

TECHNICAL CATALOGUE

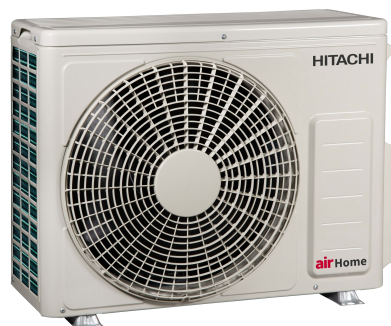
HITACHI

Cooling & Heating

**RAK-CJ20PHAE
RAK-CJ25PHAE
RAK-CJ35PHAE
RAK-CJ50PHAE**



**RAC-CJ20WHAE
RAC-CJ25WHAE
RAC-CJ35WHAE**



RAC-CJ50WHAE



HITACHI

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HITACHI to bring in the latest innovations to their customers**

**Whilst every effort is made to ensure that all dimensions and specifications are correct, any
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CONTENTS

CONTENTS	1
1 SPECIFICATIONS	2
2 DIMENSIONAL DATA	4
3 CAPACITIES TABLE	7
3.1. CAPACITY CHARACTERISTIC CURVES	7
3.2. CORRECTION FACTORS ACCORDING TO PIPING LENGTH	10
3.3. CORRECTION FACTORS ACCORDING TO DEFROSTING OPERATION	12
4 SOUND DATA	13
5 WORKING RANGE	17
5.1. POWER SUPPLY	17
5.2. WORKING RANGE	17
6 ELECTRICAL DATA	18
6.1. INDOOR UNIT	18
6.2. OUTDOOR UNIT	18
7 WIRING DIAGRAM	19
8 REFRIGERANT CYCLE	21
9 CONTROL AND FUNCTION	22
9.1. RC-AGL1IA0E	22
9.2. HOW TO SET UP FROM SERVICE SETTING MODE	23
9.3. HOW TO OPERATE THE HHRC METHOD	24
9.4. HOW TO ADJUST FILTER SIGNTIME	24
9.5. SERVICE SETTING ITEM USED FORH200 MODEL	25
9.6. BUZZER SOUNDING FOR SHOWING ERROR CONTENTS	27
9.7. OTHER SETTING	28
9.8. ERROR CODE INFOMATION	29
9.8.1. HOW TO DISPLAY ERROR CODE	29
9.8.2. HOW TO REMOVE ERROR CODE	30
10 OPTION LIST	31
10.1 H-LINK ADAPTOR	31
10.1.1 SAFETY SUMMARY	31
10.1.2 INSTALLATION WORK	31
10.1.3 ELECTRICAL WIRING	32
10.1.4 DIP SWITCH SETTING	33
10.1.5 TEST RUN	34
10.2 SU DRY CONTACT APPLICATION	35
10.3 WIRED REMOTE CONTROL - SPX-URFG1	37
10.3.1 SERVICE & INSTALLATION SCREEN	38
10.3.2 SERVICE SETTINGS	42

1 SPECIFICATIONS

1.1. WALL TYPE

INDOOR	Unit	RAK-CJ20PHAE	RAK-CJ25PHAE	RAK-CJ35PHAE	RAK-CJ50PHAE
Nominal capacity adjustable		no	no	no	no
Nominal Cooling capacity (min - max)	kW	2.00 (0.90 - 2.50)	2.40 (0.90 - 3.10)	3.20 (0.90- 4.00)	4.60 (1.90- 5.20)
Cooling sensible capacity	kW	1.87	2.07	2.50	3.45
Nominal Heating capacity (min - max)	kW	2.50 (0.90 - 3.20)	2.80 (0.90- 3.80)	3.90 (0.90- 5.00)	5.60 (2.20- 6.50)
Noise level cooling (sound pressure) (SL / L / M / H/SH)	dB(A)	21/24/29/33/37	21/25/30/36/40	21/27/35/39/43	28/33/38/42/46
Noise level heating (sound pressure) (SL / L / M / H/SH)	dB(A)	20/24/30/34/38	20/25/31/36/41	20/30/37/40/44	25/31/37/42/47
Noise level (sound power) *match with Fiche/Eurovent/Product Info	dB(A)	51	54	57	60
Air flow cooling mode (SL / L / M / H/SH)	m³/h	200/260/400/450/515	200/260/405/480/570	210/270/420/500/585	250/300/500/560/610
Air flow heating mode (SL / L / M / H/SH)	m³/h	220/290/480/550/600	220/335/495/620/690	230/405/550/650/715	255/410/550/680/750
Fan Motor	W	18	18	18	18
Dehumidification	l/h	1.2	1.4	1.6	2.0
Included drain pump *for RAI/RAD	yes/no	no	no	no	no
Max. height available for drain pump (RAD/RAI only)	cm	no	no	no	no
Drain pump pressure lift *for RAI/RAD	cm	no	no	no	no
Static pressure (SL / L / M / H) *for RAD	Pa	no	no	no	no
Dimensions (H x W x D)	mm	280 x 780 x 222	280 x 780 x 222	280 x 780 x 222	280 x 780 x 222
Weight *must match with Packing data information	kg	7.0	7.0	7.7	7.7
Panel weight *for RAI	kg	-	-	-	-
Panel dimensions (H x W x D) *for RAI	mm	-	-	-	-
Colour (Munsell Code)		star white *ZYY8001	star white *ZYY8001	star white *ZYY8001	star white *ZYY8001
Condensate Drain	mm	φ16mm	φ16mm	φ16mm	φ16mm
Panel reference		-	-	-	-
Color of the panel (RAL)		-	-	-	-
Running current (C/H) *for single split indoor&outdoor must be matched	A	1.09-5.00/1.09-4.50	1.09-5.70/1.09-6.10	1.09-6.90/1.09-6.80	2.17~8.80/2.17~10.2
Power supply	V	220-240V	220-240V	220-240V	220-240V
Cable section (interconnection/*if power supply is connected to indoor)	mm²	1.50x 3+EARTH/-	1.50x 3+EARTH/-	1.50x 3+EARTH/-	1.50x 3+EARTH/-
Piping diameter (Liq / Gas)	Inch	1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"
Drain diameter (ext)	mm	φ16mm	φ16mm	φ16mm	φ16mm
Remote control (standard/optional)	Standard	RC-AGL1IA0E	RC-AGL1IA0E	RC-AGL1IA0E	RC-AGL1IA0E
	Optional	SPX-URFG1	SPX-URFG1	SPX-URFG1	SPX-URFG1
Filter					
ACL Filter Standard (Material & Accessory code)		-	-	-	-
ACL Filter Standard Dimensions (H x W x D)	mm	-	-	-	-
ACL Filter Optional (Material - Accessory code)		Virosense Z2 Filter / SPX-VSZ2	Virosense Z2 Filter / SPX-VSZ2	Virosense Z2 Filter / SPX-VSZ2	Virosense Z2 Filter / SPX-VSZ2
Pre-filter Standard Material		WASHABLE	WASHABLE	WASHABLE	WASHABLE
Pre-filter Optional (Material & Accessory code)		-	-	-	-

NOTE:

1. The nominal cooling and heating capacity is the combined capacity of the HITACHI standard split system, and are based on the EN 14511.

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-CJ20WHAE	RAC-CJ25WHAE	RAC-CJ35WHAE	RAC-CJ50WHAE
Minimum / Maximum indoor units connectable (for MULTI only)		no	no	no	no
Minimum / Maximum connected indoor capacity (for MULTI only)		no	no	no	no
Nominal Cooling capacity (min - max) *for single split indoor&outdoor must be matched	kW	2.00 (0.90 - 2.50)	2.40 (0.90 - 3.10)	3.20 (0.90- 4.00)	4.60 (1.90- 5.20)
Nominal Heating capacity (min - max) *for single split indoor&outdoor must be matched	kW	2.50 (0.90 - 3.20)	2.80 (0.90- 3.80)	3.90 (0.90- 5.00)	5.60 (2.20- 6.50)
Nominal cooling power input (min - max)	kW	0.580(0.250-1.000)	0.743(0.250-1.200)	0.991 (0.250 - 1.480)	1.769(0.500 - 2.000)
Nominal heating power input (min - max)	kW	0.641(0.250-0.850)	0.755(0.250-1.300)	1.051(0.250 - 1.440)	1.647(0.500 - 2.300)
Heating at -7C (Full load without defrost)	kW	2.20	2.90	3.50	4.80
Heating at -7C (Full load with defrost)	kW	1.75	2.40	2.70	3.80
EER / COP (T1/H1 condition)		3.45/3.90	3.23/3.71	3.23/3.71	2.60/3.40
SEER / SCOP *average climate		6.80/4.00	6.80/4.00	6.60/4.20	6.10/4.00
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	51
Noise level (sound power)	dB(A)	59	61	62	64
Air flow (Cooling / Heating)	m³/h	1860 / 1620	1860 / 1620	1860 / 1620	2100 / 2100
Dimensions (H x W x D)	mm	530x660 x278	530x660 x278	530x660 x278	570x750x288
Weight	kg	21.2	21.2	22.6	31.5
Colour (Munsell Code)		Beige (5Y7/2)	Beige (5Y7/2)	Beige (5Y7/2)	Beige (5Y7/2)
Power supply	V/Ph/Hz	220-240V / 1Ph / 50Hz	220-240V / 1Ph / 50Hz	220-240V / 1Ph / 50Hz	220-240V / 1Ph / 50Hz
Recommended fuse size	A	15	15	15	25
Starting current(rated current of COOL/HEAT whichever higher for inverter)	A	3.45/3.66	3.80/4.15	5.20/5.46	8.08/7.52
Running current (C/H) *for single split indoor&outdoor must be matched	A	1.09-5.00/1.09-4.50	1.09-5.70/1.09-6.10	1.09-6.90/1.09-6.80	2.17~8.80/2.17~10.2
Cable section (power)	mm²	1.50x 2+EARTH	1.50x 2+EARTH	1.50x 2+EARTH	1.50x 2+EARTH
Interconnection between indoor unit and outdoor unit	mm²	1.50x 3+EARTH	1.50x 3+EARTH	1.50x 3+EARTH	1.50x 3+EARTH
Piping diameter (Liq / Gas) *for single split indoor&outdoor must be matched	Inch	1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"	1/4" / 3/8"
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	0.500	0.500	0.700	0.900
Chargeless length / Additional refrigerant charge	m / g/m	20/-	20/-	20/-	20/-
Working range (cooling / heating)	°C	-10°C— 46°C/	-10°C— 46°C/	-10°C— 46°C/	-10°C— 46°C/
	°C	-15°C—24°C	-15°C—24°C	-15°C—24°C	-15°C—24°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 Type	ACS-68R or equivalent	ACS-68R or equivalent	ACS-68R or equivalent	ACS-68R or equivalent
	Oil Charge l	320±20	320±20	320±20	440±20
	Coil resistance	2.084 at 20°C	2.084 at 20°C	2.084 at 20°C	1.93 at 20°C
	Quantity	1	1	1	1

NOTE:

1. The Sound Pressure Level is based on the following conditions:

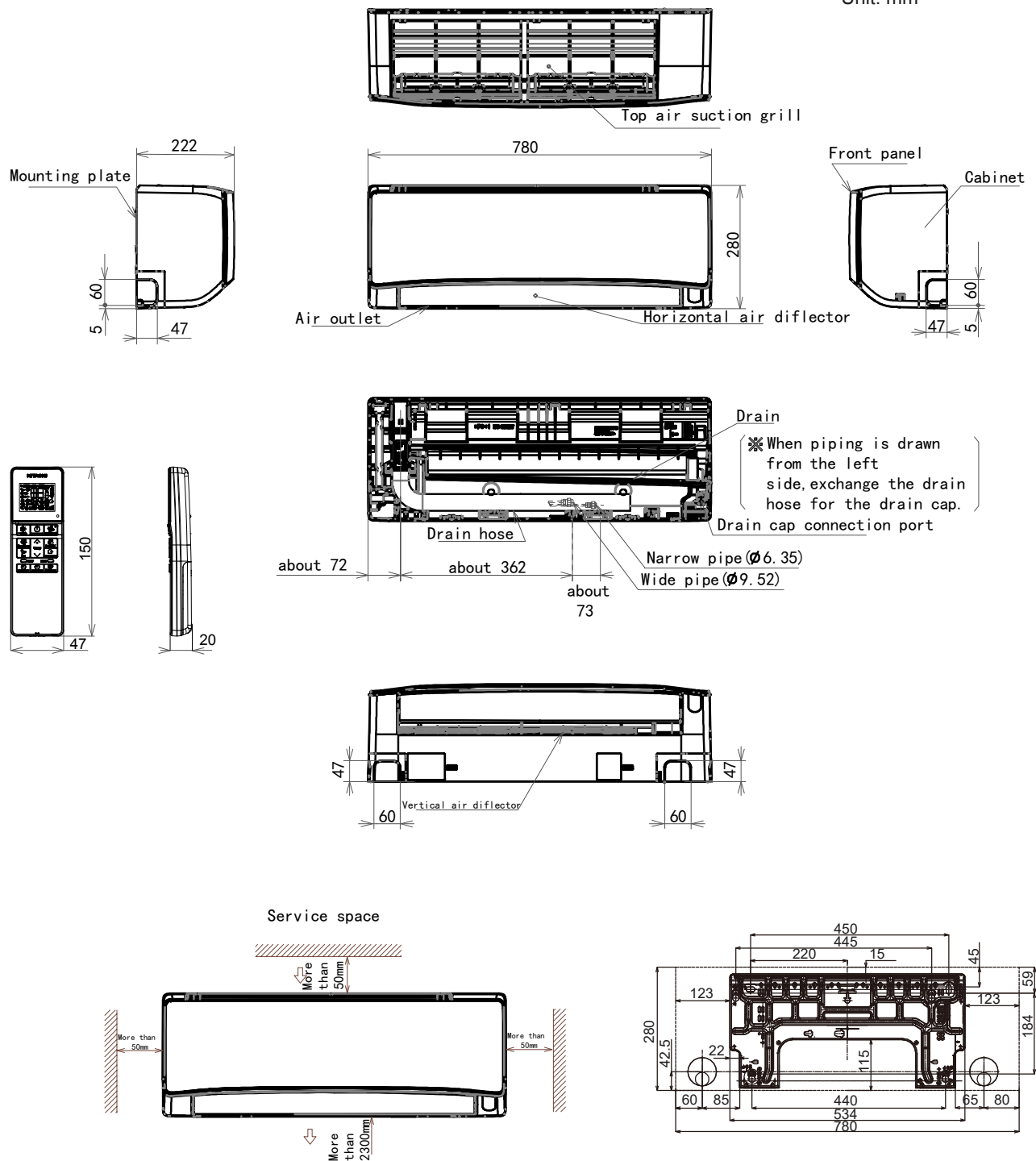
- 1 meter from the unit front surface and 1 meter from floor level

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

2 DIMENSIONAL DATA

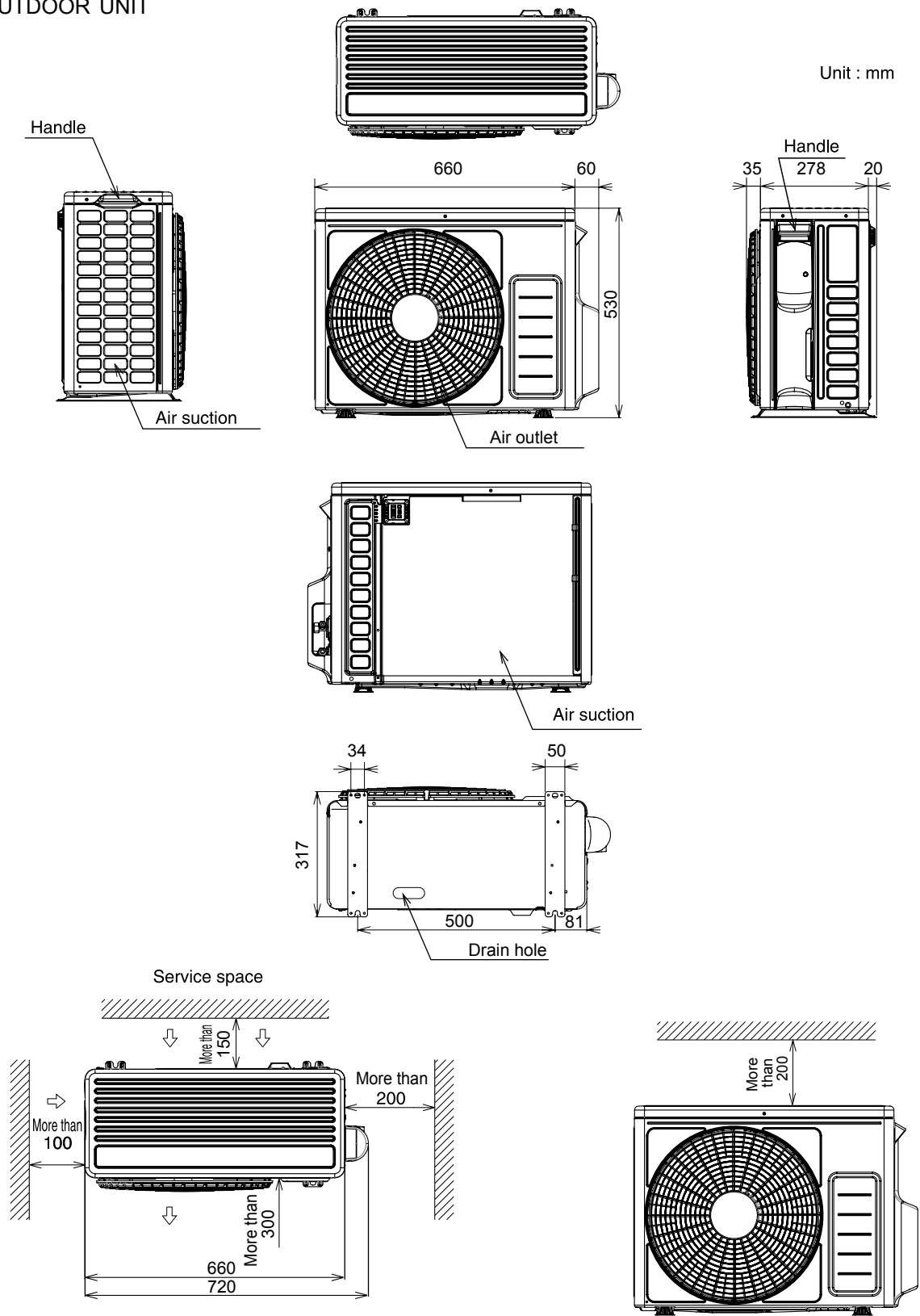
2.1. WALL TYPE: RAK-CJ20PHAE,RAK-CJ25PHAE,RAK-CJ35PHAE,RAK-CJ50PHAE

