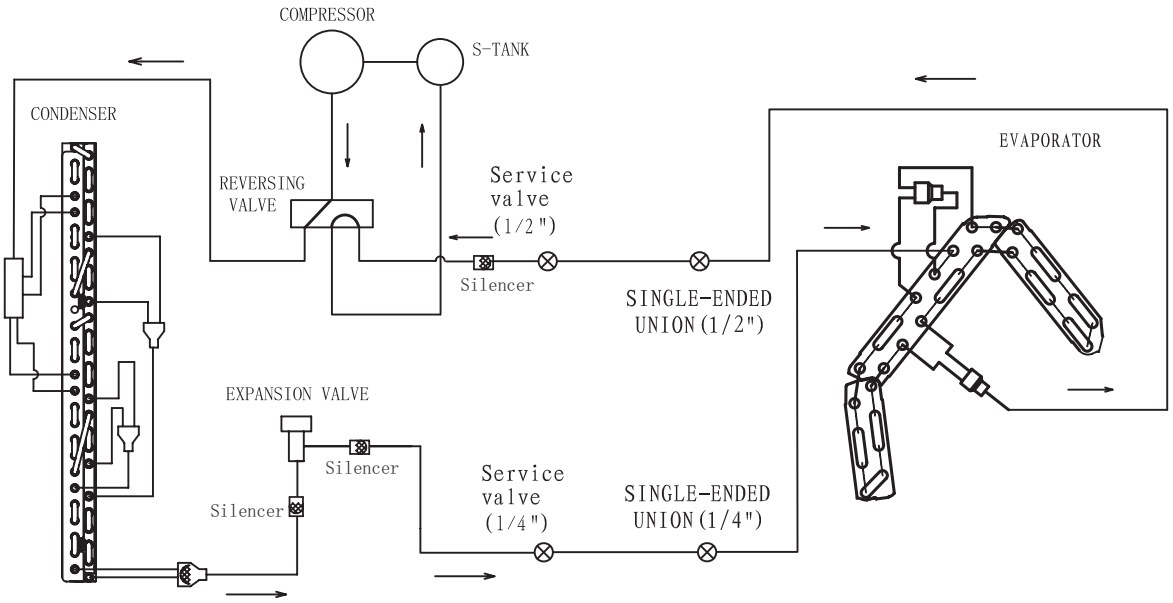
8.1. WALL TYPE: RAK-18REF/RAC-18WEF,RAK-25REF/RAC-25WEF,RAK-25REFC/RAC-25WEF



8.2. WALL TYPE: RAK-35REF/RAC-35WEF,RAK-35REFC/RAC-35WEF



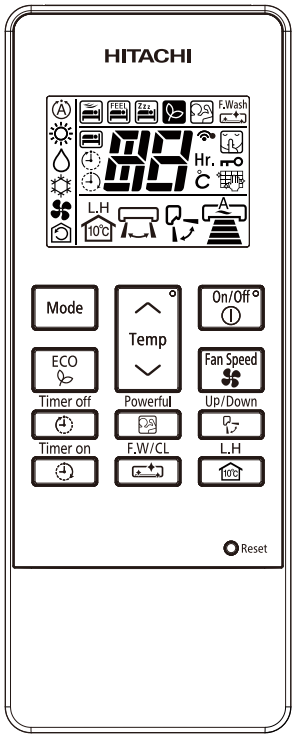
8.3. WALL TYPE: RAK-50REF/RAC-50WEF,RAK-50REFC/RAC-50WEF



9 CONTROL AND FUNCTION

9.1. RAR-7PE1

RAR-7PE1



RAK-18REF,RAK-25REF,RAK-35REF,RAK-50REF
RAK-25REFC,RAK-35REFC,RAK-50REFC

BUTTONS	FUNCTION
Mode	**MODE selector Button** Use this button to select the operating mode. Every time you press this button, the mode will change from Ⓐ (AUTO) → ☼ (HEAT) → 💧 (DEHUMIDIFY) → ✲ (COOL) and(FAN) → ✤ cyclically.
ECO	**ECO Button** Use this button to set the ECO mode.
Temp	**TEMPERATURE Button** Room temperature setting. Value will change quicker when keep pressing.
On/Off	**ON/OFF Button** Press this button to start operation. Press it again to stop operation.
Fan Speed	**FAN SPEED Button** Select the fan speed for cooling and heating mode.
	TIMER OFF Button Select the turn OFF time.
	TIMER ON Button Select the turn ON time.
	POWERFUL Button Press this button to start powerful operation.
	FROST WASH/CLEAN Button The dust and dirt adhering to indoor heat exchanger which is the cause of the smell. They are washed away by freezing and thawing of the heat exchanger.
	UP/DOWN Button Control the angle of the horizontal air deflector.
	LEAVE HOME Button Prevent the room temperature from falling too much by setting temperature 10°C~16°C when no one is at home.

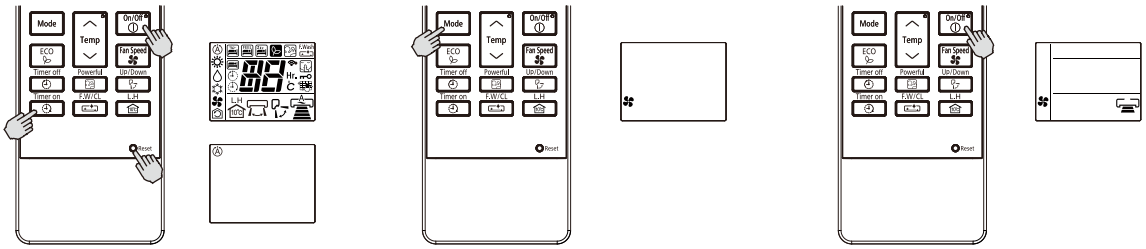
For more information, please refer to the operation manual.

9.2. SHIFT VALUE

1. While pressing and holding ① (ON/OFF) button and [⏲] button, press RESET [RESET] button on the same. Release RESET [RESET] button only and make sure that all marks on the remote controller display are indicated, then release the ① (ON/OFF) button and [⏲] button.
   Remote controller now enters "Shift Value Change Mode".