Unit: mm



2.2. WALL TYPE: RAC-CJ20WHAE,RAC-CJ25WHAE,RAC-CJ35WHAE

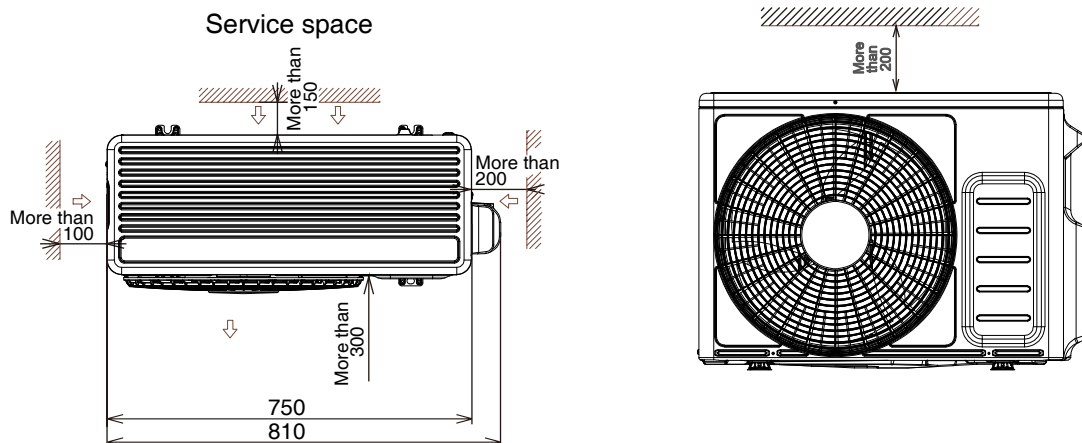
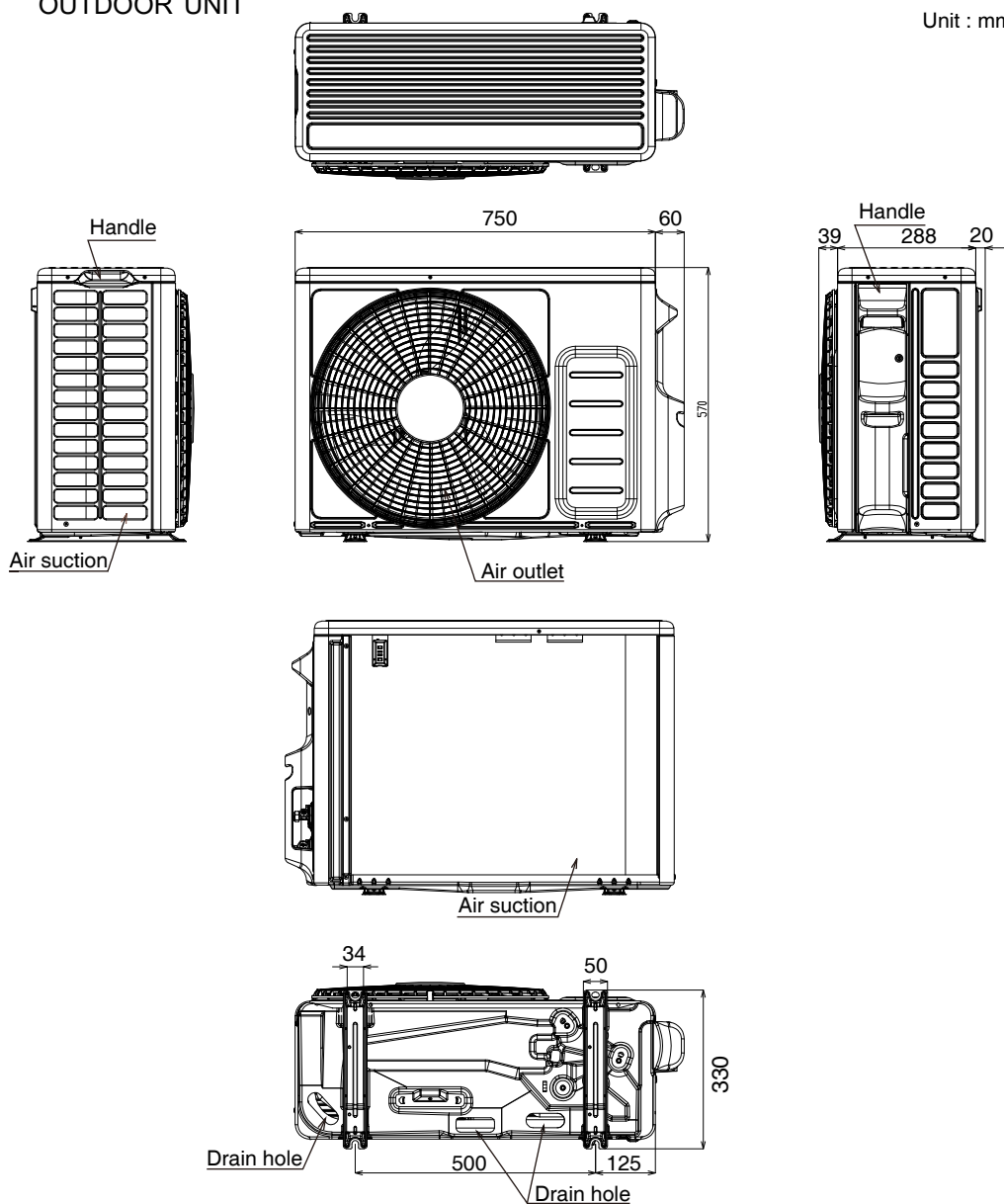
OUTDOOR UNIT



2.3. WALL TYPE: RAC-CJ50WHA-E

OUTDOOR UNIT

Unit : mm



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-CJ20PHAE/RAC-CJ20WHAE

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	1389	1175	289	1880	1872	410	1740	1728	483	1640	1638	534	1580	1566	557	1480	1476	597	1420	1404	621
14.0	20	1389	1175	289	2020	1872	410	1880	1746	489	1760	1638	539	1700	1584	563	1580	1476	603	1520	1422	632
16.0	22	1389	1250	293	2160	1872	415	2000	1746	495	1880	1638	545	1820	1584	574	1700	1476	615	1640	1422	638
18.0	25	1489	1340	298	2300	2034	421	2120	1890	500	2000	1782	551	1920	1710	574	1800	1602	621	1720	1530	644
19.0	27	1540	1386	302	2380	2142	426	2200	1980	506	2080	1872	557	2000	1800	580	1880	1692	621	1800	1620	644
22.0	30	1707	1371	302	2640	2124	426	2440	1962	506	2300	1854	563	2220	1782	586	2000	1728	644	1860	1692	679
24.0	32	1824	1371	307	2820	2124	432	2600	1962	512	2460	1854	563	2360	1782	592	2080	1764	661	1900	1746	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	1675		605	2019		673	2232		707	2279		689	2390		657	2529		591	2734		629	3096		690
18	1663		612	2006		680	2216		717	2261		702	2370		670	2514		616	2720		655	3073		720
20	1650		618	1994		686	2200		727	2243		715	2350		684	2500		641	2706		682	3050		750
22	1638		624	1981		693	2184		737	2225		727	2330		698	2486		666	2693		708	3027		780
24	1625		631	1969		699	2168		747	2207		740	2310		711	2471		691	2679		735	3004		810

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-CJ25PHAE/RAC-CJ25WHAЕ

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	1764	1430	392	2256	2153	525	2088	1987	619	1968	1884	684	1896	1801	713	1776	1697	765	1704	1615	795
14.0	20	1764	1430	392	2424	2153	525	2256	2008	626	2112	1884	691	2040	1822	721	1896	1697	773	1824	1635	810
16.0	22	1764	1522	398	2592	2153	532	2400	2008	633	2256	1884	698	2184	1822	736	2040	1697	788	1968	1635	817
18.0	25	1892	1632	404	2760	2339	539	2544	2174	641	2400	2049	706	2304	1967	736	2160	1842	795	2064	1760	825
19.0	27	1956	1687	410	2856	2463	546	2640	2277	648	2496	2153	713	2400	2070	743	2256	1946	795	2160	1863	825
22.0	30	2168	1668	410	3168	2443	546	2928	2256	648	2760	2132	721	2664	2049	750	2400	1987	825	2232	1946	869
24.0	32	2317	1668	416	3384	2443	553	3120	2256	655	2952	2132	721	2832	2049	758	2496	2029	847	2280	2008	899

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	2203		918	2656		1021	2935		1074	2926		1019	2895		894	2832		696	3103		754	3577		849	
18	2189		926	2642		1029	2918		1086	2906		1034	2872		910	2816		725	3087		785	3551		885	
20	2175		933	2628		1036	2900		1098	2886		1049	2850		927	2800		755	3072		817	3525		920	
22	2161		941	2614		1044	2882		1110	2865		1064	2828		943	2784		785	3056		848	3499		955	
24	2147		948	2600		1051	2865		1122	2845		1079	2805		959	2768		814	3041		879	3473		990	

3.1.3. RAK-CJ35PHAE/RAC-CJ35WHAЕ

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	2055	1509	456	2614	2260	609	2419	2086	717	2624	2275	912	2528	2175	951	2368	2050	1021	2272	1950	1060
14.0	20	2055	1509	456	2809	2260	609	2614	2107	726	2816	2275	922	2720	2200	961	2528	2050	1031	2432	1975	1080
16.0	22	2055	1606	464	3003	2260	617	2781	2107	734	3008	2275	932	2912	2200	981	2720	2050	1050	2624	1975	1090
18.0	25	2204	1722	471	3198	2455	625	2948	2281	743	3200	2475	941	3072	2375	981	2880	2225	1060	2752	2125	1100
19.0	27	2278	1780	478	3309	2585	633	3059	2390	751	3328	2600	951	3200	2500	991	3008	2350	1060	2880	2250	1100
22.0	30	2526	1760	478	3671	2564	633	3393	2368	751	3680	2575	961	3552	2475	1001	3200	2400	1100	2976	2350	1159
24.0	32	2699	1760	485	3921	2564	641	3615	2368	760	3936	2575	961	3776	2475	1011	3328	2450	1130	3040	2425	1199

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	2569		1029	3175		1123	3549		1168	3614		1138	3762		1081	3945		968	4307		1020	4942		1104			
18	2550		1039	3156		1134	3525		1184	3585		1159	3731		1104	3922		1010	4285		1064	4906		1153			
20	2530		1050	3136		1144	3500		1201	3557		1180	3700		1126	3900		1051	4264		1108	4870		1202			
22	2511		1061	3117		1155	3475		1218	3529		1200	3669		1148	3878		1092	4242		1151	4834		1251			
24	2491		1071	3097		1165	3451		1234	3501		1221	3638		1171	3855		1134	4221		1195	4798		1300			

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-CJ50PHAE/RAC-CJ50WHAE

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	2677	1886	738	3388	2811	980	3136	2595	1155	3772	3140	1627	3634	3002	1698	3404	2829	1822	3266	2691	1893
14.0	20	2677	1886	738	3640	2811	980	3388	2622	1168	4048	3140	1645	3910	3036	1716	3634	2829	1840	3496	2726	1928
16.0	22	2677	2007	750	3892	2811	993	3604	2622	1182	4324	3140	1663	4186	3036	1751	3910	2829	1875	3772	2726	1946
18.0	25	2870	2153	761	4145	3054	1005	3820	2838	1195	4600	3416	1681	4416	3278	1751	4140	3071	1893	3956	2933	1964
19.0	27	2967	2225	773	4289	3217	1018	3965	2973	1209	4784	3588	1698	4600	3450	1769	4324	3243	1893	4140	3105	1964
22.0	30	3289	2201	773	4757	3190	1018	4397	2946	1209	5290	3554	1716	5106	3416	1787	4600	3312	1964	4278	3243	2070
24.0	32	3515	2201	784	5082	3190	1031	4685	2946	1222	5658	3554	1716	5428	3416	1804	4784	3381	2017	4370	3347	2140

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	3456		1442	4331		1520	4871		1548	4995		1542	5290		1554	5664		1518	6187		1557	7104		1619
18	3428		1459	4303		1537	4835		1574	4955		1574	5245		1589	5632		1582	6156		1626	7052		1695
20	3400		1475	4275		1553	4800		1600	4914		1607	5200		1624	5600		1647	6125		1694	7000		1772
22	3372		1491	4247		1570	4765		1626	4874		1639	5155		1658	5568		1712	6094		1762	6948		1849
24	3344		1508	4219		1586	4729		1652	4833		1672	5110		1693	5536		1776	6063		1831	6896		1925

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:

$$CCA = CC \times F$$

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:

$$HCA = HC \times F$$

HCA: Actual Corrected Heating Capacity (kcal/h)

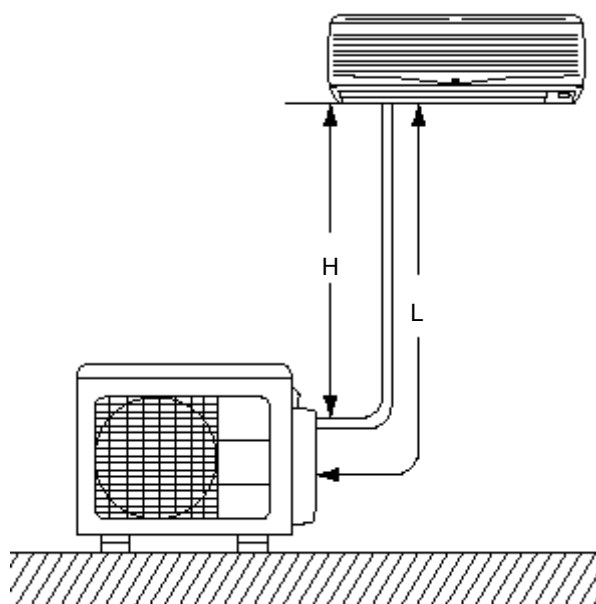
HC: Heating Capacity in the Performance Table (kcal/h)

F: Correction Factor Based on the Equivalent Piping Length

The correction factors are shown in the following figure.

Equivalent Piping Length for:

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

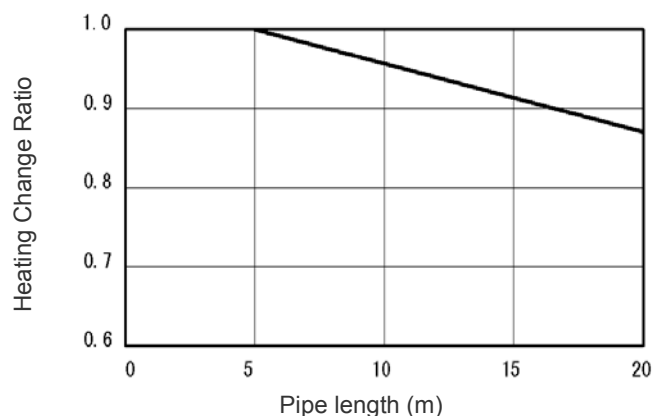
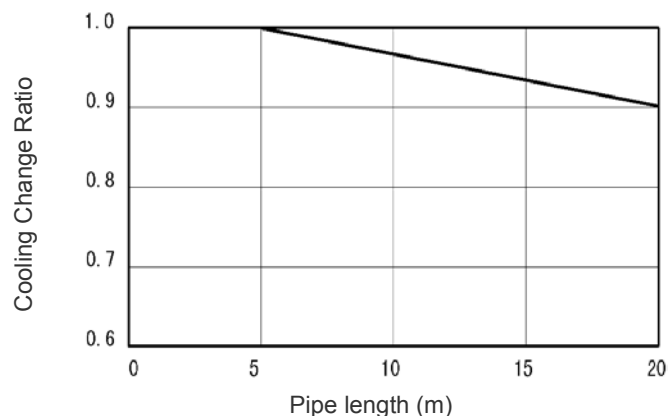


H: Vertical Distance Between Indoor Unit and Outdoor Units in Meters

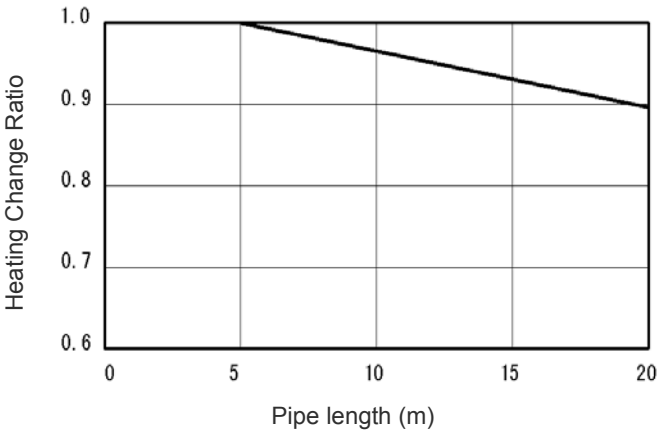
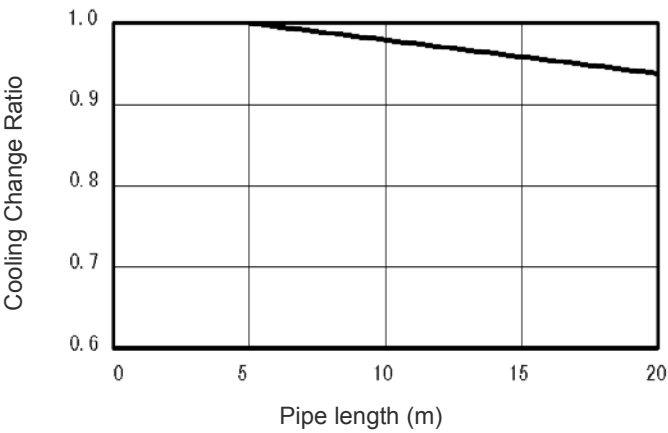
L: Actual One-Way Piping Length Between Indoor Unit and Outdoor Unit in Meters

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

Models : RAK-CJ20PHAE/RAC-CJ20WHAE, RAK-CJ25PHAE/RAC-CJ25WHAE, RAK-CJ35PHAE/RAC-CJ35WHAE



Models : RAK-CJ50PHAE/RAC-CJ50WHAE



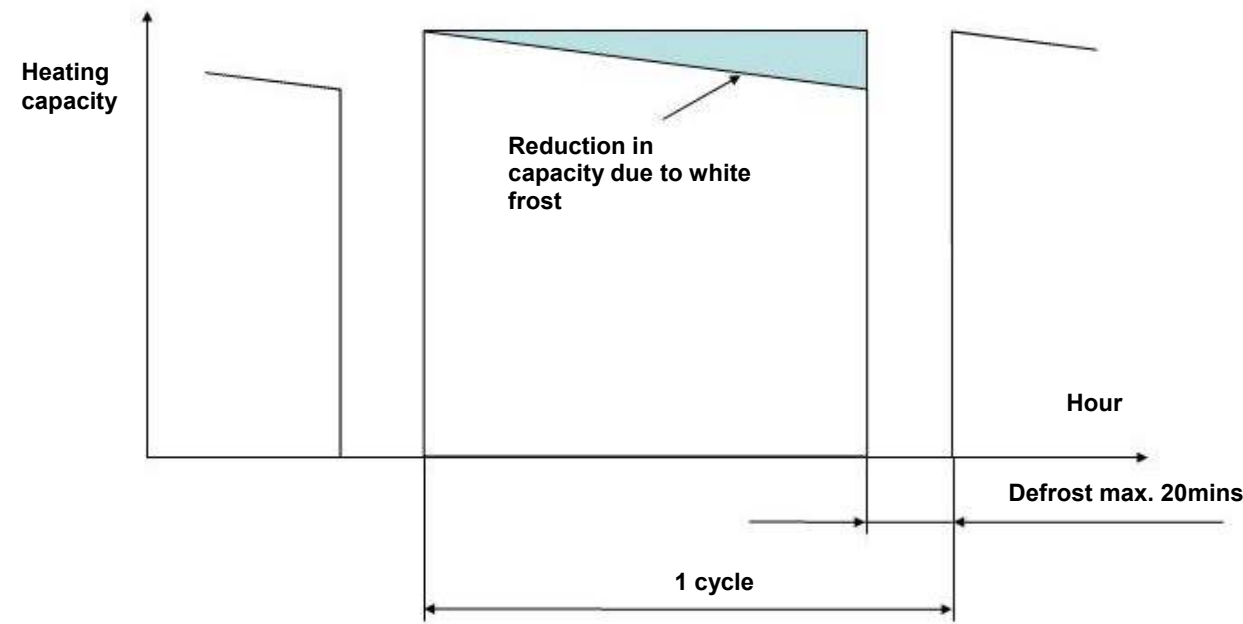
3.3. CORRECTION FACTORS ACCORDING TO DEFROSTING OPERATION

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)	0.70	0.80	0.92	0.95	1.0	1.0	1.0

Correction Factor

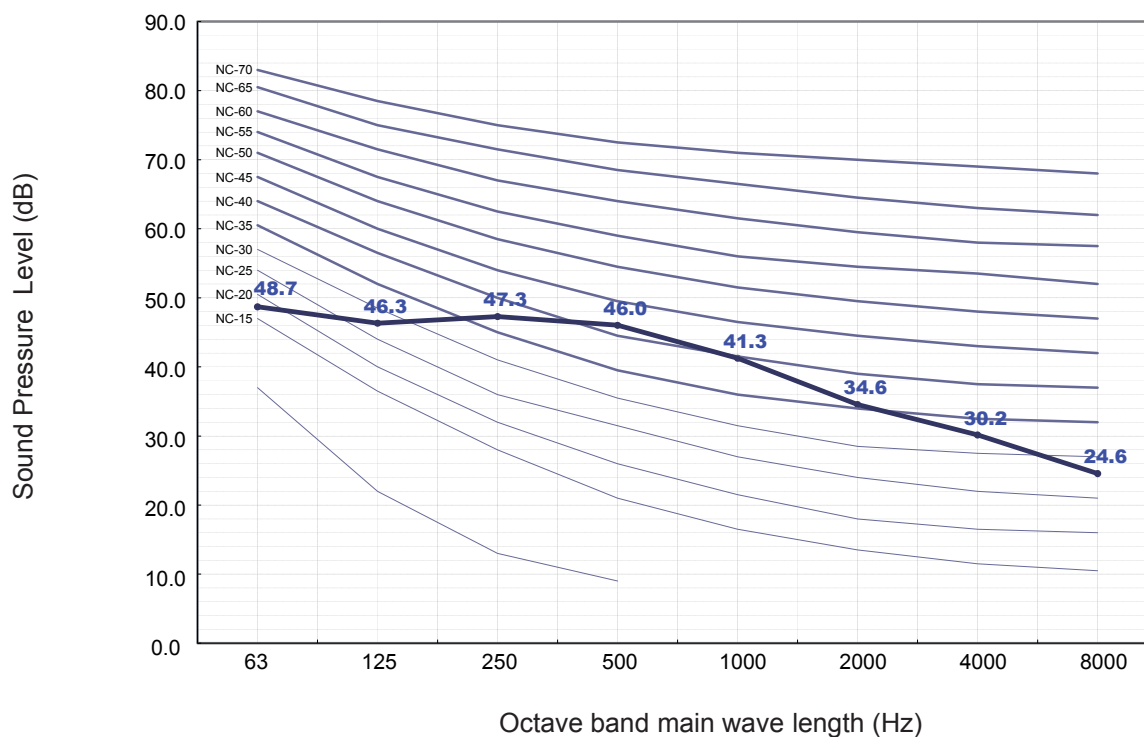


NOTE:
The correction factor is not valid for special conditions such as snowfall or operation in a transitional period.

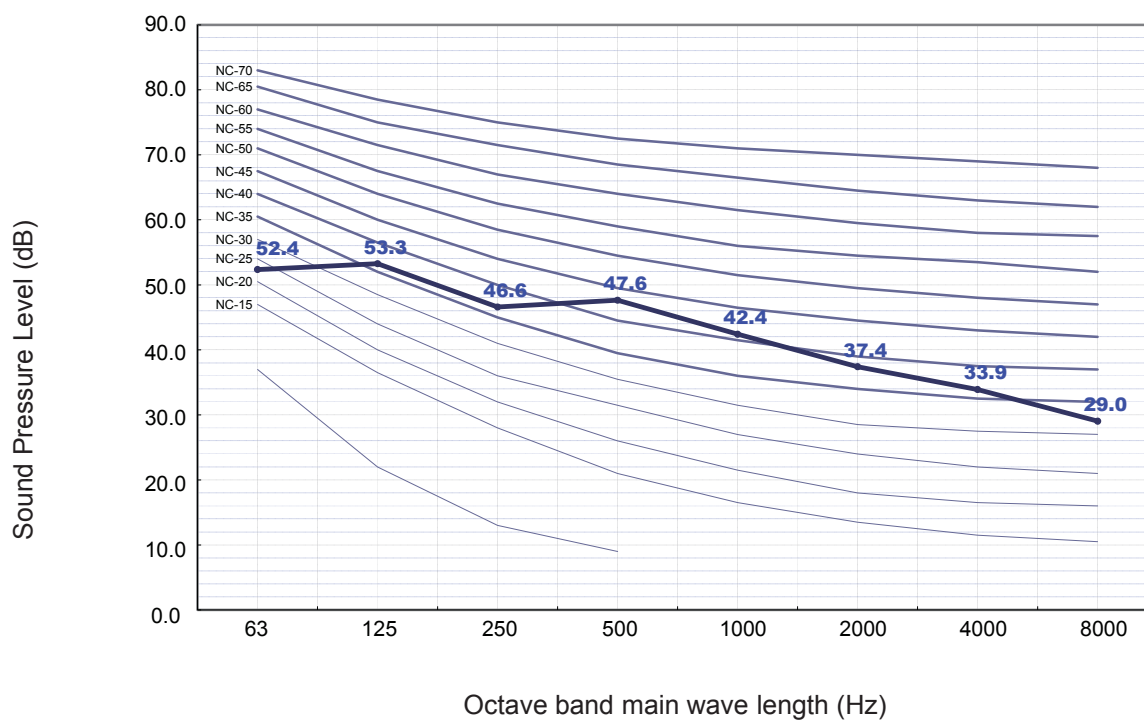
4 SOUND DATA

4.1. RAC-CJ20WHAЕ

COOLING



HEATING



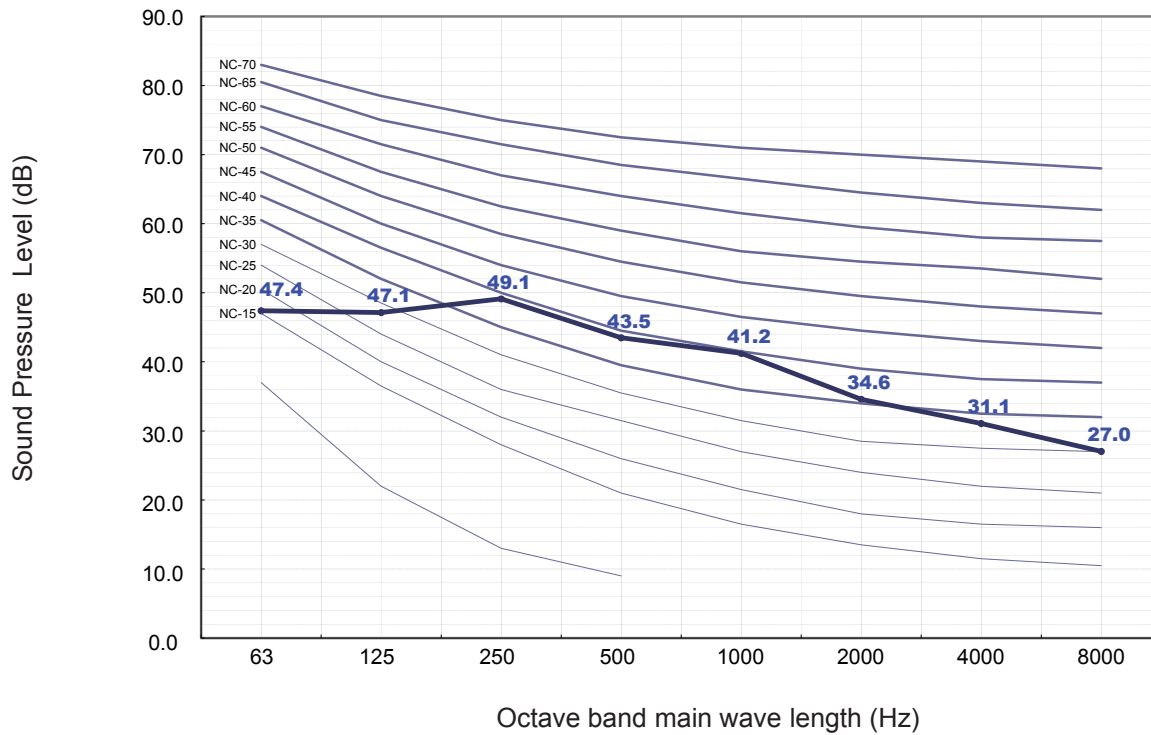
The Sound Pressure Level is based on the following conditions:

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

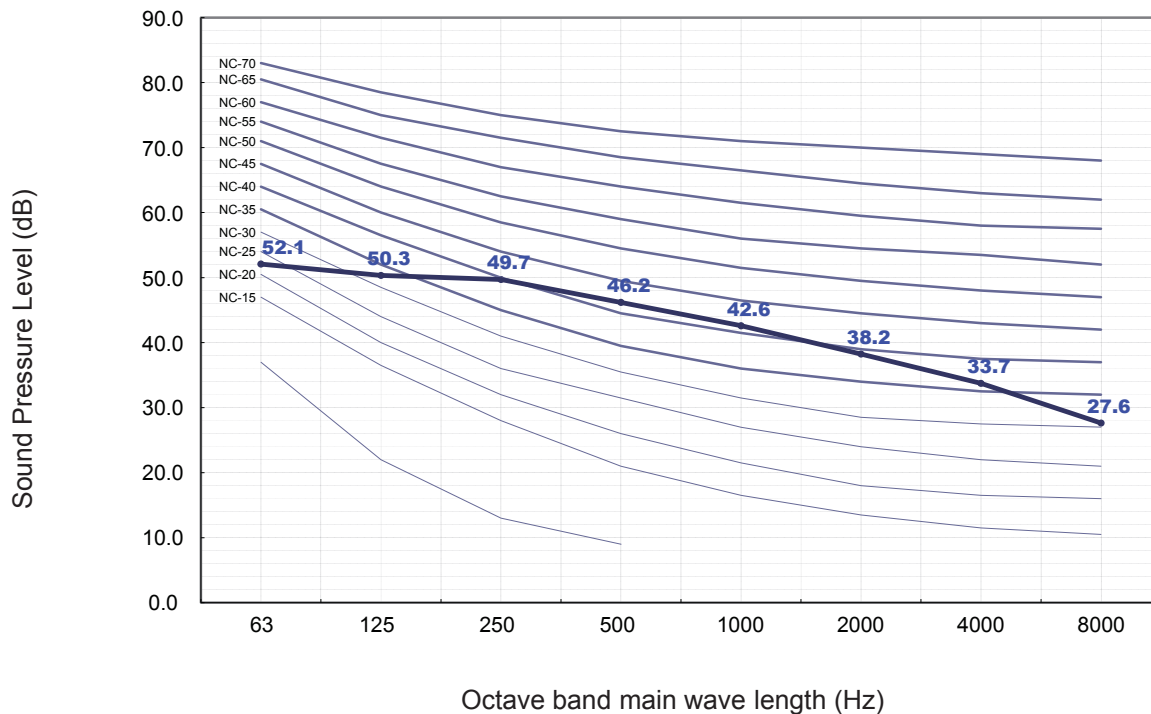
The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.2. RAC-CJ25WHAЕ

COOLING



HEATING



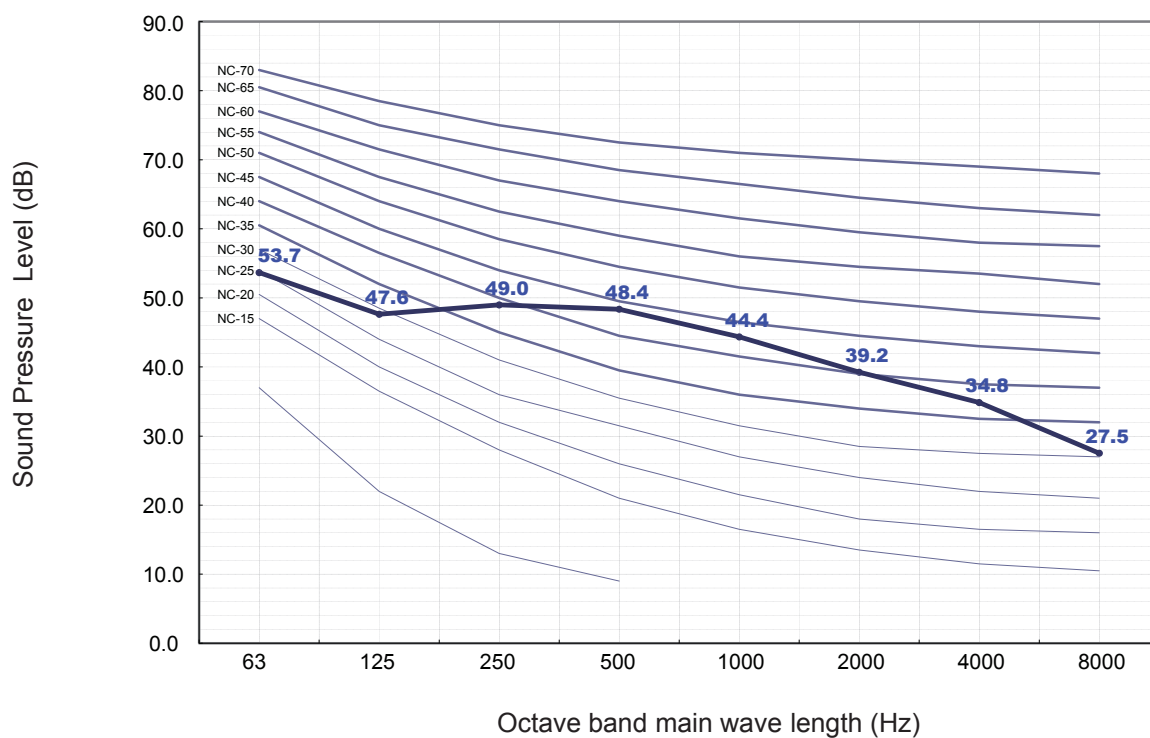
The Sound Pressure Level is based on the following conditions:

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

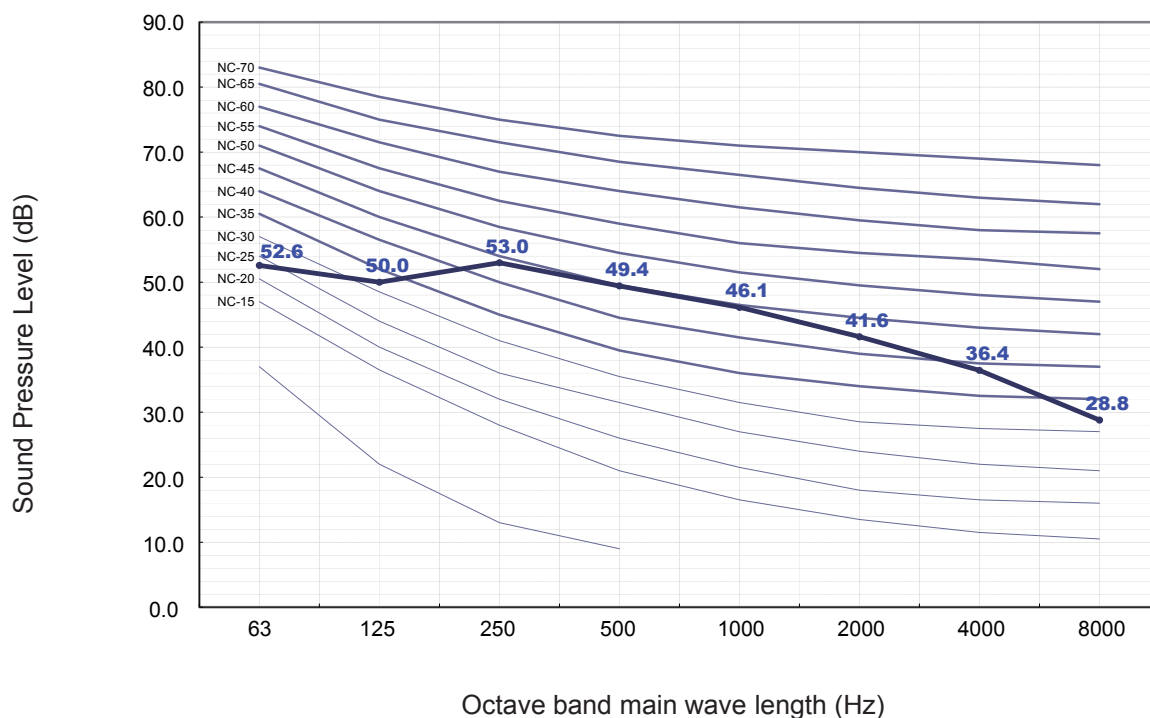
The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.3. RAC-CJ35WHAЕ

COOLING



HEATING



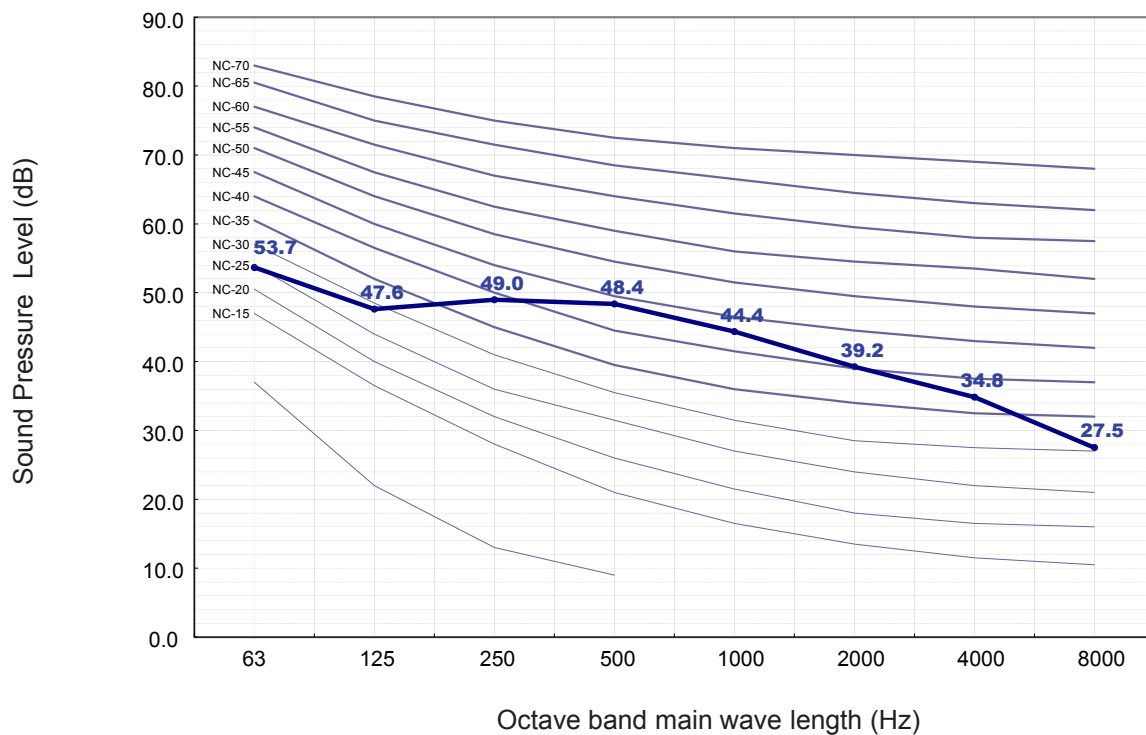
The Sound Pressure Level is based on the following conditions:

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

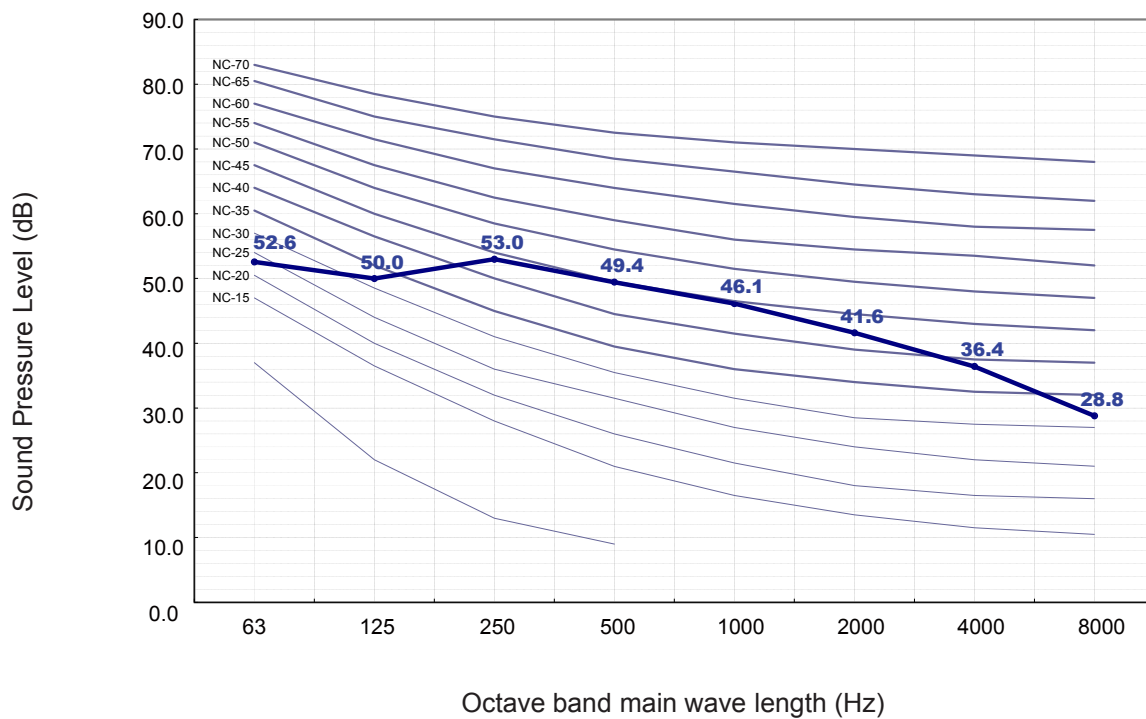
The above data was measured in an anechoic chamber. Please take into consideration reflected sound of your specific site

4.4. RAC-CJ50WHAЕ

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

5 WORKING RANGE

5.1. POWER SUPPLY

Working Voltage	198V ~ 269V
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

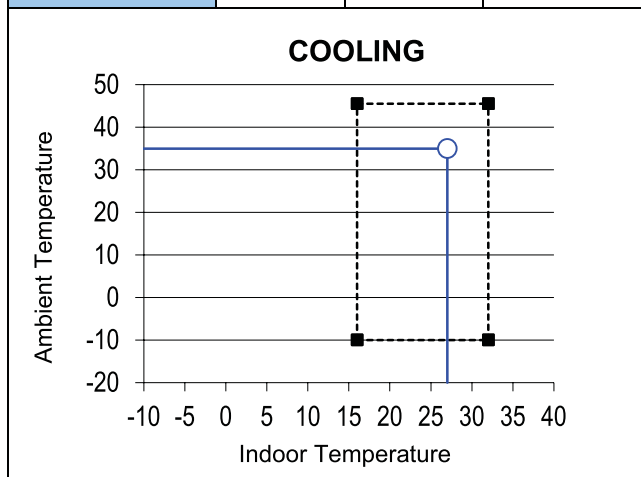
Applicable models:

RAC-CJ20WHAE
RAC-CJ25WHAE
RAC-CJ35WHAE
RAC-CJ50WHAE

The temperature range is indicated in the following table.