2. Press the [Mode] (MODE) selector button so that the display indicates (FAN) mode.

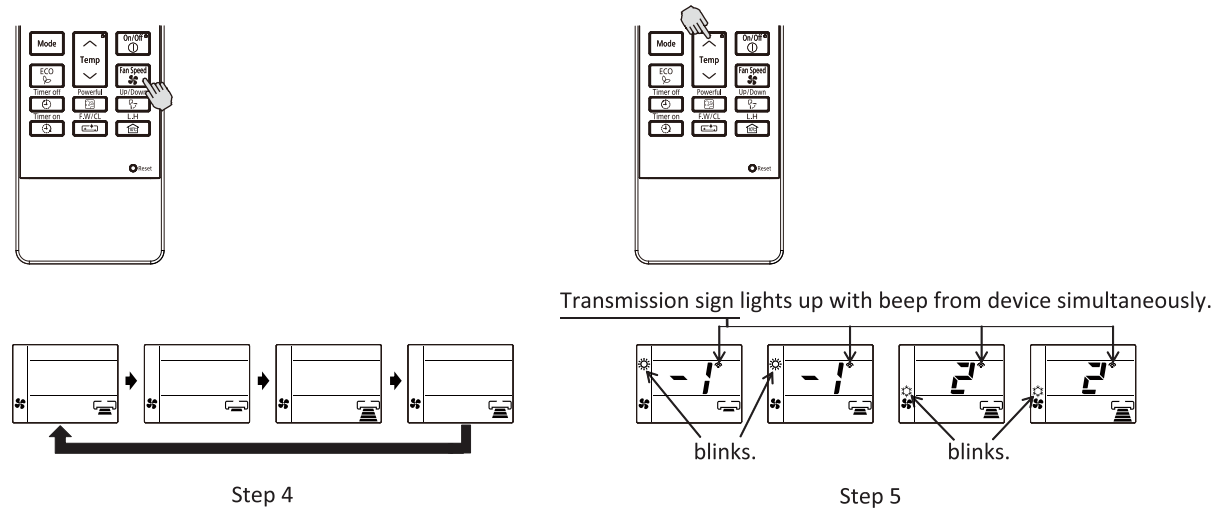
3. Press the ①(ON/OFF) button and FAN operation will be started.



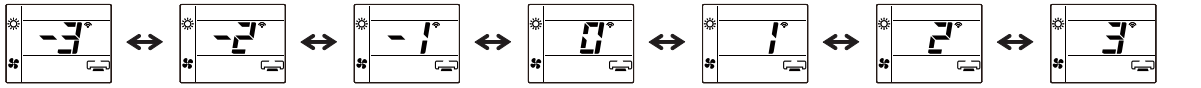
Step 1 Step 2 Step 3

4. Set the FAN SPEED with the [Fan Speed] (FAN SPEED) button according to the following FAN speed setting in order to choose the desired operation mode that is required for shift value setting temperature modification.
   - To change the shift value for COOLING mode operation, select either (HIGH) or (MED) FAN SPEED.
   - To change the shift value for HEATING mode operation, select either (LOW) or (SILENT) FAN SPEED.

5. Press the (TEMP ﹀ or ﹀) button to change the shift value.
   (The shift value changed with device beep sound.)



Step 4 Step 5



Decrease 3˚C from the initial shift value setting.
Decrease 2˚C from the initial shift value setting.
Decrease 1˚C from the initial shift value setting.
The initial shift value setting.
Increase 1˚C from the initial shift value setting.
Increase 2˚C from the initial shift value setting.
Increase 3˚C from the initial shift value setting.

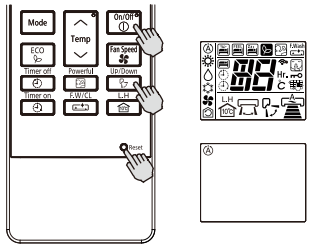
NOTE :
(1) The displayed shift value, ☼(HEAT) and ☼(COOL) symbol on the remote controller display will be disappear after 10 seconds.
(2) The changed shift value will remain unchanged after turned off the power.
(3) If "0" is displayed on the remote controller display, it indicates the shift value is now at the initial setting.

9.3. DISPLAY OPERATION MODE SETTING

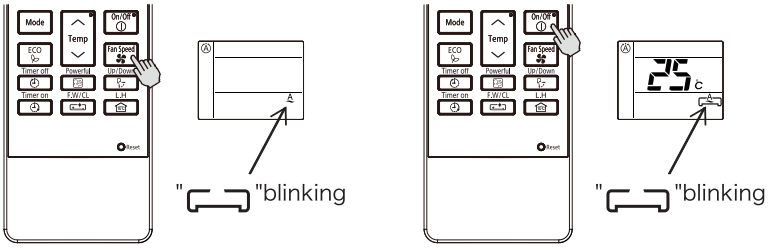
For operating indoor unit independently (without outdoor unit connection), remote controller has to be set according to below procedures before send the signal to the indoor unit. New communication format between indoor and outdoor is required to communicate with outdoor unit.

PROCEDURE

1. While pressing and holding On/Off (ON/OFF) button and Up/Down (UP/DOWN) button, press RESET (RESET) button on the same time. Release RESET (RESET) button only and make sure that all marks on the LCD display are indicated, then release the On/Off (ON/OFF) button and Up/Down (UP/DOWN) button.
   Remote controller now enters "DISPLAY OPERATION MODE" for the indoor unit to run independently.
   Please ensure that when pressing Fan Speed (FAN SPEED) button , "⌐¬" will blinking.



2. Press the Mode (MODE) selector button to choose the desired operation mode.
3. Press ⏻ (ON/OFF) button.
   Then, the indoor unit will starts to operate independently accoring the selected operation mode.



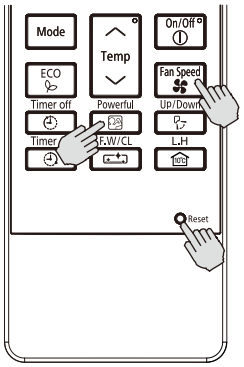
NOTE :
(1) During "DISPLAY OPERATION MODE", "⌐¬" blinks on LCD of remote controller.
(2) When operation stops, "DISPLAY OPERATION MODE" is canceled.

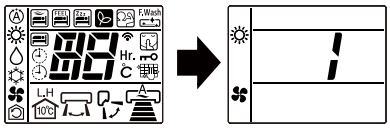
9.4. HOW TO CHANGE THE INTERMITTENT FAN CONTROL SETTING

The intermittent fan control during thermo off in Heating mode can be changed by the remote controller.
(This procedure should be done only by service personnel.)
It is possible to select from 3 patterns.

PROCEDURE

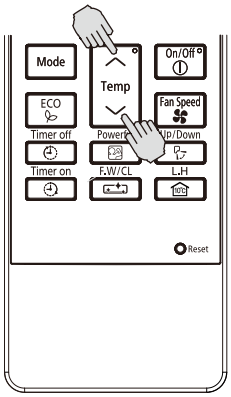
1. Press Powerful (POWERFUL) button, Fan Speed (FAN SPEED) button and press RESET [RESET] button simultaneously.
   Release RESET [RESET] button only and make sure that all marks on the remote controller display are indicated, then release Powerful (POWERFUL) button and Fan Speed (FAN SPEED) button.
   Remote controller now enters "Intermittent Fan Control Change Mode".



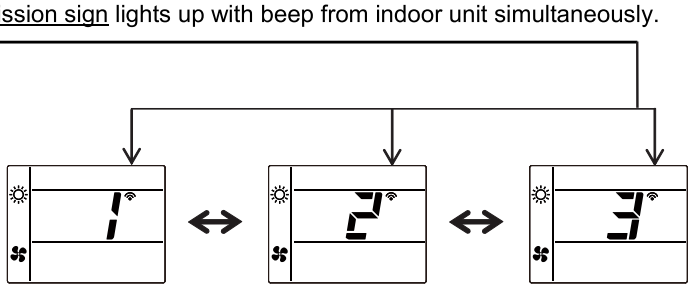


Default : Pattern 1

2. Press [ROOM TEMPERATURE setting] [∧(UP)]/[V(DOWN)] buttons.
   (The intermittent pattern changed with indoor unit beep sound.)



Transmission sign lights up with beep from indoor unit simultaneously.



Pattern 1 Pattern 2 Pattern 3

	Pattern 1	Pattern 2	Pattern 3
Single Model	Continuous	30sec ON / 210sec OFF repeatedly	50sec ON / 190sec OFF repeatedly
Multi Model	30sec ON / 210sec OFF repeatedly	50sec ON / 190sec OFF repeatedly	Continuous

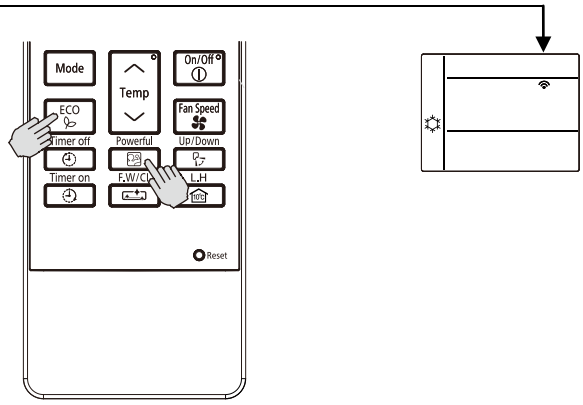
NOTE :
(1) The indication of the selected intermittent pattern will disappear after 10 seconds.
(2) The selected intermittent pattern will remain unchanged after the unit is turned off.

9.5. HOW TO CHANGE THE FAN SPEED IN COOLING MODE DURING THERMO OFF

The fan speed in Cooling mode during thermo off can be changed by the remote controller.
(This procedure shall be implemented strictly by service personnel only.)
It is possible to return it to the default setting.

PROCEDURE

Press Powerful (POWERFUL) button and ECO (ECO) button simultaneously for about 5 seconds when the remote controller is OFF.
Transmission sign lights up with beep from indoor unit simultaneously.



Beep sound pattern : 1)Default setting : Short beep
2)Changed setting : Double beep

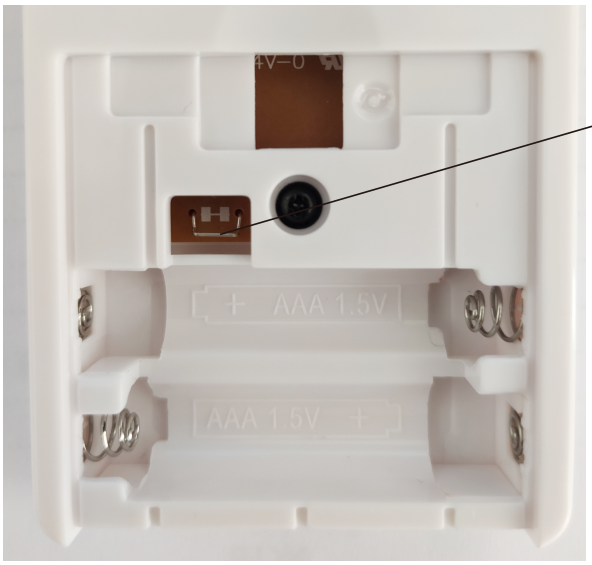
	Fan speed during thermo off
Default Setting	Ultra low
Changed Setting	Set fan speed (When auto fan speed is set, the fan speed is low)

NOTE :
(1)The selected fan speed will remain unchanged after the unit is turned off.
(2)If Timer reservation has been set, it will be canceled.
(3)During time setting and timer setting, this operation cannot be set.

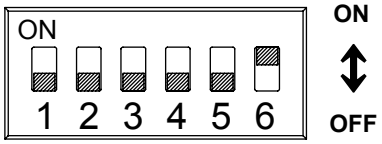
9.6. SETTING THE PREVENTION OF MUTUAL INTERFERENCE

a.) Other indoor circuit breakers should be disconnected.

b.) Remore the back cover of the remote control.
c.) Cut the jumper as shown below.
d.) Press “Reset” button after installing the battery.
e.) Corresponding to the room electrical box dial code 6 to dial on.



Cut (Attention: Remove the battery before cutting.
Do not cut with electricity).



f.) Please use the remote cotrol to check the available models of corresponding indoor machines.

9.7. ERROR CODE INFORMATION

9.7.1. HOW TO DISPLAY ERROR CODE

1. Set the remote to “OFF”.
2. Press Mode (MODE) button on the remote control to set it to ☼ mode.
3. Press Temp (TEMPERATURE) button of the remote control and set the room temperature on the remote control to 32℃.
4. Hold down press Temp (TEMPERATURE) button for about 2 seconds,then press the On/Off (ON/OFF) button.
5. Transmission sign lights up with beep from indoor unit simultaneously and the error code will be displayed.
6. Use the wind speed button to set the fan speed according to the required fault information (See the table below).

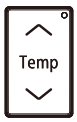
Error code setting for fan speed	
Fan speed	Error code
Auto	Newest
High	Second newest
Med	Third newest
Low	Fourth newest
Silent	Oldest

The specific information of error code is shown in the table below:

	TIMER LAMP BLINKING	LD301 BLINKING	CODE	MEANING
INDOOR	-	-	000 00	Normal
	1 time		001 00	Refrigerant cycle fault
	2 times	-	-	Outdoor unit is under forced operation
	3 times	9 times	003 00	Communication error between indoor and outdoor units
	9 times	-	009 00	Indoor thermistor
	10 times	-	010 00	Abnormal rotating numbers
	12 times	9 times	012 00	Communication error between indoor and outdoor units
	13 times	-	013 00	EEPROM data reading error
	18 times	-	018 00	Cleaning defective
OUTDOOR	4 times	2 times	002 01	Peak current cut
	4 times	3 times	003 01	Compressor abnormal low speed rotation
	4 times	4 times	004 01	Compressor switching failure
	4 times	5 times	005 01	Overload lower limit cut
	4 times	6 times	006 01	OH thermistor temperature rise
	4 times	7 times	007 01	Abnormal outdoor thermistor
	4 times	9 times	009 01	Communication error
	4 times	10 times	010 01	Abnormal power source
	4 times	11 times	011 01	Fan stop for strong wind
	4 times	12 times	012 01	Fan motor fault
	4 times	13 times	013 01	EEPROM reading error
	4 times	14 times	014 01	Active converter defective
	4 times	15 times	015 01	Abnormal PWB circuit
	4 times	16 times	016 01	High load stop