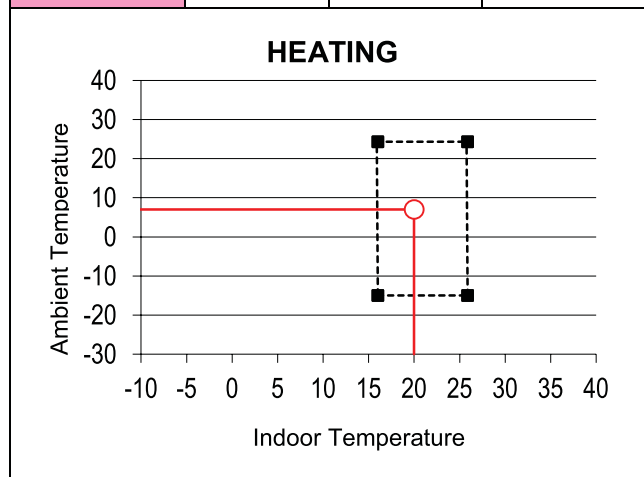
Cooling

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	24	7
indoor	16	26	20



6 ELECTRICAL DATA

6.1. INDOOR UNIT

Model	Unit Main Power		Indoor Fan Motor	
	VOL, PH, Hz	Fuse Rating (A)	RNC	IPT
RAK-CJ20PHAE	220 ~ 240, 1, 50	3.15	(C)0.03 (H)0.03	(C)10.8 (H)12.5
RAK-CJ25PHAE	220 ~ 240, 1, 50	3.15	(C)0.04 (H)0.06	(C)15.7 (H)18.8
RAK-CJ35PHAE	220 ~ 240, 1, 50	3.15	(C)0.06 (H)0.10	(C)19.3 (H)26.8
RAK-CJ50PHAE	220 ~ 240, 1, 50	3.15	(C)0.11 (H)0.16	(C)28.2(H)38.1

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		Applicable Current		Outdoor Fan Motor	
	VOL, PH, Hz	Fuse Rating (A)	STC	RNC	RNC	IPT
RAC-CJ20WHAE	220 ~ 240, 1, 50	15	(C)3.45 (H)3.66	(C)4.39 (H)4.22	(C)0.07 (H)0.08	(C)25.9 (H)26.3
RAC-CJ25WHAE	220 ~ 240, 1, 50	15	(C)3.80 (H)4.15	(C)5.61 (H)5.43	(C)0.12 (H)0.09	(C)35.8 (H)29.0
RAC-CJ35WHAE	220 ~ 240, 1, 50	15	(C)5.20 (H)5.46	(C)6.35 (H)6.49	(C)0.09 (H)0.10	(C)30.8 (H)31.0
RAC-CJ50WHAE	220 ~ 240, 1, 50	25	(C)8.08 (H)7.52	(C)8.43 (H)9.96	(C)0.12 (H)0.11	(C)32.6 (H)31.2

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:

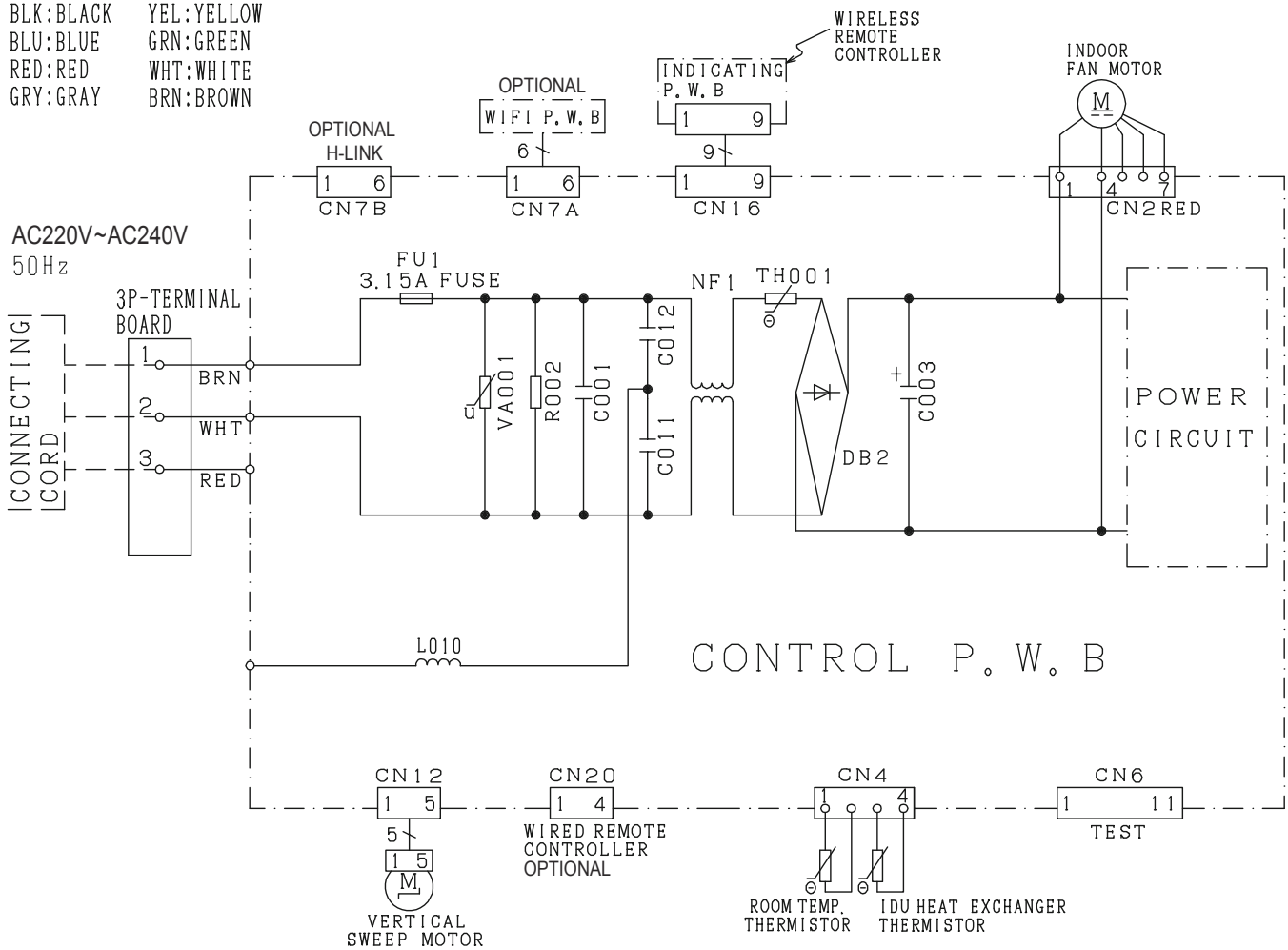
1. The above compressor data is based on 100% capacity combination of indoor units at the rated operating frequency
2. This data is based on the same conditions as the nominal heating and cooling capacities.
3. The compressor started by an inverter, resulting in extremely low starting current.

7 WIRING DIAGRAM

7.1. RAK-CJ20/25/35/50PHAE

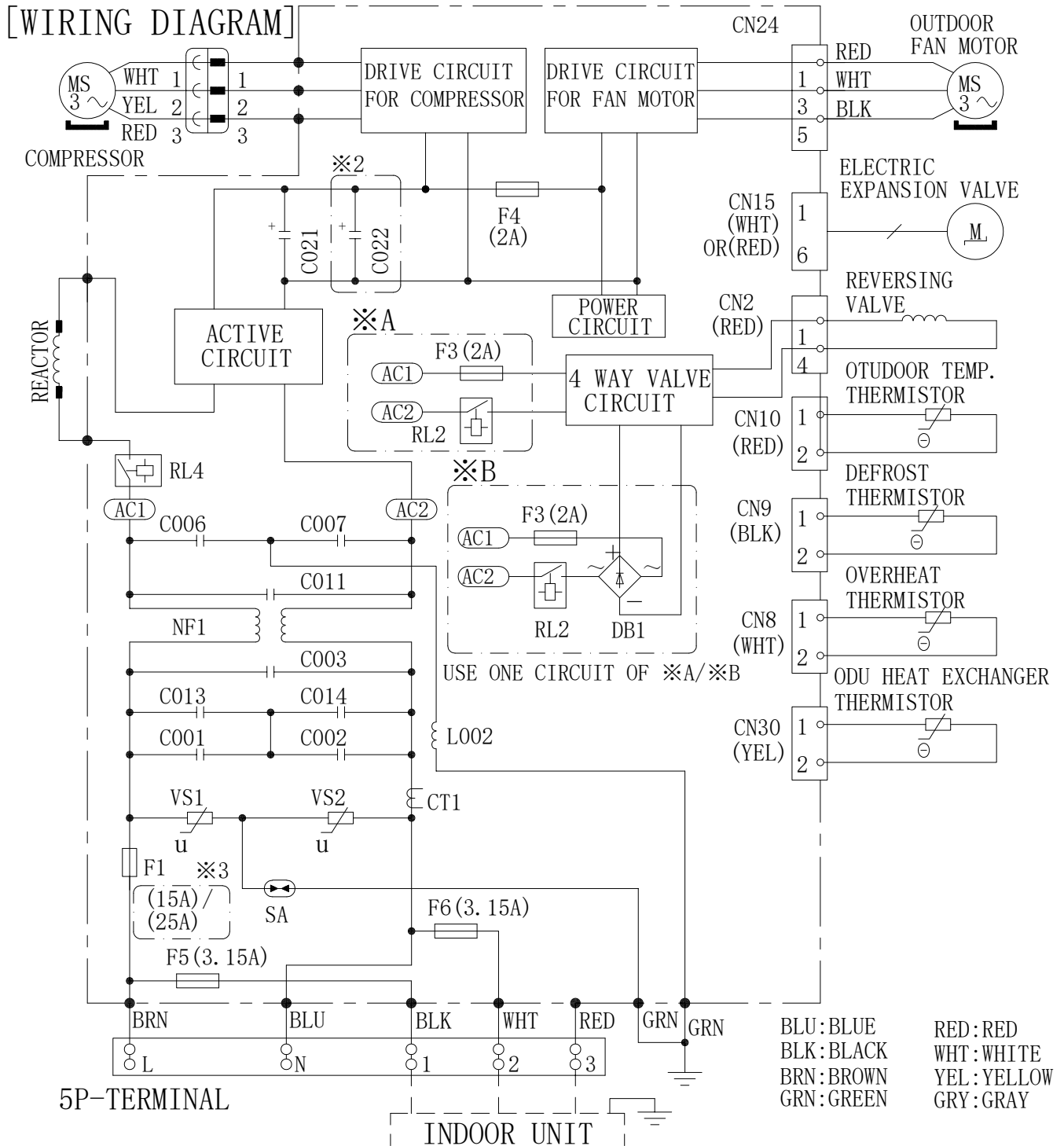
WIRING DIAGRAM

BLK:BLACK YEL:YELLOW
 BLU:BLUE GRN:GREEN
 RED:RED WHT:WHITE
 GRY:GRAY BRN:BROWN



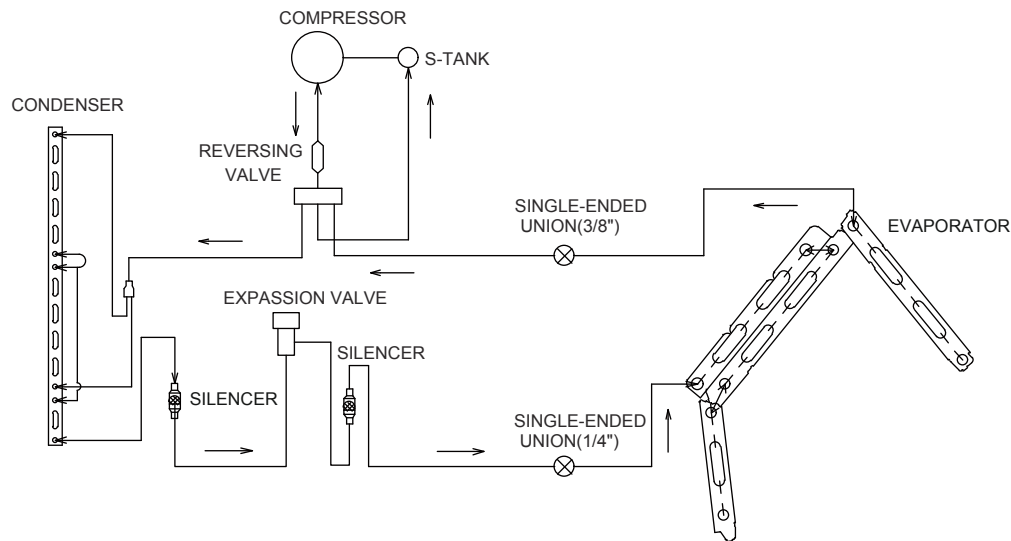
CAUTION! HIGH VOLTAGE	TURN OFF THE POWER SOURCE DURING THE SERVICE WORK.
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7.2. RAC-CJ20/25/35/50WHA-E

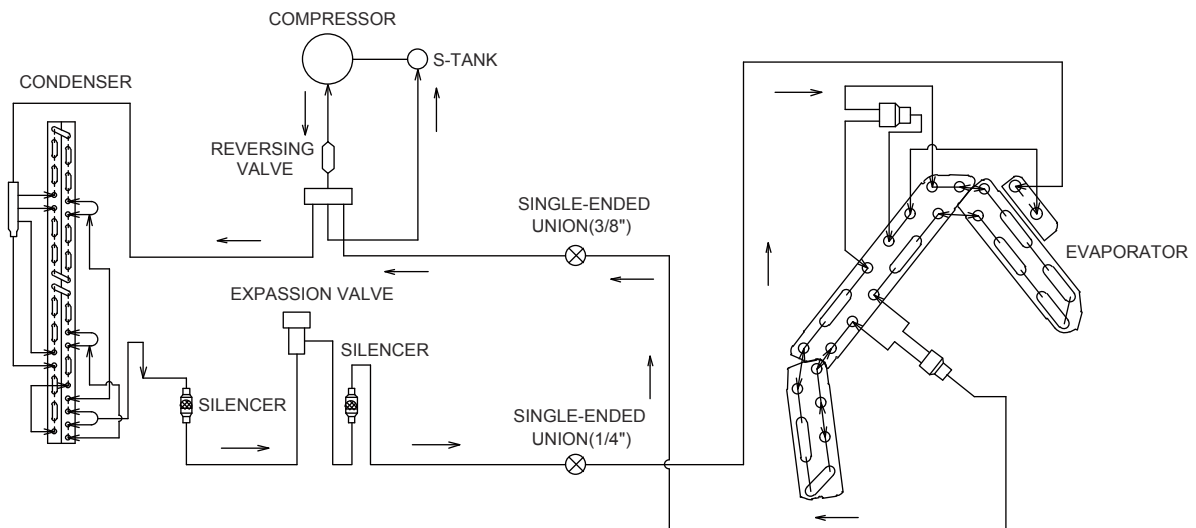


8 REFRIGERANT CYCLE

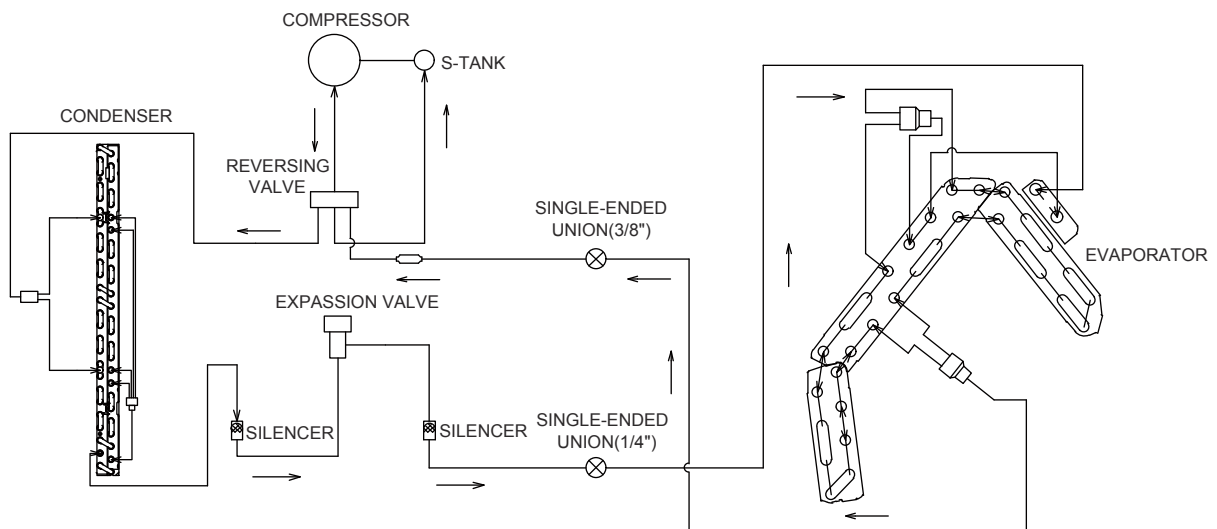
8.1. WALL TYPE: RAK-CJ20PHAE/RAC-CJ20WHAE, RAK-CJ25PHAE/RAC-CJ25WHAE



8.2. WALL TYPE: RAK-CJ35PHAE/RAC-CJ35WHAE

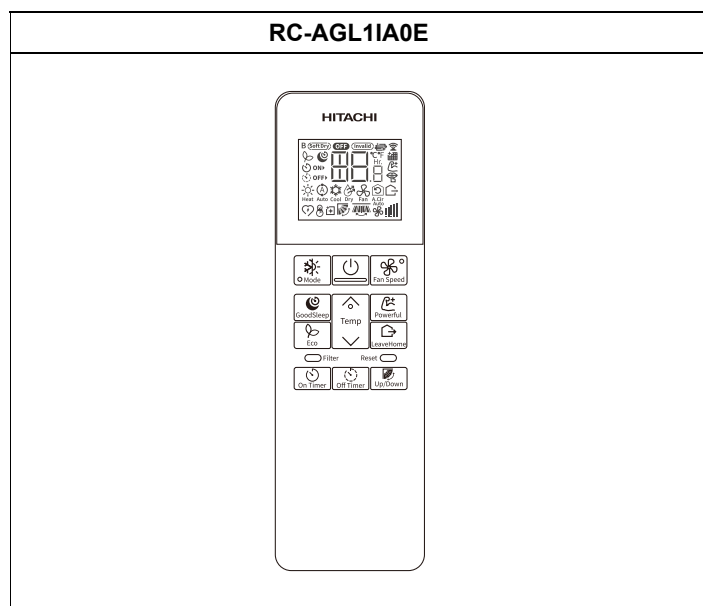


8.3. WALL TYPE: RAK-CJ50PHAE/RAC-CJ50WHAE



9 CONTROL AND FUNCTION

9.1. RC-AGL1IA0E



BUTTONS	FUNCTION
	Mode Selector Button Use this button to select the operation mode. Every time you press this button the mode will change from (Heat) → (Auto) → (Cool) → (Dry) → (Fan) cyclically.
	GoodSleep Button the unit shifts the room temperature and reduces the fan speed.
	Temperature Button Room temperature setting. Value will change quicker when keep pressing.
	Fan Speed Button Select the fan speed.
	On/Off Button Press this button to start operation. Press it again to stop operation.
	Powerful Button The air conditioner performs at maximum power.
	On Timer Button Select the turn ON time.
	Off Timer Button Select the turn OFF time.
	Eco Button Use this button to set the Eco mode.
	LeaveHome Button Prevent the room temperature from falling too much by setting temperature 10°C~16°C when no one is at home.
	Up/Down Button Control the angle of the horizontal air deflector.