9.7.2. HOW TO REMOVE ERROR CODE

1. Read history error code.
2. Press 

(MODE) button on the remote control to set it to ☼ mode.
3. Press 

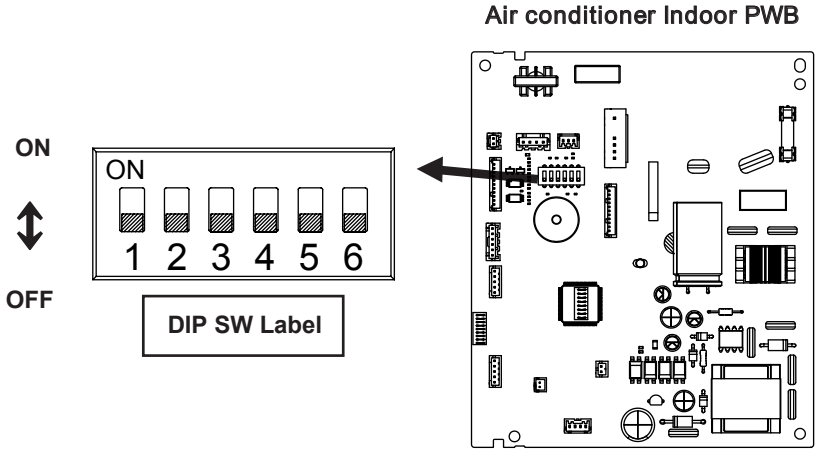
(TEMPERATURE) button of the remote control and set the room temperature on the remote control to 16℃.
4. Hold down press 

(TEMPERATURE) button for about 2 seconds,then press the 

(ON/OFF) button.
5. Transmission sign lights up with beep from indoor unit simultaneously and the error code will be removed.

9.8. ADDITIONAL FUNCTION VIA DIP-SWITCH SETTINGS

A new DIP Switch is available on the PWBs of the indoor unit that provide additional functions via the settings on the switches.



SW No.	I T E M	F U N C T I O N								
1	AUTO RESTART	OFF*	ENABLE	ON	DISABLE					
2	CARD KEY MODE	OFF*	DISABLE	ON	ENABLE					
3	CARD KEY LOGIC SELECT	OFF*	INPUT HIGH ACTIVE	ON	INPUT LOW ACTIVE					
4	HEATING/COOLING ONLY MODE SELECT	OFF*	HEATING & COOLING	OFF	HEATING ONLY	ON	COOLING ONLY	ON	HEATING & COOLING	
5	HEATING/COOLING ONLY MODE SELECT	OFF*		ON		OFF		ON		
6	REMOCON ID SELECT	OFF*	SELECT ID : A	ON	SELECT ID : B					

NOTE:

* Marking is position of shipping [FACTORY default setting]

9.8.1. AUTO RESTART FUNCTION

The AUTO RESTART function can be enabled or disabled by setting Pin No. 1 on the DIP SWITCH above to the ON or OFF position accordingly.

9.8.2. HEATING/COOLING ONLY MODEL SELECTION

When this function is enabled, the operation mode could be locked to either Heating Only (Heating or Fan) or Cooling Only (Cooling, Fan or Dehumidifying) by setting the Pin No. 4 and 5 accordingly.

LOCKED MODE	REMARKS
HEATING ONLY	Unit will not enter into Cooling mode although cooling mode is selected using the remote controller.
COOLING ONLY	Unit will not enter into Heating mode although heating mode is selected using the remote controller.

10 OPTION LIST

10.1. WIRED REMOTE CONTROL – SPX-RCDB

RAR-5G2 (SPX-RCDB)

BUTTONS	FUNCTION
	MODE Selector Use this button to select the operationg mode. Every time you press this button, the mode will change from (AUTO) → (HEAT) → (DEHUMIDIFY) → (COOL) and → (FAN) cyclically.
FAN	**FAN SPEED Selector Button** This determines the fan speed. Every time you press this button, the airflow rate will change from (AUTO) → (HIGH) → (MED) → (LOW) → (SILENT) (This button allows selection of optimal or preferred fan speed for each operation mode).
	ON/OFF button Press this button to start operation. Press it again to stop operation.
	SLEEP button Use this button to set the SLEEP timer.
SET	**SET button** Timer setting reservation.
OFF	**OFF button** Select the turn OFF timer.
ON	**ON button** Select the turn ON timer.
CANCEL	**CANCEL button** Cancel timer reservation.
	AUTO SWING (Vertical) button Controls the angle of the horizontal air deflector.
	ROOM TEMPERATURE setting button Value will change quicke when keep pressing.

10.1.1. SHIFT VALUE

1. Press and hold (ON/OFF) button and (ON TIMER) button at the same time while giving a single press on the RESET button until remote controller now enter 'Shift value change mode'.
2. Press (ON/OFF) button so that the display indicates FAN (FAN) speed.
3. Select FAN (FAN SPEED) button to choose Heating Shift or Cooling Shift Mode.

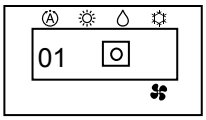
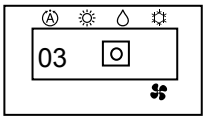
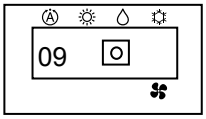
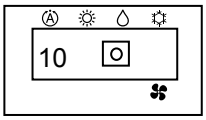
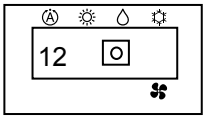
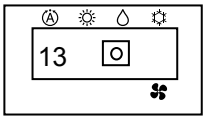
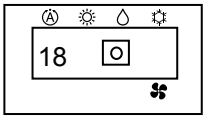
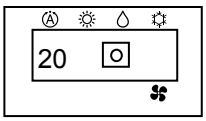
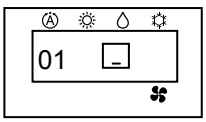
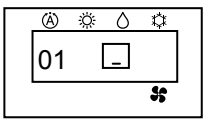
   By setting fan speed to HIGH or MED , it will go to Cooling Shift mode.
   By setting fan speed to LOW or SILENT , it will go to Heating Shift mode.

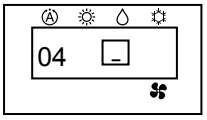
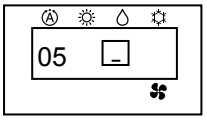
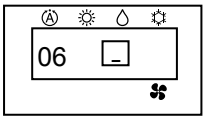
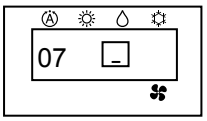
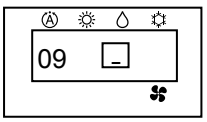
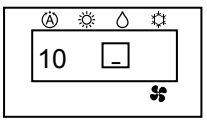
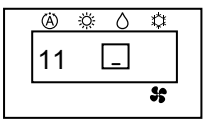
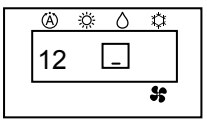
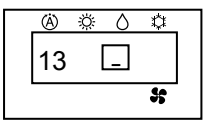
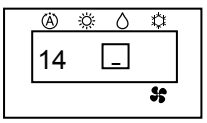
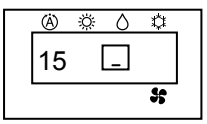
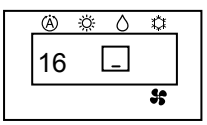
4. Press (ROOM TEMPERATURE) button to change the shift value (-3°C ~ 0 ~ 3°C).
5. Press (ON/OFF) button to end 'Shift value setting mode'.

NOTE:
1. There are total of 7 shift values ranging from -3 to 3.
2. The changed shift value will remain unchanged after turned off the power.

10.1.2. ERROR CODE INFORMATION

1. In case failure occurs to the air conditioner, the error code will constantly appear on the wired remote controller display.

	TIMER LAMP BLINKING	LD301 BLINKING	CODE	MEANING
INDOOR	-	-	-	Normal
	1 time			Refrigerant cycle fault
	2 times	-	-	Outdoor unit is under forced operation
	3 times	9 times		Communication error between indoor and outdoor units
	9 times	-		Indoor thermistor
	10 times	-		Abnormal rotating numbers
	12 times	-		Communication error between indoor and outdoor units
	13 times	-		EEPROM data reading error
	18 times	-		Cleaning defective
	20 times	-		Human sensor defective
OUTDOOR	4 times	2 times		Peak current cut
	4 times	3 times		Compressor abnormal low speed rotation

	TIMER LAMP BLINKING	LD301 BLINKING	CODE	MEANING
OUTDOOR	4 times	4 times		Compressor switching failure
	4 times	5 times		Overload lower limit cut
	4 times	6 times		OH thermistor temperature rise
	4 times	7 times		Abnormal outdoor thermistor
	4 times	9 times		Communication error
	4 times	10 times		Abnormal power source
	4 times	11 times		Fan stop for strong wind
	4 times	12 times		Fan motor fault
	4 times	13 times		EEPROM reading error
	4 times	14 times		Active converter defective
	4 times	15 times		Abnormal PWB circuit
	4 times	16 times		High load stop

10.2. H-LINK ADAPTOR – PSC 6RAD

10.2.1. SAFETY SUMMARY

DANGER:

– *DO NOT pour water into the remote control switch (hereafter called "controller"). This product is equipped with electrical parts. This will cause serious electrical shock.*

WARNING:

– *DO NOT perform installation work and electrical wiring connection by yourself. Contact your distributor or dealer of HITACHI and ask then for installation work and electrical wiring by service person. The specified cable should be used to connect (i) room air conditioner and adaptor, and (ii) controller and adaptor.*

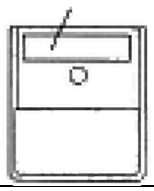
CAUTION:

– *DO NOT install the indoor unit, outdoor unit, controller and cable as such places as:*
  – *where there is oil vapor and dispersion of oil*
  – *where there is sulfuric environment (near the hot springs)*
  – *where there is a flammable gas*
  – *where there is salty environment (near the sea)*
– *DO NOT install the indoor unit, outdoor unit, controller and cable within approximately 3 meters from strong electromagnetic wave radiators, such as medical equipment. In case that the controller is installed in a place where there is electromagnetic wave direct-radiation, shield the controller and cables by covering with the steel box and running the cable through the metal conduit tube.*
– *In case that there is electric noise at the power source for the indoor unit, provide a noise filter.*

10.2.2. INSTALLATION WORK

■ **Before installation**

Check the contents and the number of the accessories in the packing.

Adaptor	 With two 1.8m cables
1 piece of cover for hiding the covering	Attached 2 sided tapes 
Two-sided tape for attaching to Adaptor	 110x40x3mm
2 connectors for H-Link connection	
2 tapping screws for attaching to wall	 ϕ3.0 x 10mm
2 screws for attaching to wooden wall	 ϕ3.1 x 16mm

1) RAC adaptor can be installed to the wall as well as on the air conditioner itself
2) Install RAC adaptor in the vertical surface as shown below.

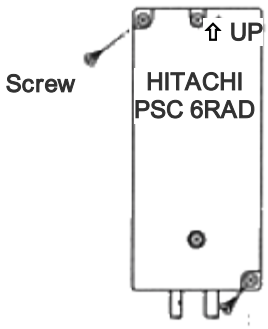
Upper side

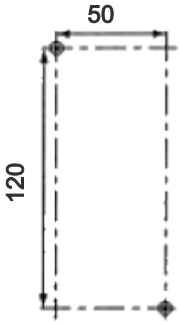
Mark " ⇧ UP"

Wiring outlet

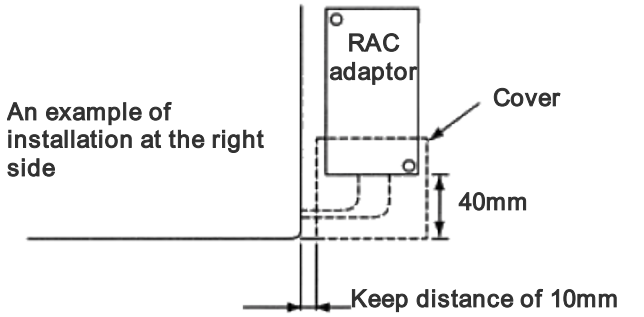
Bottom side

3) Installation procedure
   a) When installing to the wall.
      i) Fix the adaptor with 2 screws. Tapping screw is for metal surface, and other screw is for wooden surface.

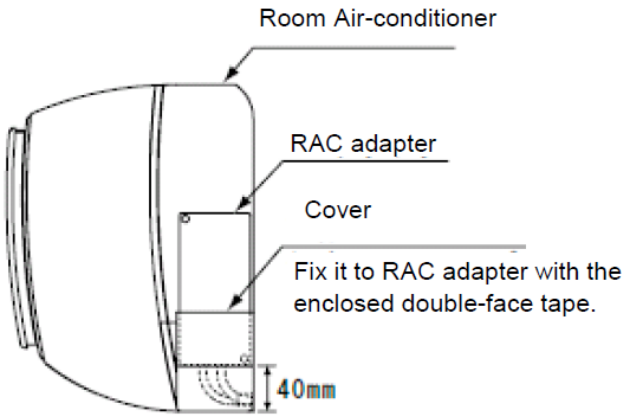




      ii) When using the cover
      It can be installed at the right and left side of room air conditioner. Fix the cover and RAC adaptor with the two-sided tape (accessory).



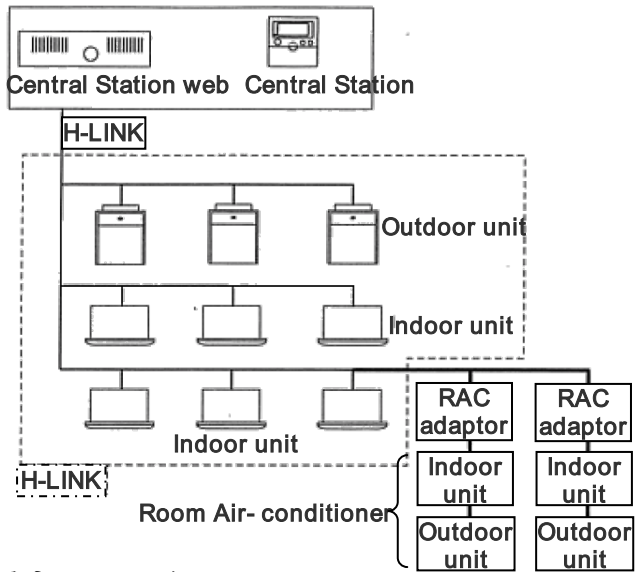
b) When installing on the room air-conditioner
In case that it cannot be installed to the wall due to the space or material problem, install the RAC adaptor with the two-sided tape (accessory) on the room air-conditioner.
   i) Confirm if the piping cover of the unit can be removed when performing the service maintenance, and then fix the RAC adaptor in the side of room air-conditioner with two-sided tape. (Available at the right as well as left side)
   ii) Clean the surface to be installed with a dry cloth.