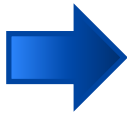
For more information, please refer to the operation manual.

9.2. How to set up from Service setting mode (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

Please note: if you wish to use the Service model, please set it up using GRAC H400 HHRC.

The Service function, which was set by double pressing of the HHRC in the current model. it will be done by HHRC in GRAC as shown as below.

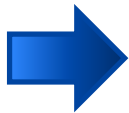
「On timer」 + 「Fan speed」 + 「Reset」
(Press three Key for 5 seconds to avoid access by User)



All icon ON for 2 Seconds



Layer1
(category selection):
Installation



Layer2
(function selection):
Card key



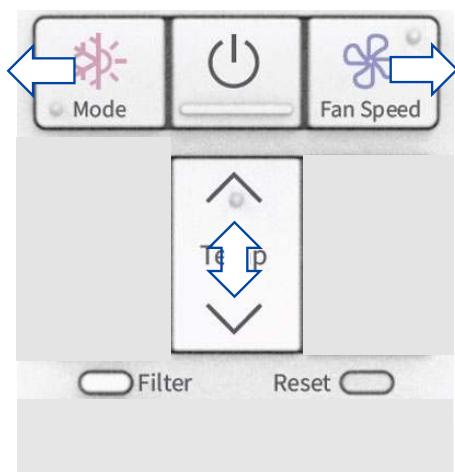
Layer3
(setting select):
Disable



Fan speed : Current Layer

※ If you don't do anything for 30 seconds, you will be out of the service setting mode.

9.3. How to operate the HHRC method (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

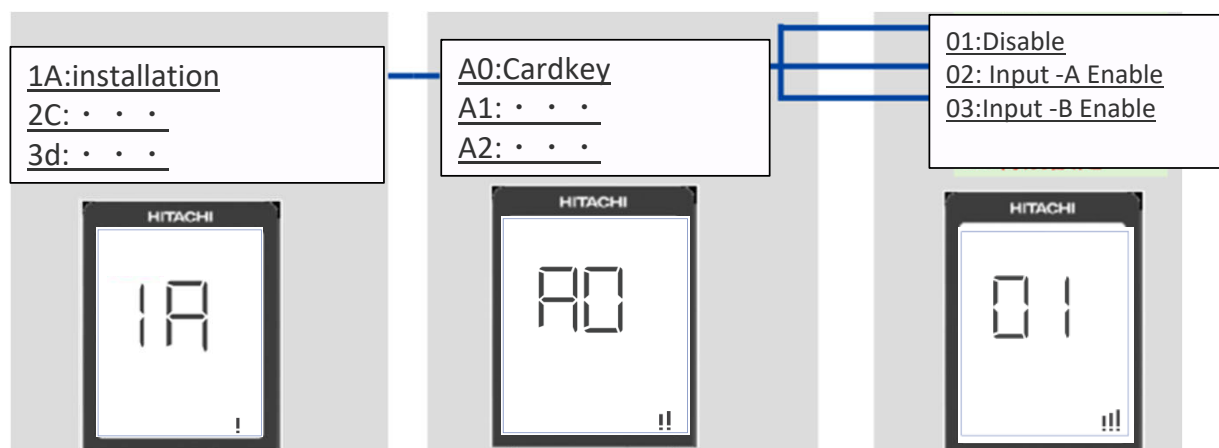


Temp△▽ : Selection (in the same layer)
 Mode : move to previous layer
 Fan Speed : Move to next layer
 ON/OFF : Decision/Send (at layer 3)
 : Current setting check(at layer 2)
 Filter: category initialization(at layer 1)
 Filter + ON/OFF: all category initialization(at layer 1)
 ※ To exit from this setting mode, you need to either not operate the HHRC panel for 30 seconds or press and hold the UP/Down key for 5 seconds.

Layer 1
(category selection)

Layer 2
(Function selection)

Layer 3
(Setting select)



9.4. How to Adjust filter sign Time (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

The Adjust filter sign Time 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.

Category	Function Name	Value	HHRC LCD display		
			Layer1 Category	Layer2 Function	Layer3 Value
Clean	Time for filter sign display	filter lamp lighting time:Adjustment -1(100h)	2C	C1	01
		filter lamp lighting time:Adjustment ±0(200h)			02
		filter lamp lighting time:Adjustment ±1(300h)			03
		filter lamp lighting time:Adjustment ±2(400h)			04
		reserve			05-99

Layer 1
(category selection)

Layer 2
(Function selection)

Layer 3
(Select settings)

1A: . . .	C0: Outdoor Frost wash	01: . . .
2C: . . .	C1: Time for filter sign display	02: . . .
3d: . . .	C2: IDU auto FrostWash period adjustment	03: . . .
		04: . . .



ON/OFF key at Layer 3
with showing "02" on LCD

【IDU response】
Buzzer sound: "pi"

Louver etc.: initializing operation

【note】
If receiving the order of "05"-"99", IDU
buzzer sounds as "pipi-"(rejecting sound).

9.5. Service setting item used for H200 model (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

Category	Function	Display on LCD Temperature 7 segment Layer Wise			Value setting meaning at Layer-3
		1	2	3	
Installation	Card Key	1A	A0	01	1 - Card Key Input - Disable
				02	2 - Contact A Enable
				03	3 - Contact B Enable
				04-99	4~99 : Reserved
	Heating/Cooling only mode select - (Operation Mode Lock)	1A	A1	01	1 - Normal Mode
				02	2 -Cooling Lock (Cool,Dry,A.circulator,Fan mode available)
				03	3 - Heating Lock (Heat and Fan mode available)
				04-99	4~99 : Reserved
	Auto restart switchover(Standard)	1A	A2	01	auto restart changeover disable
				02	auto restart by previous mode
				03-99	3~99 : Reserved
Clean	Time for filter sign display	2C	C1	01	filter lamp lighting time:Adjustment -1 (100hours)
				02	filter lamp lighting time:Adjustment ±0 (200hours)
				03	filter lamp lighting time:Adjustment +1 (300hours)
				04	filter lamp lighting time:Adjustment +2 (400hours)
				05-99	Reserved
Cycle Operation adjustment	Defrost selection Function	3d	E0	01	01 - Standard Region
				02	02- Cold Region
				03-99	Reserved
	Set temperature shift adjustment (Cooling)	3d	E1	01	Setting Temperature Shift Adjustment (-5°C/-10°F)
				02	Setting Temperature Shift Adjustment (-4°C/-8°F)
				03	Setting Temperature Shift Adjustment (-3°C/-6°F)
				04	Setting Temperature Shift Adjustment (-2°C/-4°F)
				05	Setting Temperature Shift Adjustment (-1°C/-2°F)
				06	Setting Temperature Shift Adjustment (±0°C/±0°F)
				07	Setting Temperature Shift Adjustment (+1°C/2°F)
				08	Setting Temperature Shift Adjustment (+2°C/4°F)
				09	Setting Temperature Shift Adjustment (+3°C/6°F)
				10	Setting Temperature Shift Adjustment (+4°C/8°F)
				11	Setting Temperature Shift Adjustment (+5°C/10°F)
				12-99	Reserved
	Set temperature shift adjustment (Heating)	3d	E2	01	Setting Temperature Shift Adjustment (-5°C/-10°F)
				02	Setting Temperature Shift Adjustment (-4°C/-8°F)
				03	Setting Temperature Shift Adjustment (-3°C/-6°F)
				04	Setting Temperature Shift Adjustment (-2°C/-4°F)
				05	Setting Temperature Shift Adjustment (-1°C/-2°F)
				06	Setting Temperature Shift Adjustment (±0°C/±0°F)
				07	Setting Temperature Shift Adjustment (+1°C/2°F)
				08	Setting Temperature Shift Adjustment (+2°C/4°F)
				09	Setting Temperature Shift Adjustment (+3°C/6°F)
				10	Setting Temperature Shift Adjustment (+4°C/8°F)
				11	Setting Temperature Shift Adjustment (+5°C/10°F)
				12-99	Reserved
	Indoor fan air speed when cooling thermostat is off	3d	E3	01	01 : standard
				02	02 : Cold Region
				03-99	Reserved
	Selection of indoor fan control during heating thermo-off	3d	E4	01	01 : Fan Control at the Time of Heating Thermo- Off "Pattern 1"
				02	02 : Fan Control at the Time of Heating Thermo- Off "Pattern 2"
				03	03 : Fan Control at the Time of Heating Thermo- Off "Pattern 3"
				04-99	Reserved

HHRC	Temperature Resolution change - 0.5°C--> 1°C	6H	P0	01	1 -0.5 °C Resolution 2-1 °C Resolution
	Fan Speed key sequence (Weaker to stronger , stronger to Weaker)	6H	P1	01	1 - Default (Auto-Silent-Low-Med-Hi-Hi2) 2- Reverse (Hi2-Hi-Med-Lo-Silent-Auto)
	Operation Mode : Auto	6H	P2	02	1-Disable Selection on HHRC by Mode key 2 - Enable Selection on HHRC by Mode Key
	Operation Mode : Cool	6H	P3	02	1-Disable Selection on HHRC by Mode key 2 - Enable Selection on HHRC by Mode Key
	Operation Mode : Dry	6H	P4	02	1-Disable Selection on HHRC by Mode key 2 - Enable Selection on HHRC by Mode Key
	Operation Mode : Fan	6H	P5	02	1-Disable Selection on HHRC by Mode key 2 - Enable Selection on HHRC by Mode Key
	Operation Mode : Heat	6H	P6	02	1-Disable Selection on HHRC by Mode key 2 - Enable Selection on HHRC by Mode Key
	Auto Fan speed : Enable / Disable	6H	P8	02	1 -Disable Selection on HHRC by Fan key 2 - Enable Selection on HHRC by Fan Key
	Fan Speed tapping control	6H	P9	01	1- Normal (Auto, Silent, Low, Med, Hi, H2) Selection on HHRC by Fan key 2- (Auto, Silent, Lo, Med, Hi) Selection on HHRC by Fan key
	Cooling Lower limit setting	6H	PC	16	(Lower set temp. start from 16 °C)
				17	(Lower set temp. start from 17 °C)
				18	(Lower set temp. start from 18 °C)
				19	(Lower set temp. start from 19 °C)
				20	(Lower set temp. start from 20 °C)
				21	(Lower set temp. start from 21 °C)
				22	(Lower set temp. start from 22 °C)
				23	(Lower set temp. start from 23 °C)
				24	(Lower set temp. start from 24 °C)
				25	(Lower set temp. start from 25 °C)
				26	(Lower set temp. start from 26 °C)
				27	(Lower set temp. start from 27 °C)
				28	(Lower set temp. start from 28 °C)
				29	(Lower set temp. start from 29 °C)
				30	(Lower set temp. start from 30 °C)
				31	(Lower set temp. start from 31 °C)
				32	(Lower set temp. start from 32 °C)
	Heating Upper limit setting	6H	Pd	32	(Upper set temp. start from 32 °C)
				31	(Upper set temp. start from 31 °C)
				30	(Upper set temp. start from 30 °C)
				29	(Upper set temp. start from 29 °C)
				28	(Upper set temp. start from 28 °C)
				27	(Upper set temp. start from 27 °C)
				26	(Upper set temp. start from 26 °C)
				25	(Upper set temp. start from 25 °C)
				24	(Upper set temp. start from 24 °C)
				23	(Upper set temp. start from 23 °C)
				22	(Upper set temp. start from 22 °C)
				21	(Upper set temp. start from 21 °C)
				20	(Upper set temp. start from 20 °C)
				19	(Upper set temp. start from 19 °C)
				18	(Upper set temp. start from 18 °C)
				17	(Upper set temp. start from 17 °C)
				16	(Upper set temp. start from 16 °C)
Diagnosis	Failure Indication(latest to last 5 times)	7J	t0	01	1: Failure Display History 1 (Latest of last Five)
				02	2: Failure Display History 2
				03	3: Failure Display History 3
				04	4: Failure Display History 4
				05	5: Failure Display History 5 (5 th Error)
				06-99	Reserved
	display ODU Self check (Failure Diagnosis Start)	7J	t1	01	1 : Failure Diagnosis Start
				02-99	Reserved
	Failure Memory Erase	7J	t2	01	1:Failure Memory Erase
				02-99	Reserved

9.6. Buzzer sounding for showing error contents(Applicable to H200 HHRC(RC-AGL1IA0E) to setting)

【Purpose】

Reduction of 'mis-communication about error contents" at contacting the service call center.

【Function】

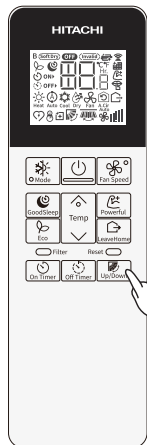
Add buzzer sounding for showing error contents during error, in addition to IDU LED action .

【How to use】

When IDU or ODU has failed, and the Timer lamp is blinking. Service engineer can know error contents from the buzzer through phone.

「Up/Down」

(Press this Key for 5 seconds)



In case of IDU failure



LED action



Timer lamp is blinking

Buzzer action



【note】

- for stopping buzzer, stop by On/Off button, or press Up/Down button for 5 seconds.

In case of ODU failure



LED action



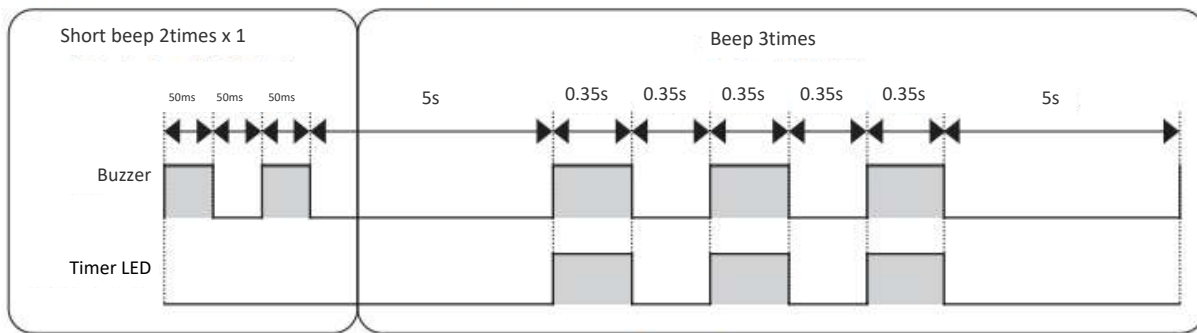
Operation lamp is blinking

Buzzer action



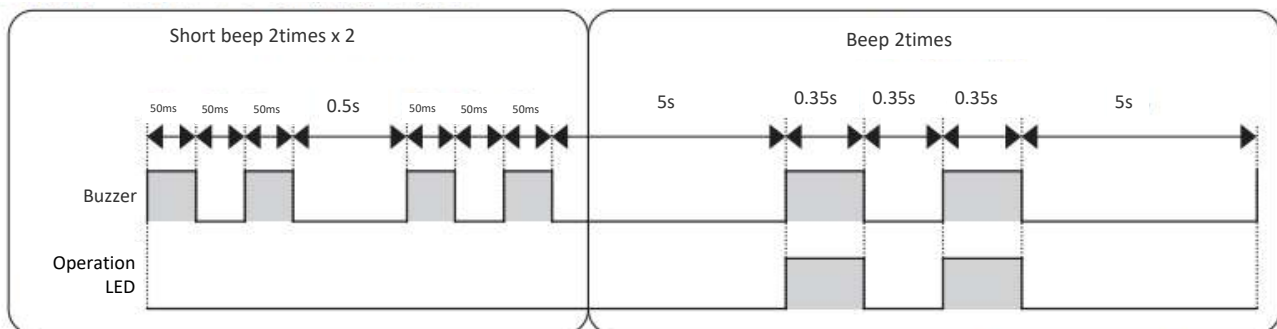
Sounding by same rhythm with LED

<IDU error example: timer LED will blink 3 times(interface defective(IDU) >



After "Short 2times x 1 beep", "3 times beep" will be repeated.

<ODU error example: operation LED will blink 2 times(peak current cut) >



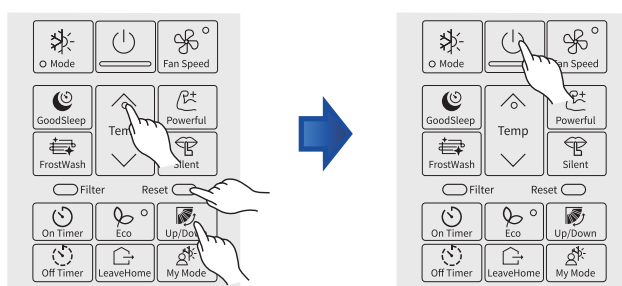
After "Short 2times x 2 beep", "2 times beep" will be repeated.

9.7. OTHER SETTING

▪ ID SELECTION (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

1. Press “Up/Down swing button” and “set. Temp. up button” and “reset button”, and release “reset button”.
2. Select from A or B by pressing “set.temp. button”.
3. Press “On/Off button” toward IDU.

(EEPROM in HHRC will keep the A or B information.)

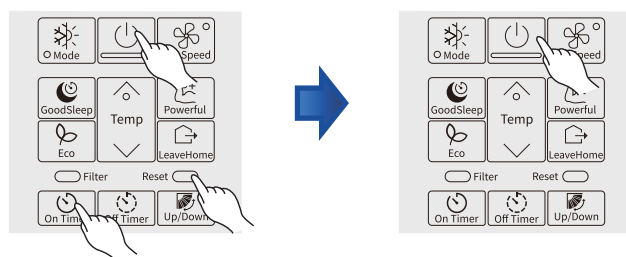


▪ DISPLAY MODE(Applicable to H200 HHRC(RC-AGL1IA0E) to setting)

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.

1. Press and holding “On Times button” and “On/Off button”, press “reset button” on the same time.
2. Release “reset button” only and make sure that the FAN speed icon  on LCD display.
3. Press “On/Off button” toward IDU.

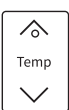
Then, the indoor unit will start to operate independently according the selected operation mode.

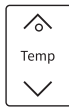


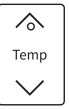
9.8. ERROR CODE INFORMATION

9.8.1. HOW TO DISPLAY ERROR CODE (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

1. Press three key ([On Timer] + [Fan Speed] + [Reset]) button on the remote control for 5 seconds to avoid access by User.