NOTE:
- *Consider the following points since the adhesiveness changes according to the environmental conditions (temperature, humidity etc)*
- *The adhesiveness is decreased when there is humidity or oil.*
- *Warm the adhesive part and installation place of the two-sided tape to avoid the decrease of the adhesiveness in case the ambient temperature is low.*
- *DO NOT touch the adhesive part by fingers nor re-attach it many times. The adhesiveness has decreased and the RAC adaptor may fall off.*
- *DO NOT apply any force within 24 hours after installation.*

10.2.3. ELECTRICAL WIRING

■ System configuration



CAUTION:
- *Turn OFF the power supply of the room air-conditioner of the central control device when performing the wiring work*
- *DO NOT run all the H-LINK cable or power supply cable along the other signal cable, or malfunction may occur due to the noise, etc. If it is required to run along the other transmission cable, separate the cable more than 30cm, or run the cable through the metal tube and earth the tube.*
- *Follow local codes and regulations when performing electrical wiring and earth wiring.*
- *Transmissions cable used in H-LINK shall be 2 cores cable (0.7mm^2 to 1.25mm^2 for model: VCTF, VCT, CVV, MVVX, CVVX, VVR, VVF) or 2 cores twisted pair cable (model: KPEV, KPEV-Spec). Total length of cable shall be below 1000mm.*
- *DO NOT use wire with more than 3 cores.*

■ Internal components and Wiring connections

Check the contents and the number of the accessories in the packing.

- Access
  Open the cover by removing the ① and ② screws.

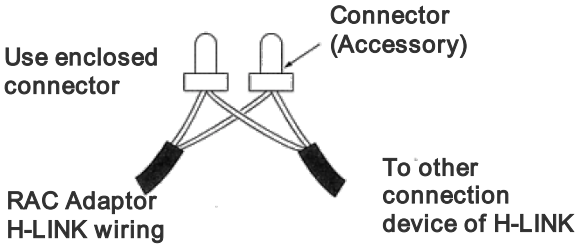
- Wiring Connection
  Connection with Room Air-Conditioner
  i) Remove the front cover of the room air-conditioner and the cover of electrical box.
  ii) The cable attached with the connector of the RAC adaptor shall be connected with the connector of indoor PCB

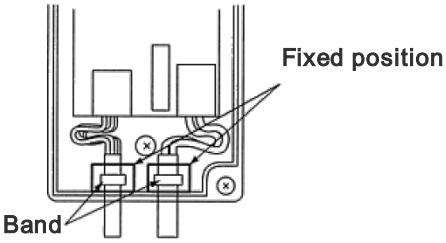
iii) Install the electrical box cover paying attention not to clamp the cable. Read the installation manual of each room air-conditioner for confirming how to connect and how to assemble the cable of the RAC adaptor.

CAUTION:
- *Disconnect the power plug before performing this work*
- *Turn OFF the break power source in case the power is supplied from the outdoor unit.*

- Connection of Transmission Cable

H-LINK transmission cable connecting to RAC adaptor shall be connected to H-LINK.

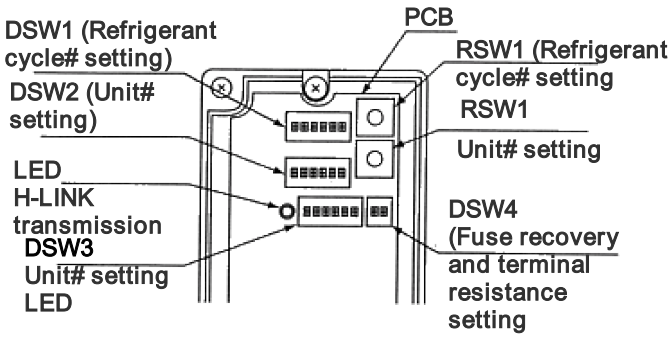




CAUTION:
- *DO NOT connect incorrect wiring. It may cause the failure of the RAC Adaptor. Especially pay attention not to apply high voltage e.g. AC400/230V.*
- *DO NOT perform the wiring work while power to the central station or the RAC Adaptor is still being supplied. It may cause malfunction. Turn OFF devices when performing the wiring work.*
- *The RAC Adaptor side cable should not overload to the connector.*
- *DO NOT clamp the cable when attaching the RAC adaptor cover.*
- *Band should not be loose and in fixed position.*

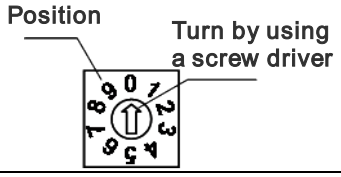
10.2.4. DIP SWITCH SETTING

1) Switch OFF the power of room air conditioner before setting the DIP switch. If the power is ON, the settings are INVALID.
2) The position of the DIP switch is shown below.

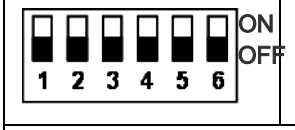
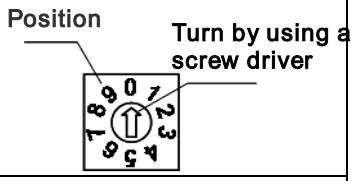
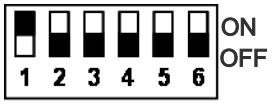
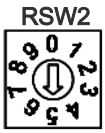


CAUTION:
- *DO NOT turn ON various pins of DSW1 and DSW2*

3) Set the refrigerant cycle# by RSW1 and DSW1

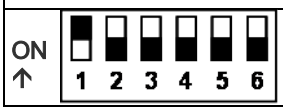
DSW1 (Ten digit)	RSW1 (Last digit)
	
DSW1 and RSW1 are set “0” before shipment. Up to 15 cycles can be set.	
E.g. Setting in Ref No. 5  No. 1 pin is OFF	 The position is Set 5

4) Set the unit No. by RSW2 and DSW2

DSW2 (Ten digit)	RSW2 (Last digit)
	
DSW2 and RSW3 are set “0” before shipment. Up to 15 cycles can be set.	
E.g. Setting in Unit No. 15  No. 1 pin is OFF	 The position is Set 5

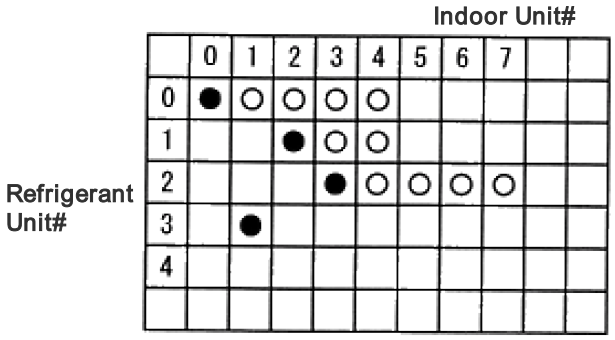
5) Slave unit.

In case of setting various RAC adaptors in the same refrigerant cycle, set the RAC adaptor with smallest Unit# as a master unit. In case of setting only one RAC adaptor in a refrigerant system, this adaptor should be a master unit. Set this procedure by DSW3.

Master Unit setting	Setting before shipping (slave unit setting)
	

●: Master Unit setting

○: Setting before Shipping (Slave Unit setting)

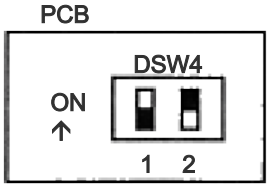


CAUTION:

– *DO NOT set various main adaptors in the same refrigerant cycle.*

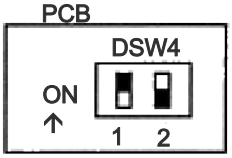
6) Procedure when applying 200V voltage to H-LINK wiring incorrectly.

In case of applying 200V voltage to H-LINK wiring incorrectly, the fuse installed in a transmission circuit on PCB will blow out. In this case, reconnect the wiring correctly and turn ON No. 2 pin of DSW4 on PCB. The transmission circuit can be recovered. (If applying this error again, the transmission circuit can not be recovered)



Turn ON No.2 pin of DSW4

7) Terminating resistance is set in whole H-LINK system.
   a) If H-LINK connecting devices like package air-conditioner are connected besides the RAC Adaptor, set the terminating resistance by those connecting devices. The terminating resistance should be set ON in only one position in whole H-LINK system.
   b) In case that H-LINK is connected only by the RAC adaptor, set the terminating resistance by the RAC adaptor. The terminating resistance should be set ON in only one position in whole H-LINK system.



Turn ON No.1 pin of DSW4

10.2.5. TEST RUN

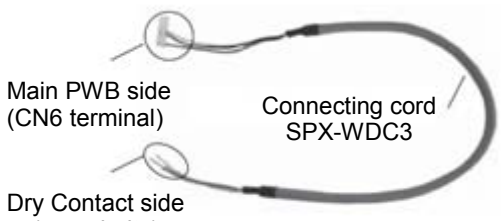
Test run should be performed in the following after finishing the installation, wiring and setting. Refer to the installation manuals enclosed with the control system equipment.

1) Confirmation of RAC Adaptor Connection
   Confirm if the RAC adaptor connection is recognized in the control system equipments. In case that it is not confirmed, check the transmission cable, refrigerant cycle #, indoor unit #, terminal resistance setting etc.
2) Registration
   Confirm if the RAC adaptor connection is recognized.
3) Confirmation of RUN/STOP Operation.
   Confirm if the room air-conditioner operate correctly by RUN/STOP from the central control system equipments. Check also if the room air-conditioner operation changes correctly by each setting.

10.3. DRY CONTACT (SPX-WDC3) APPLICATION (USING DIP SWITCH)

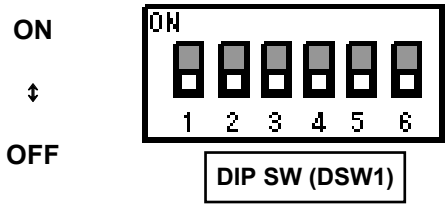
The dry contact system enables the operation of the air conditioner indoor unit to be controlled by using external dry contacts (with non voltage) such as card-key controller or window for facilities such as hotels.

Optional Connecting cord Accessory SPX-WDC3



Note:

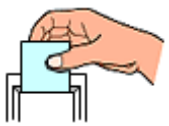
1) AUTO RESTART function set to "Enable" is needed (set pin#1 on the DIP SWITCH SW501 above to OFF position).
2) DRY CONTACT function is "Enable" by set pin No. 2 of the DIP SWITCH (DSW1) to ON position.
3) Select the proper setting for DRY CONTACT LOGIC INPUT pin No. 3 on DIP SWITCH (DSW1)
   i) Set to OFF position (Hi Input) if the type of Dry Contact switch to be used (for the CARD KEY UNIT or Window) is of contact type a (Normally Open Type) as shown in below diagram.
   ii) Set to ON position (Lo Input) if the type of Dry contact switch to be used (for the CARD KEY UNIT or Window) is of contact type b (Normally Close Type) as shown in below diagram.



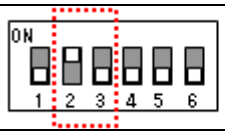
Pin No.	Function	Switch Position / Setting			
2	DRY CONTACT function	OFF	Disable	ON	Enable
3	DRY CONTACT Input Logic	OFF	HI Input Active	ON	LO Input Active

- Please decide the type of dry contact you will be using and set the position of the DIP Switch No. 2 and 3 accordingly

[1] CHECK DRY CONTACT OF CARD KEY UNIT

	AIR CONDITIONER Standby	AIR CONDITIONER Operating
CARD KEY (Door Switch)	REMOVE 	INSERT 
Contact type a	OPEN 	CLOSE 
Contact type b	CLOSE 	OPEN 

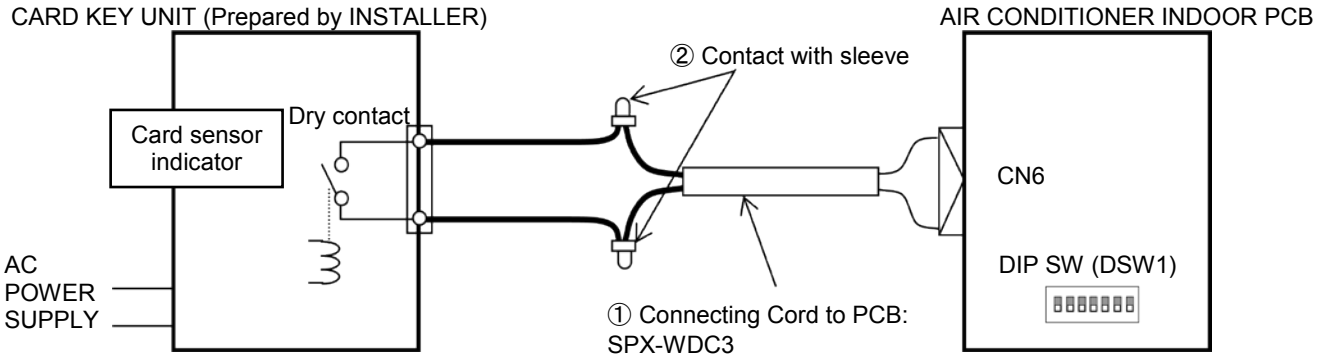
[2] SET THE POSITION OF DIP SWITCH

POSITION CONDITION OF DIP SWITCH	
INITIAL CONDITION (CARD KEY NO USE) 	No.2 : OFF No.3 : OFF
HI Input Active 	No.2 : ON No.3 : OFF
LO Input Active 	No.2 : ON No.3 : ON

After all connection has been done as below diagram, ON the breaker and push ON button of wireless remote controller or wired remote controller to operate the air conditioner unit.