2. Press “” (Temperature) button of the remote control and select the “7J” option.

3. Press “” (Fan Speed) button of the remote control, then Press “” (Temperature) button select the “t0” option.

4. Press “” (Fan Speed) button of the remote control, then Press “” (Temperature) button select the “01” option.

5. Press “” (On/Off) button of the remote control, the fault information will be seen.

Function Name	Value	Layer1	Layer2	Layer3
		Category	Function	Value
Display self-diagnosis memory(※)	Display History 1 (Latest(newest) of last Five)	7J	t0	01
	Display History 2			02
	Display History 3			03
	Display History 4			04
	Display History 5			05

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

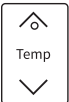
	TIMER LAMP BLINKING	LD301 BLINKING	CODE	MEANING
INDOOR	-	-	000 00	Normal
	1 time	-	001 00	REFRIGERANT CYCLE DEFECTIVE
	2 times	-	-	FORCED COOLING OPERATION
	3 times	9 times	003 00	INTERFACE DEFECTIVE(INDOOR)
	4 times	-	004 00	OUTDOOR UNIT DEFECTIVE
	9 times	-	009 00	INDOOR THERMISTOR DEFECTIVE
	10 times	-	010 00	ABNORMAL ROTATING NUMBERS OF DC FAN MOTOR
	12 times	9 times	012 00	INTERFACE DEFECTIVE(OUTDOOR)
	13 times	-	013 00	EEPROM IC DEFECTIVE
	21 times	-	021 00	INTERFACE DEFECTIVE (OTHER MACHINE CAUSE)
	25 times	-	025 00	CN7A/B CONNECTION DEFECTIVE

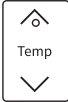
※THE LAMP WILL BLINK ONLY WHEN 25 TIMES FAILURE IS CALLED OUT BY HHRC.

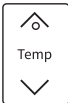
	OPERATION LAMP BLINKING	CODE	MEANING (THE FOLLOW DEFECTIVES IN OUTDOOR UNIT)
OUTDOOR	2 times	002 01	PEAK CURRENT CUT
	3 times	003 01	ABNORMAL LOW SPEED ROTATION
	4 times	004 01	SWITCHING FAILURE
	5 times	005 01	OVERLOAD LOWER LIMIT CUT
	6 times	006 01	COMPRESSOR TEMPERATURE RISE
	7 times	007 01	THERMISTOR ABNOMAL
	9 times	009 01	COMMUNICATION ERROR
	10 times	010 01	POWER SUPPLY VOLTAGE ERROR
	11 times	011 01	FAN STOP BY STRONG WIND
	12 times	012 01	FAN LOCK STOP
	13 times	013 01	EEPROM READING ERROR
	14 times	014 01	DC VOLTAGE ABNORMAL
	15 times	015 01	CIRCUIT ABNORMAL
	16 times	016 01	HIGH LOAD DURING STOP

9.8.2. HOW TO REMOVE ERROR CODE (Applicable to GRAC H400 HHRC(RC-AGU1EA0G) only)

1. Press three key ([On Timer] + [Fan Speed] + [Reset]) button on the remote control for 5 seconds to avoid access by User.

2. Press “ Temp ” (Temperature) button of the remote control and select the “7J” option.

3. Press “ Fan Speed ” (Fan Speed) button of the remote control, then Press “ Temp ” (Temperature) button select the “t2” option.

4. Press “ Fan Speed ” (Fan Speed) button of the remote control, then Press “ Temp ” (Temperature) button select the “01” option.

5. Press “ ” (On/Off) button of the remote control, and the error code will be removed.

10 OPTION LIST

10.1. H-LINK ADAPTOR – PSC 6RAD

10.1.1. 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.

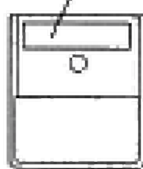
CAUTION:

- 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.

10.1.2. INSTALLATION WORK

■ Before installation

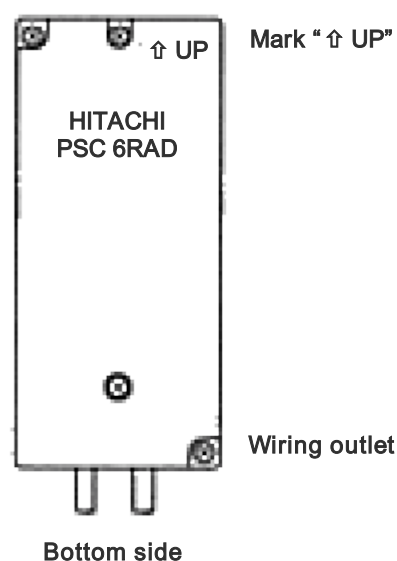
Check the contents and the number of the accessories in the packing.

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

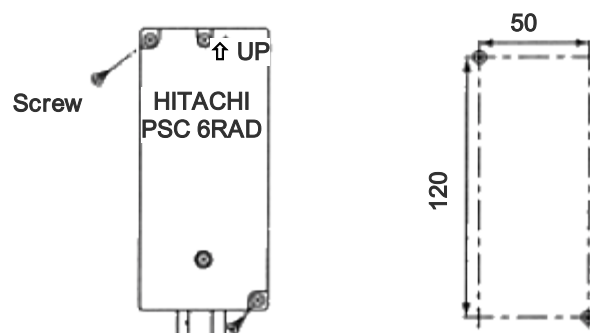
2 connectors for H-Link connection		
2 tapping screws for attaching to wall		φ3.0 x 10mm
2 screws for attaching to wooden wall		φ3.1 x 16mm

- 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.

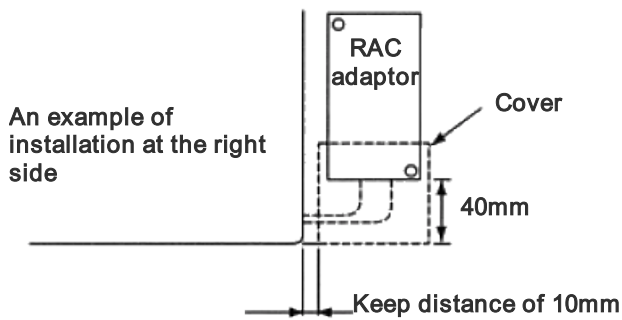
Upper side



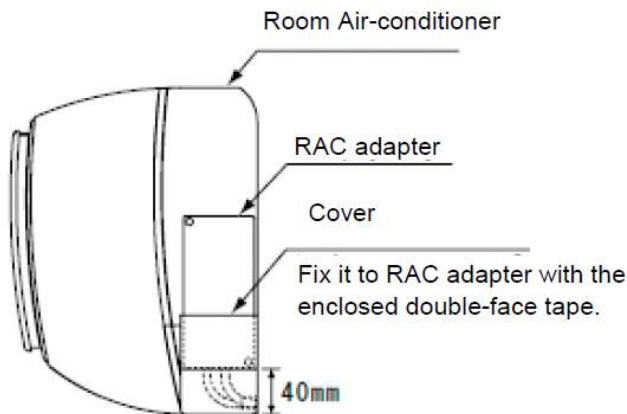
- 3) Installation procedure
 - a) When installing to the wall.
 - i) Fix the adaptor with 2 screws. Tapping screw is for metal surface, and other screw is for wooden surface.



- 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.
- 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)
 - Clean the surface to be installed with a dry cloth.

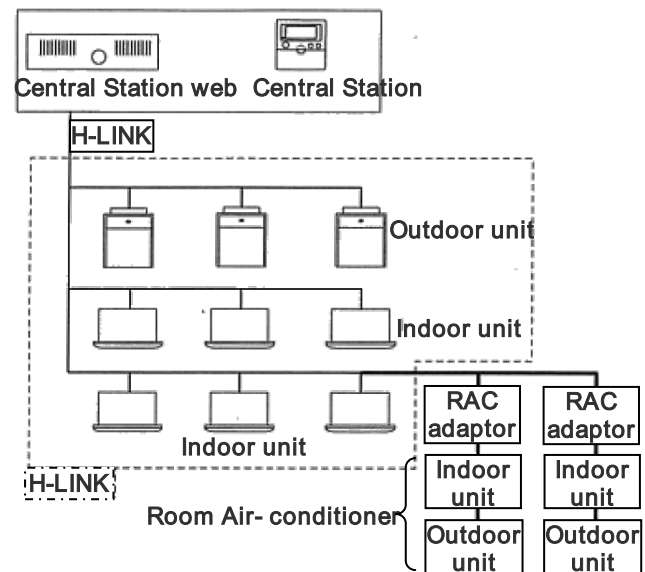


NOTE:

- 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.

10.1.3. 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
 - Remove the front cover of the room air-conditioner and the cover of electrical box.
 - The cable attached with the connector of the RAC adaptor shall be connected with the connector of indoor PCB

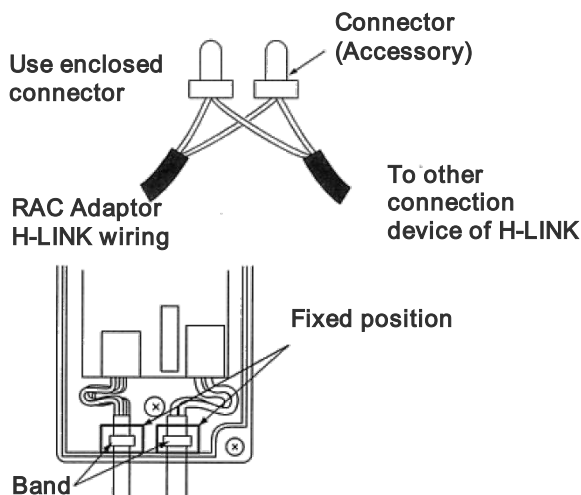
- iii) Install the electrical box cover paying attention not to clamp the cable. Read the installation manual of each room air-conditioner for confirming how to connect and how to assemble the cable of the RAC adaptor.

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

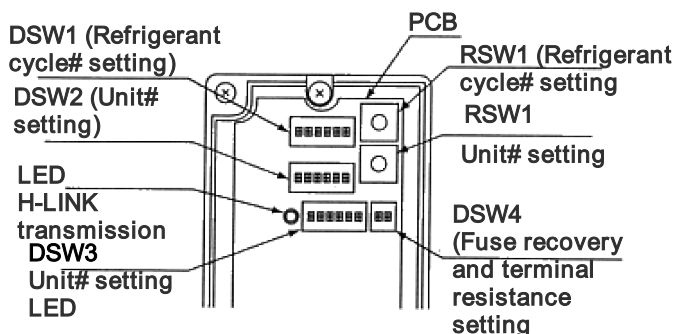
H-LINK transmission cable connecting to RAC adaptor shall be connected to H-LINK.

**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.

10.1.4. 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)

		Indoor Unit#							
		0	1	2	3	4	5	6	7
Refrigerant Unit#	0	●	○	○	○	○			
	1			●	○	○			
	2				●	○	○	○	
	3		●						
	4								

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)

PCB

Turn ON No.2 pin of DSW4

- 7) Terminating resistance is set in whole H-LINK system.
- 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.
 - 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.

PCB

Turn ON No.1 pin of DSW4

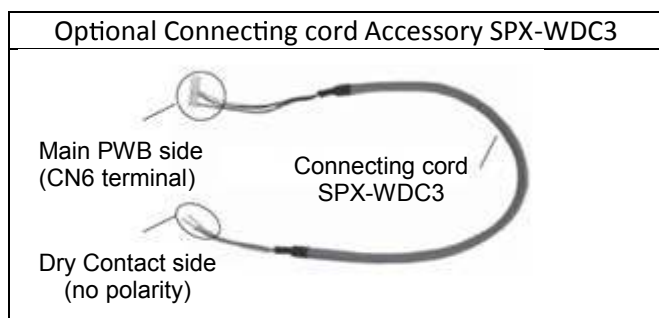
10.1.5. TEST RUN

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.

- 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.
- Registration
Confirm if the RAC adaptor connection is recognized.
- 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.

10.2. DRY CONTACT (SPX-WDC3) APPLICATION

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.



- Please decide A or B type of dry contact , you can use HHRC method and more details you can refer to Page 25.

Function Name	Value	Layer1	Layer2	Layer3
		Category	Function	Value
CardKey	Disable	1A	A0	01
	Card Key Input -A Enable			02
	Card Key Input -B Enable			03
	reserve			04-99

[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

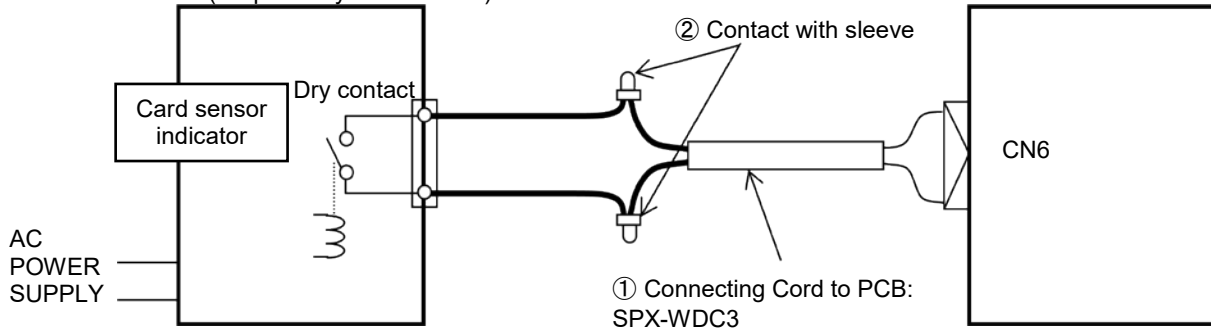
After all connection has been done as below diagram, ON the breaker and push ON button of wireless remote controller or wired remote controller to operate the air conditioner unit.

- 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)

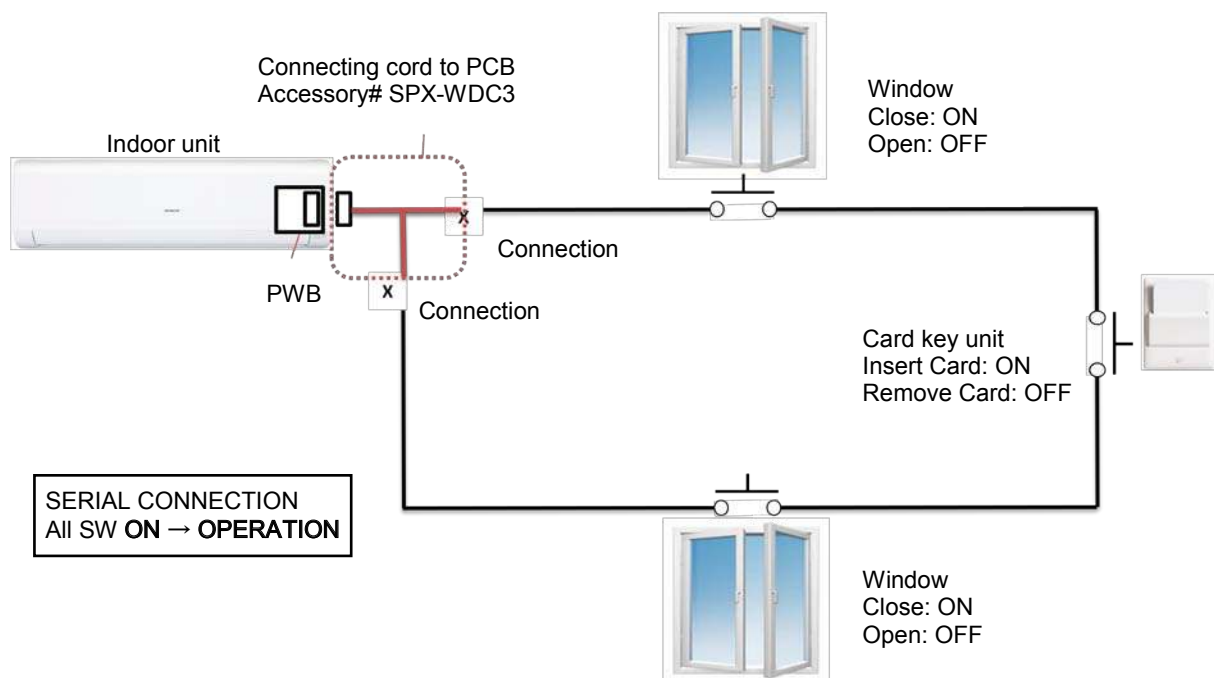
CARD KEY UNIT (Prepared by INSTALLER)

AIR CONDITIONER INDOOR PCB

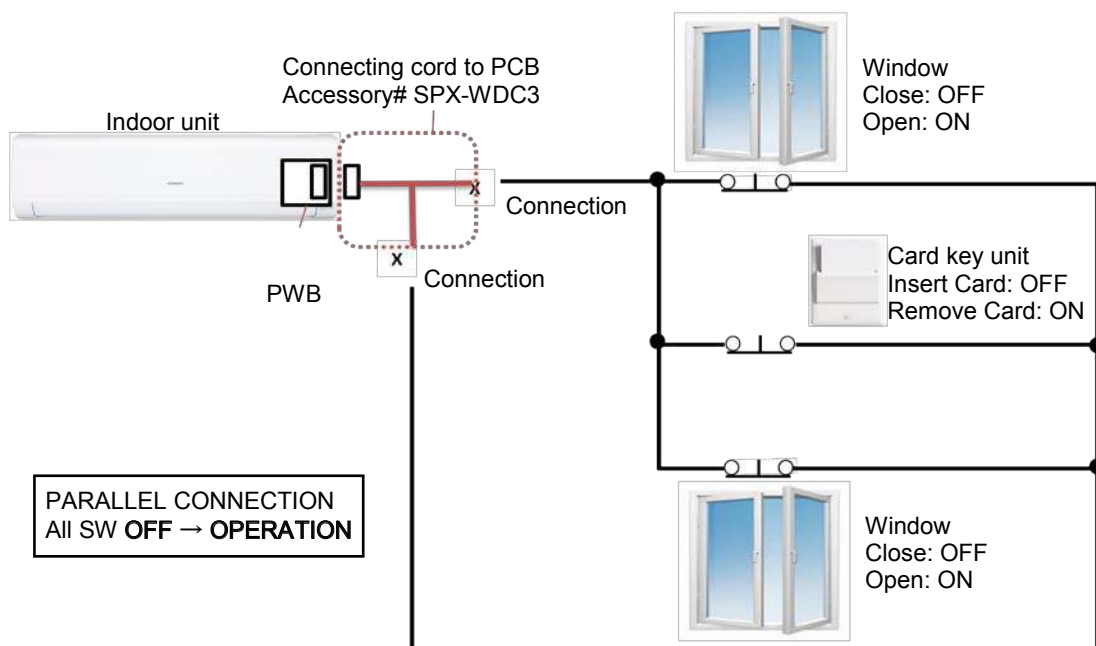


- CONNECTION EXAMPLE

i. HHRC for Dry Contact Type A



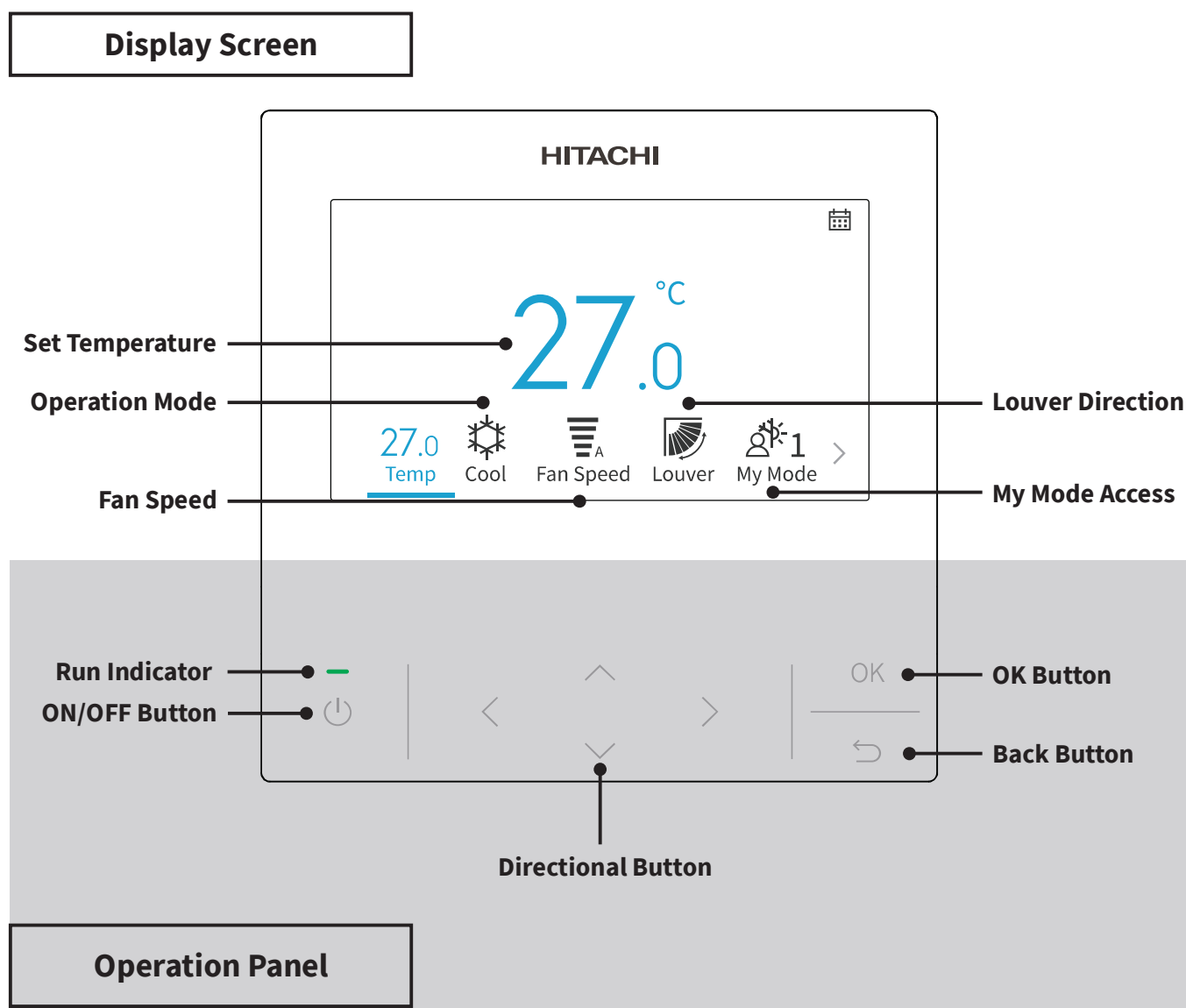
ii. HHRC for Dry Contact Type B



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

10.3 Wired remote control - SPX-URFG1

The figure below shows all the functions for reference. The actual display during operation is different.



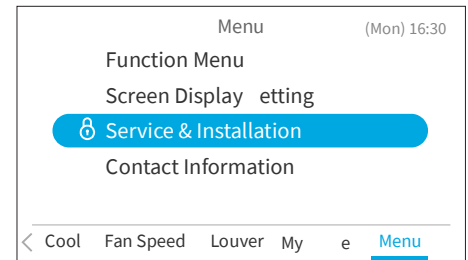
NOTES:

- If the screen is off or the backlight is dim, press any button to re-energise the screen.
- Make sure to press the buttons lightly with your fingertips.
- Do NOT press the buttons with any sharp objects as it may damage the button.

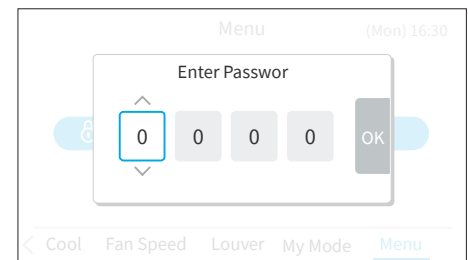
10.3.1 Service & Installation Screen

Service & Installation menu is protected by a password.

- Step1. Select "Service & Installation" on "Menu" screen and press "OK".



- Step2. Press "^", "v", "<", or ">" to input the password.
Press ">" to select "OK" and press "OK" to enter Service & Installation menu screen.



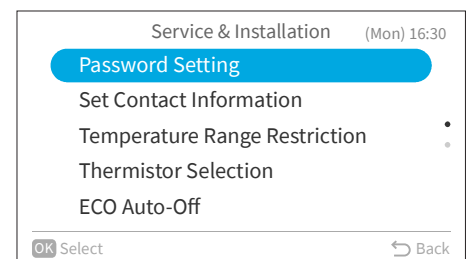
1. Password Setting

The default user password can be changed. If you forget the changed user password, a supervisor password can be used to reset the user password again. The supervisor password is "5567".
The password input effective time can be set also.

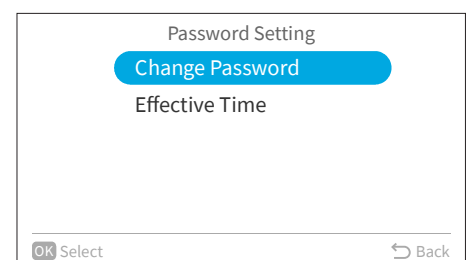
If the password input effective time has been set, then the password is required to be entered only once during the password effective time.

1. Change Password

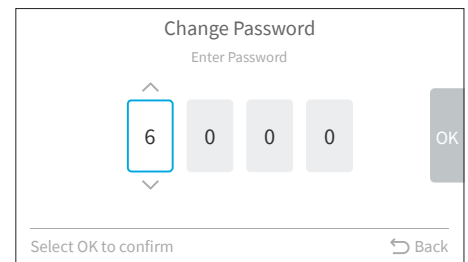
- Step1. Select "Password Setting" on Service & Installation screen and press "OK".



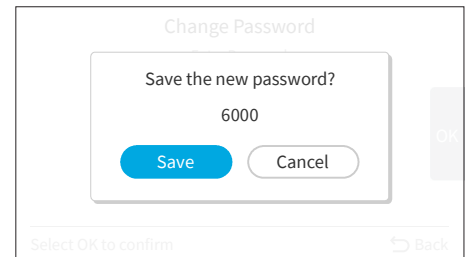
- Step2. Select "Change Password" and press "OK".



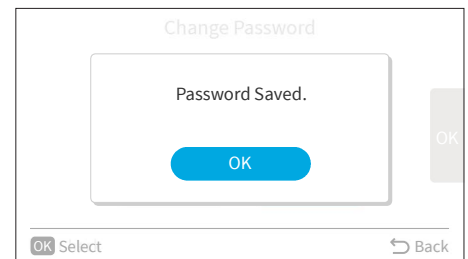
- Step3. Press "^", "v", "<", or ">" to set the password, select "OK" and press "OK"



- Step4. Press "<" or ">" to select "Save" and press "OK" to save password.

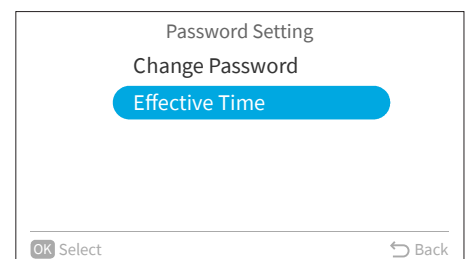


Press "OK", the new password is saved.

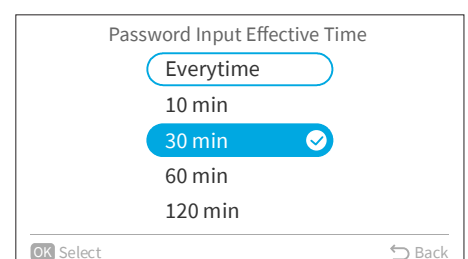


2. Set Password Input Effective Time

- Step1. Select "Password Setting" on the Service & Installation screen and press "OK".
- Step2. Select "Effective Time" and press "OK".



- Step3. Press "^" or "v" to select the setting item and press "OK" to confirm the setting. The item changes as follows:
 "Everytime" ↔ "10 min" ↔ "30 min" ↔ "60 min" ↔ "120 min".
 Press "↵" and it returns to Step3.



NOTES:

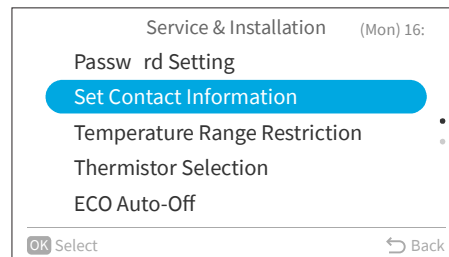
- In order to enhance the security protection, please be sure to change the default password.
- If you enter the wrong password more than 5 times, you will not be able to enter the password within 1 minute.
- The default password is "0000", and the supervisor code is "5567".
- If you forget the password, use the supervisor code to change the password.
- The supervisor code can't be changed.

2. Set Contact Information

Register a service contact (service address and service telephone number are recommended).

1. Register Contact Information

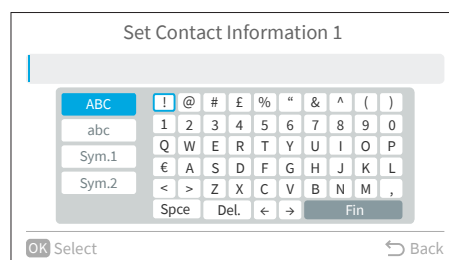
Step1. Select "Set Contact Information" on the Service & Installation screen and press "OK".



Step2. "Set Contact Information1" screen is displayed. Press "<" to move cursor to font type. Press "^" or "v" to select the font type.

*Each time you want to change the font type, press "<" to move the cursor back to font type.

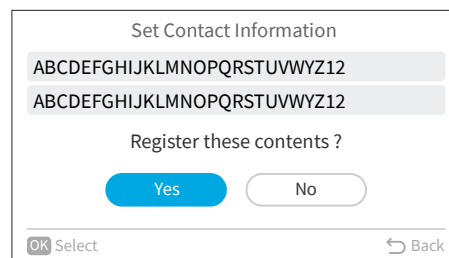
Step3. Press ">" to move cursor to the keypad. Press "^", "v", "<", or ">" to select the font and press "OK" to register it. (Up to 60 characters can be used for each contact information.)



Step4. After all the characters have been set, select "Fin" and press "OK".

Step5. "Set Contact Information2" screen is displayed, repeat Step2, Step3 and Step4.

Step6. Select "Yes" and press "OK" to confirm the setting and Step1 is displayed. If "No" is selected, the screen returns to Step2.

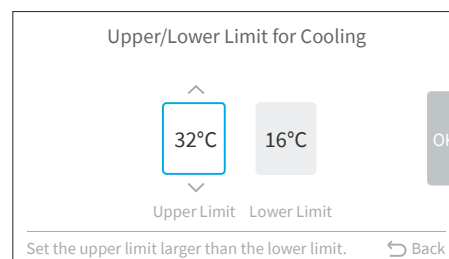
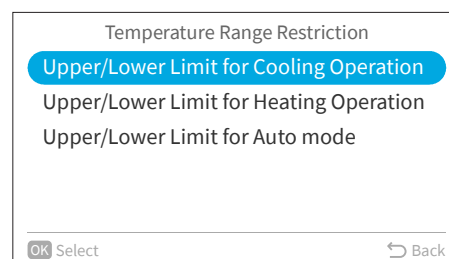
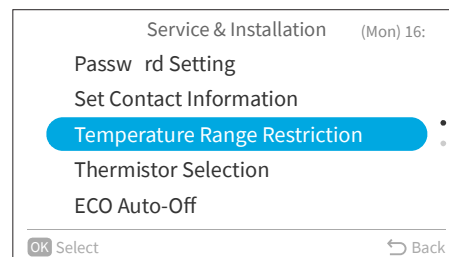


3. Temperature Range Restriction

The temperature range can be set by the wired remote controller.

1. Set Temperature Range

- Step1. Select "Temperature Range Restriction" on the Service & Installation screen and press "OK".
- Step2. Select "Upper/Lower Limit for Cooling Operation"/"Upper/Lower Limit for Heating Operation"/ "Upper/Lower Limit for Auto mode" and press "OK"
- Step3. Press "<", ">" to select the setting limit, then press "^", "v" to change the temperature value.
- Step4. After value setting, select "OK" and press "OK". Press "↶" to return to Step2.



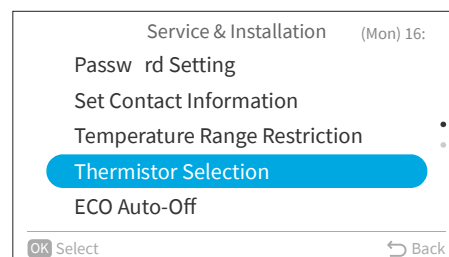
NOTE:

- Please make sure that the upper limit value is equal to or greater than the lower limit value.

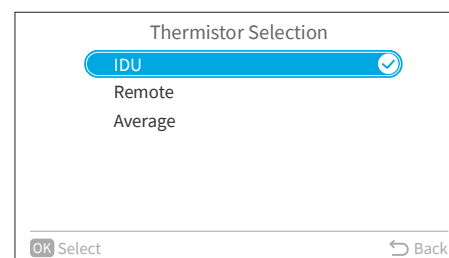
4. Thermistor Selection

This function is to select wired remote controller thermistor or indoor unit thermistor as the room temperature.

- Step1. Select "Thermistor Selection" on the Service & Installation screen and press "OK".



- Step2. Select the desired item and press "OK".



NOTE:

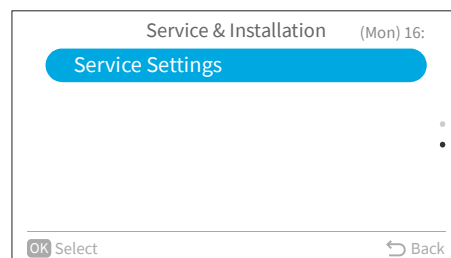
- If one of indoor unit or wired remote controller thermistor is broken, the other normal thermistor is selected automatically.

10.3.2 Service Settings

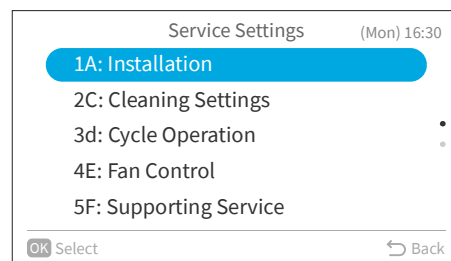
- The service setting items displayed in list depend on indoor unit model.
- When no operation for 2 hours on Service settings or sub settings screen, it returns to Home screen.
- When the air conditioner is turned on, service setting is disabled.
- For more information of service settings, please refer to service manual of the wired remote controller.

1. 1A: Installation

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".

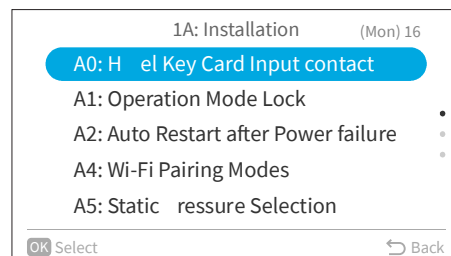


Step2. Select "1A: Installation" and press "OK"

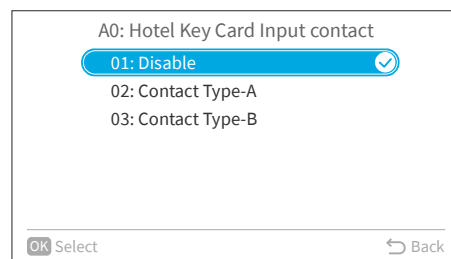


1.1 A0: Hotel Key Card Input contact

Step1. Select "A0: Hotel Key Card Input contact" and press "OK"

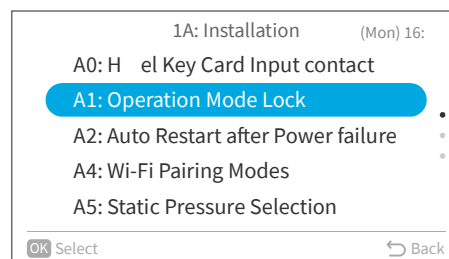


Step2. Press "^" or "v" to select the desired item and press "OK".

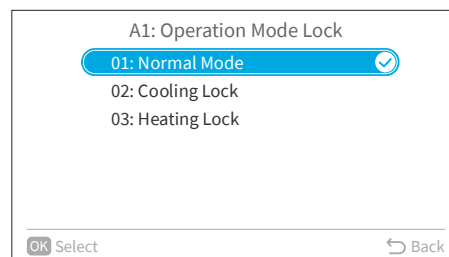


1.2 A1: Operation Mode Lock

Step1. Select "A1: Operation Mode Lock" and press "OK".



Step2. Press "^" or "v" to select the desired item and press "OK".

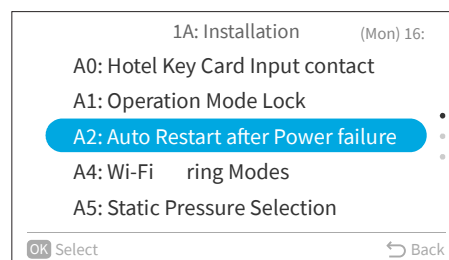


NOTE:

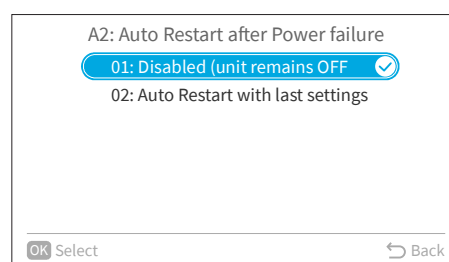
- The operation lock setting will remain unchanged after the unit is turned off.

1.3 A2: Auto Restart after Power failure

Step1. Select "A2: Auto Restart after Power failure" and press "OK".

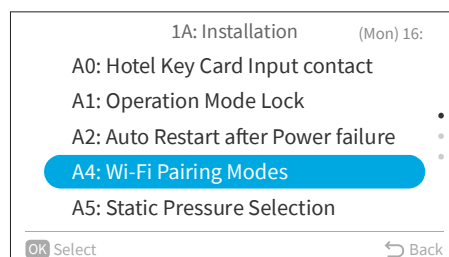


Step2. Press "^" or "v" to select the desired item and press "OK".

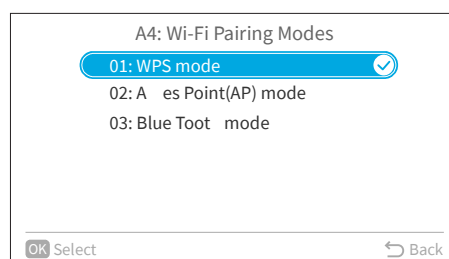


1.4 A4: Wi-Fi Pairing Mode

Step1. Select "A4: Wi-Fi Pairing Mode" and press "OK".

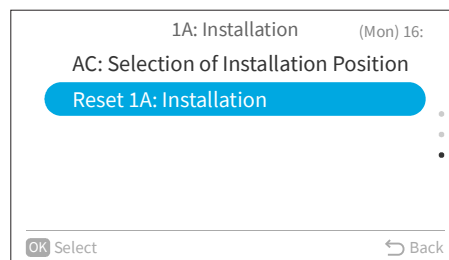


Step2. Press "^" or "v" to select the desired item and press "OK".

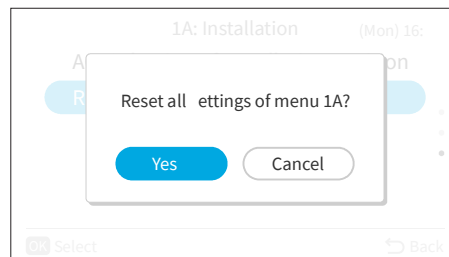


1.5 Reset 1A: Installation

Step1. Select "Reset 1A: Installation" and press "OK".

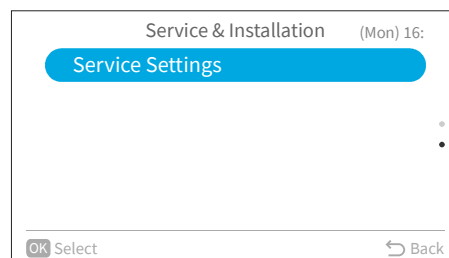


Step2. Select "Yes" and press "OK" to reset all settings of menu 1A.