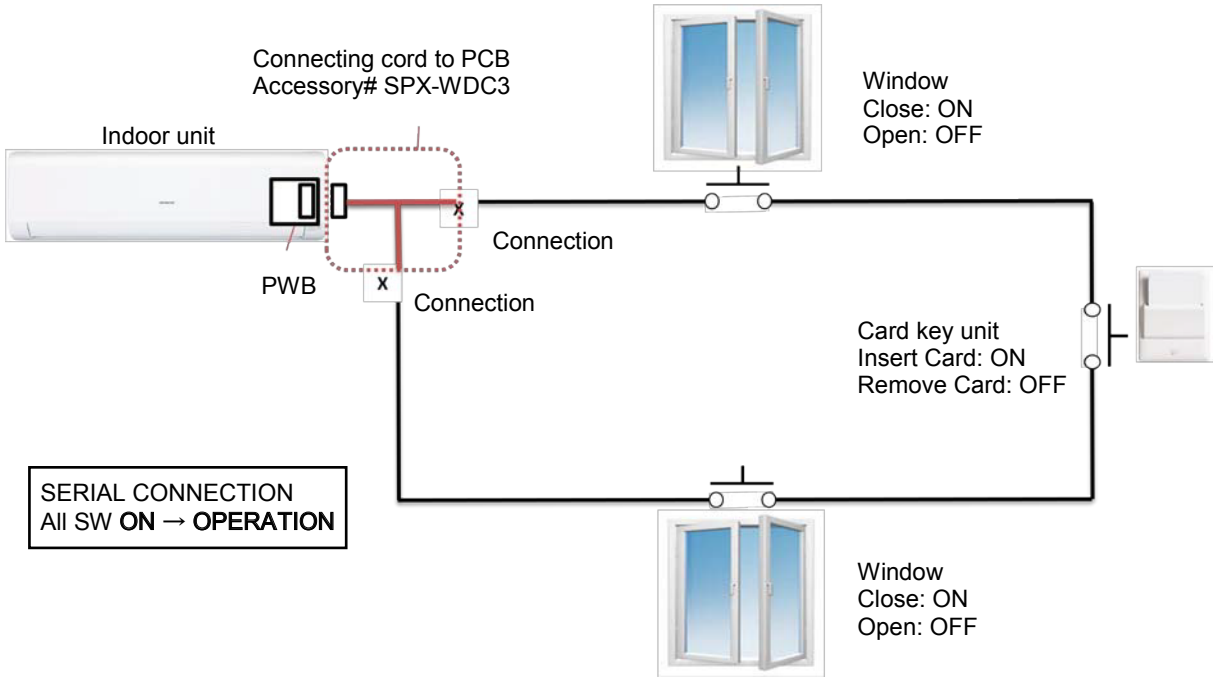
- When the CARD KEY is in insert condition, the air conditioner operation is allowable by remote controller.
- When the dry contact switch on the Card Key Unit is open (refer to diagram below for contact type a), the unit stops to operate (it takes 10 seconds to stop the unit operation after the dry contact switch on the card key turns off) and vice versa.
- When the card key is removed from the Card Key Unit, the wireless remote controller cannot be used.
- When the card key is removed from the Card Key Unit, the wired remote controller LCD display is activated; however it has no control over the unit.
- The suitable accessory Connecting Cord (accessory code#: SPX-WDC3) need to be used to connect the Card Key Unit's dry contact switch to the connector on the control board of the indoor unit. Please refer to Table 1 to select suitable accessory code# for the concerning indoor model.

Example of wiring connection to Card Key Unit will be as below (reference only)

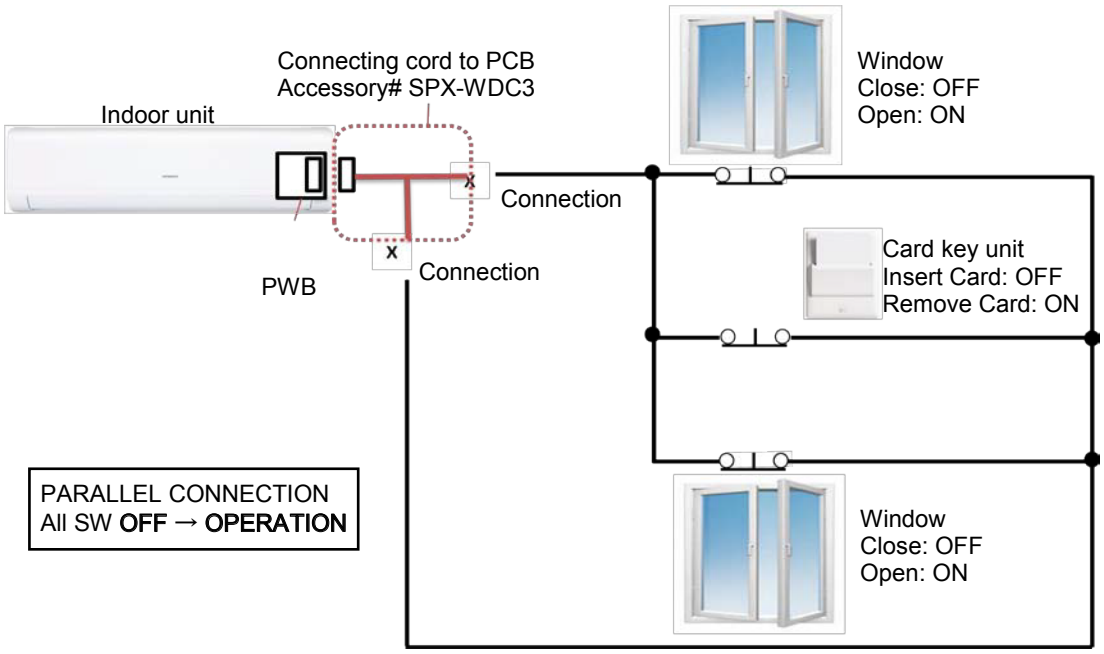


- CONNECTION EXAMPLE

i. Pin No. 3 of DIP SWITCH is set to OFF position (HI Input Active) for Dry Contact Type a



ii. Pin No. 3 of DIP SWITCH is set to ON position (LO Input Active) for Dry Contact Type b



Please refer to the actual manual supplied with the optional connecting cords SPX-WDC3 for more details.

HITACHI

TC-ERP-Model

INDOOR	OUTDOOR
RAK-18REF	RAC-18WEF
RAK-25REF/25REFC	RAC-25WEF
RAK-35REF/35REFC	RAC-35WEF
RAK-50REF/50REFC	RAC-50WEF