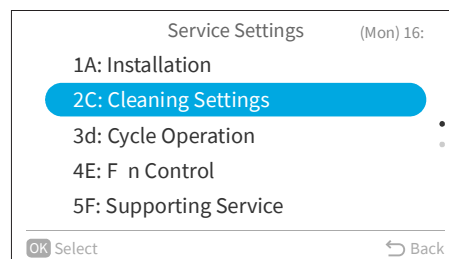


2. 2C: Cleaning Settings

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".

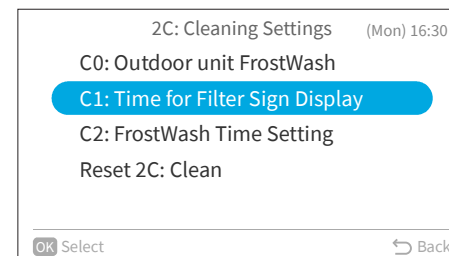


Step2. Select "2C: Cleaning Settings" and press "OK".

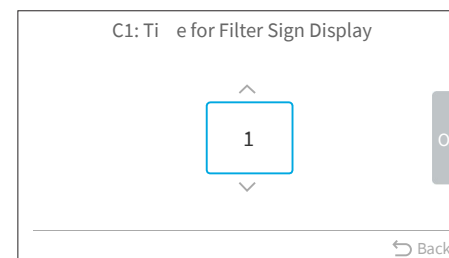


2.1 C1: Time for Filter Sign Display

Step1. Select "C1: Time for Filter Sign Display" and press "OK".

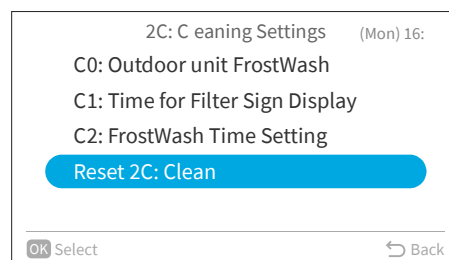


Step2. Press "^" or "v" to change the temperature, then press ">" to select "OK" and press "OK".

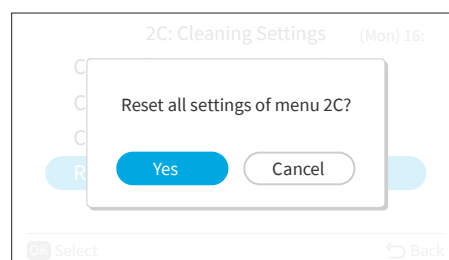


2.2 Reset 2C: Clean

Step1. Select "Reset 2C: Clean" and press "OK".

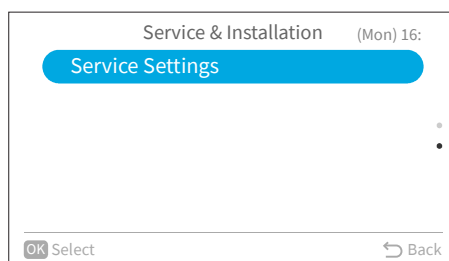


Step2. Select "Yes" and press "OK" to reset all settings of menu 2C.

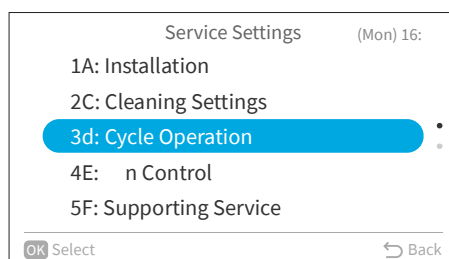


3. 3d: Cycle Operation

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".

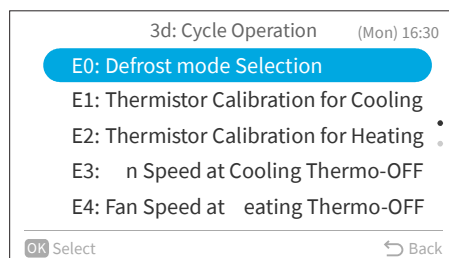


Step2. Select "3d: Cycle Operation" and press "OK".

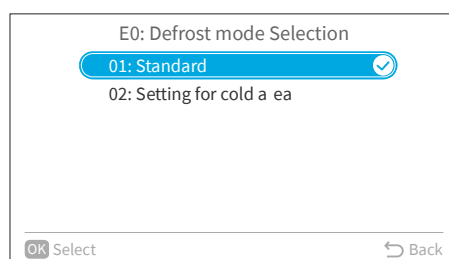


3.1 E0: Defrost Selection Function

Step1. Select "E0: Defrost Selection Function" and press "OK".

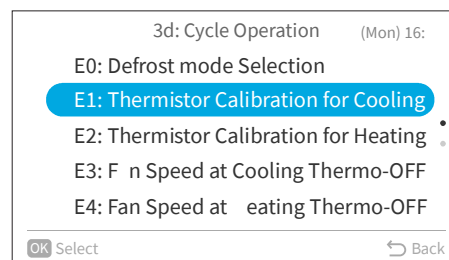


Step2. Press "^" or "v" to select the desired item and press "OK".

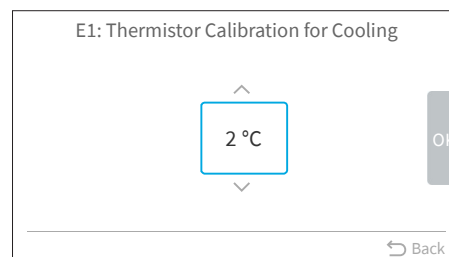


3.2 E1: Thermistor Calibration for Cooling

Step1. Select "E1: Thermistor Calibration for Cooling" and press "OK".

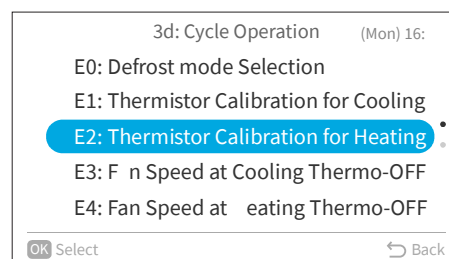


Step2. Press "^" or "v" to change the temperature, then press ">" to select "OK" and press "OK".

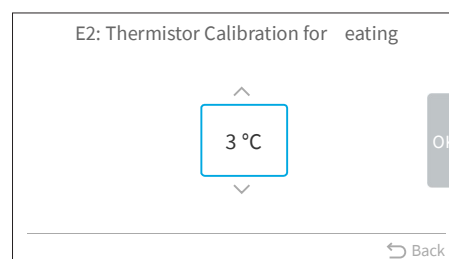


3.3 E2: Thermistor Calibration for Heating

Step1. Select "E2: Thermistor Calibration for Heating" and press "OK".

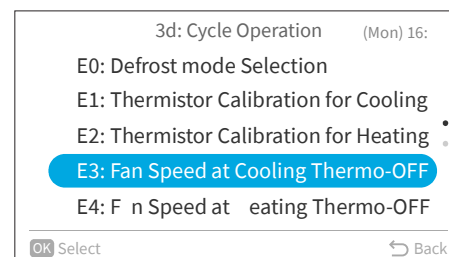


Step2. Press "^" or "v" to change the temperature, then press ">" to select "OK" and press "OK".

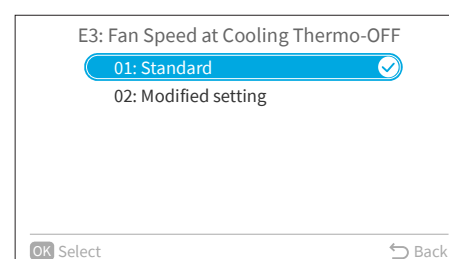


3.4 E3: Fan Speed at Cooling Thermo-OFF

Step1. Select "E3: Fan Speed at Cooling Thermo-OFF" and press "OK".

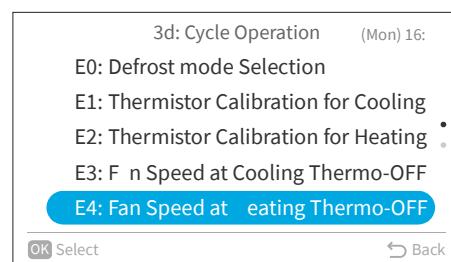


Step2. Press "^" or "v" to select the desired item and press "OK".

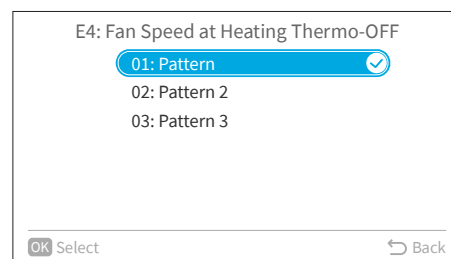


3.5 E4: Fan Speed at Heating Thermo-OFF

Step1. Select "E4: Fan Speed at Heating Thermo-OFF" and press "OK".

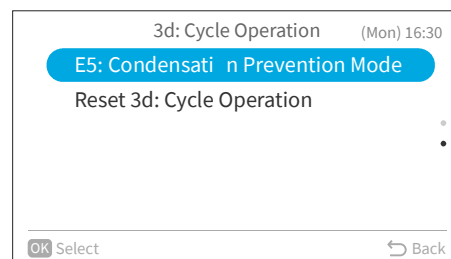


Step2. Press "^" or "v" to select the desired item and press "OK".

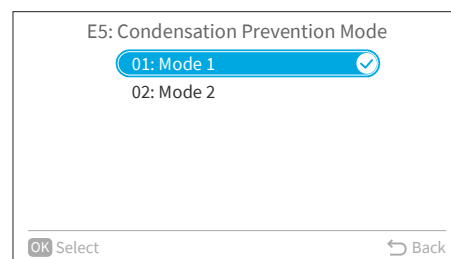


3.6 E5: Condensation Prevention Mode

Step1. Select "E5: Condensation Prevention Mode" and press "OK".

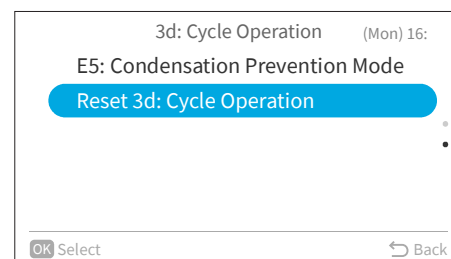


Step2. Press "^" or "v" to select the desired item and press "OK".

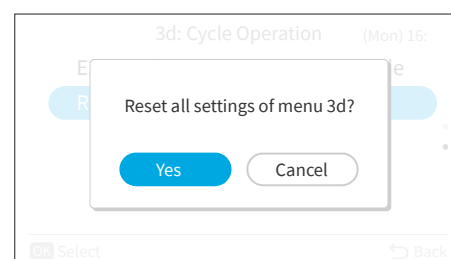


3.7 Reset 3d: Cycle Operation

Step1. Select "Reset 3d: Cycle Operation" and press "OK".

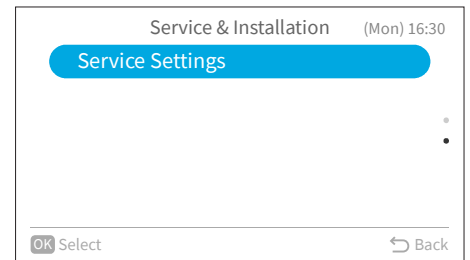


Step2. Select "Yes" and press "OK" to reset all settings of menu 3d.

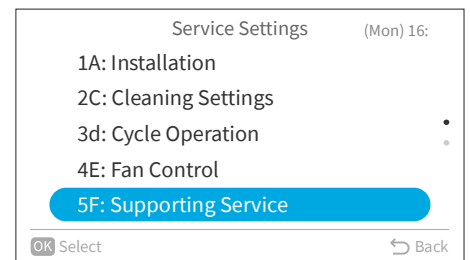


4. 5F: Supporting Service

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".

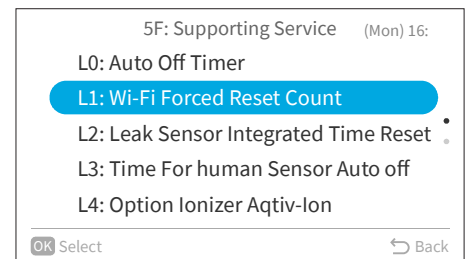


Step2. elect "5F: Supporting Service" and press "OK".

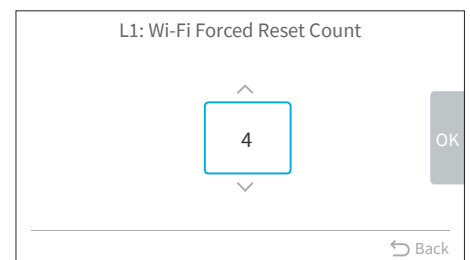


4.1 L1: Wi-Fi Forced Reset Count

Step1. Select "L1: Wi-Fi Forced Reset Count" and press "OK".



Step2. Press "^" or "v" to change the reset count, then press ">" to select "OK" and press "OK".

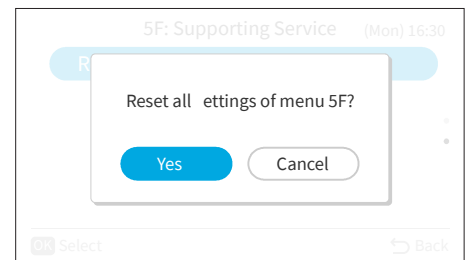


4.2 Reset 5F: Supporting Service

Step1. select "Reset 5F: Supporting Service" and press "OK"

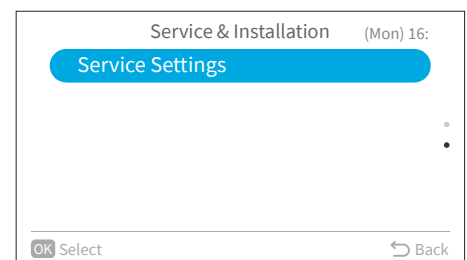


Step2. select "Yes" and press "OK" to reset all settings of menu 5F.

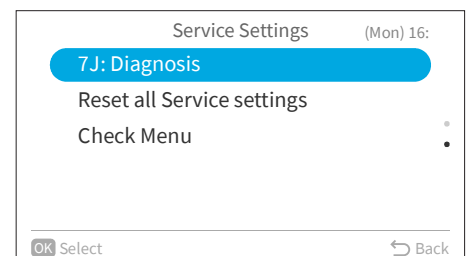


5. 7J: Diagnosis

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".

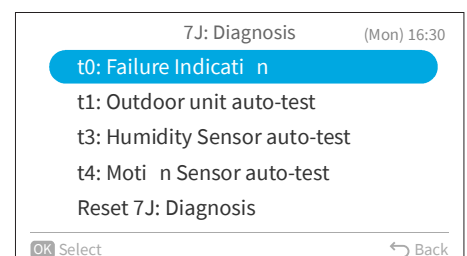


Step2. Select "7J: Diagnosis" and press "OK".

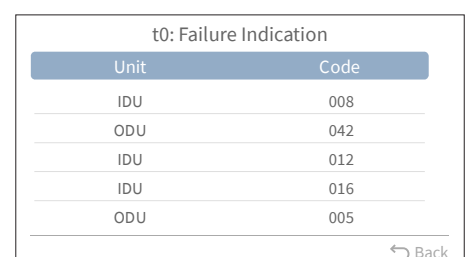


5.1 t0: Failure Indication

Step1. Select "t0: Failure Indication" and press "OK"



Step2. The failure indication screen is shown.

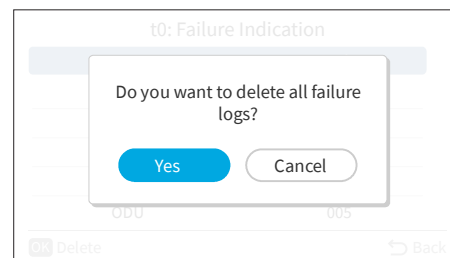


NOTE:

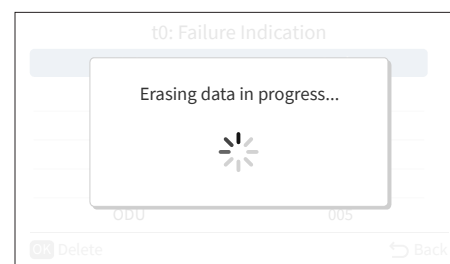
- Second time to go to t0 after indoor unit and wired remote controller is powered on: Failure indication screen with a "Delete".

t0: Failure Indication	
Unit	Code
IDU	008
ODU	042
IDU	012
IDU	016
ODU	005
OK Delete Back	

Step3. Press "OK" and a reminder shows up. Select "Yes" and press "OK" to delete all failure logs.

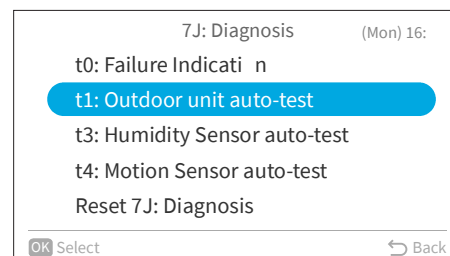


Step4. After completing erasing, it turns to home screen.

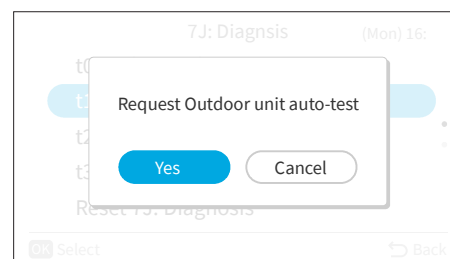


5.2 t1: Outdoor unit auto-test

Step1. Select "t1: Outdoor unit auto-test" and press "OK".

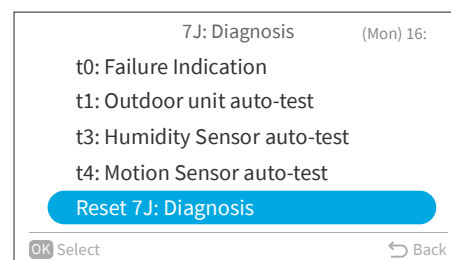


Step2. Select "Yes" and press "OK" to request outdoor unit auto-test.

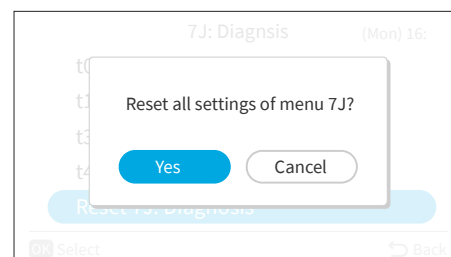


5.3 Reset 7J: Diagnosis

Step1. Select "Reset 7J: Diagnosis" and press "OK"

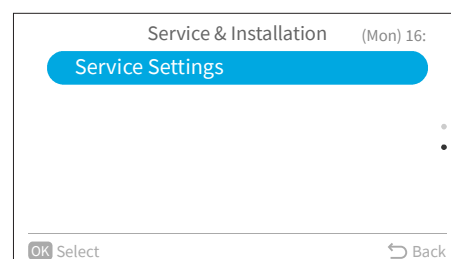


Step2. Select "Yes" and press "OK" to reset all settings of menu 7J.

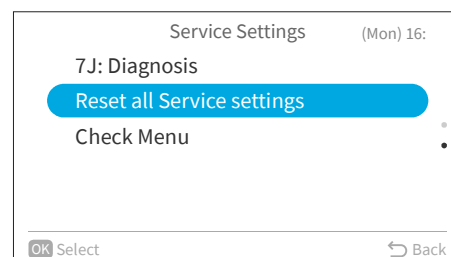


5.4 Reset All Service Settings

Step1. Select "Service Settings" on "Service & Installation" screen and press "OK".



Step2. Select "Reset all Service settings" and press "OK".



HITACHI

TC-ERP-Model

INDOOR

RAK-CJ20PHAE
RAK-CJ25PHAE
RAK-CJ35PHAE
RAK-CJ50PHAE

OUTDOOR

RAC-CJ20WHAE
RAC-CJ25WHAE
RAC-CJ35WHAE
RAC-CJ50WHAE