TECHNICAL CATALOGUE

HITACHI

Cooling & Heating

RAC-XJ25WHAE
RAC-XJ35WHAE



RAK-XJ25RHAE
RAK-XJ35RHAE
RAK-XJ50RHAE



RAC-XJ50WHAE



HITACHI

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1 SPECIFICATIONS

1.1. WALL TYPE (RAK-XJ25RHAE/XJ35RHAE/XJ50RHAE)

INDOOR	Unit	RAK-XJ25RHAE	RAK-XJ35RHAE	RAK-XJ50RHAE
Nominal capacity adjustable		no	no	no
Nominal Cooling capacity (min - max)	kW	2.50 (0.90 - 3.10)	3.50 (0.90- 4.00)	5.00 (1.90- 5.20)
Cooling sensible capacity	kW	2.50	3.20	3.70
Nominal Heating capacity (min - max)		3.20 (0.90- 4.40)	4.00 (0.90- 5.00)	6.00 (2.20- 7.30)
Noise level cooling (sound pressure) (SL / L / M / H / SH)	dB(A)	21/27/33/40/43	21/29/34/41/44	25/31/38/43/46
Noise level heating (sound pressure) (SL / L / M / H / SH)	dB(A)	21/28/34/40/44	21/29/35/41/45	25/31/39/44/48
Noise level (sound power)	dB(A)	57	58	60
Air flow cooling mode (SL / L / M / H / SH)	m^3/h	230/300/420/590/680	230/325/485/650/720	260/350/510/680/740
Air flow heating mode (SL / L / M / H / SH)	m^3/h	290/390/530/700/780	290/430/605/750/860	350/470/665/820/940
Fan Motor	W	30	30	30
Dehumidification	l/h	1.4	1.6	2
Dimensions (H x W x D)	mm	294 x 950 x 230	294 x 950 x 230	294 x 950 x 230
Weight	kg	11	11	11
Colour		Star White (ZYY8001)	Star White (ZYY8001)	Star White (ZYY8001)
Condensate Drain	mm	φ 16	φ 16	φ 16
Running current (C/H)	A	1.09-4.35/1.09-5.22	1.09-6.09/1.09-6.96	2.17-9.13/2.17-11.74
Power supply		220-240V	220-240V	220-240V
Cable section (interconnection)	mm^2	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" / 1/2"
Drain diameter (ext)	mm	φ 16	φ 16	φ 16
Remote control (standard/optional)		RC-BGH1FA0G/ SPX-URFG	RC-BGH1FA0G/ SPX-URFG	RC-BGH1FA0G/ SPX-URFG
Filter				
ACL Filter Optional		Anti Virus Filter	Anti Virus Filter	Anti Virus Filter
ACL part name		SPX-VSZ1	SPX-VSZ1	SPX-VSZ1
Pre-filter(Standard/Optional)		STAINLESS/-	STAINLESS/-	STAINLESS/-

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 (RAC-XJ25WHAE/XJ35WHAE/XJ50WHAE)

OUTDOOR		Unit	RAC-XJ25WHAE	RAC-XJ35WHAE	RAC-XJ50WHAE
Nominal Cooling capacity (min - max)		kW	2.50 (0.90 - 3.10)	3.50 (0.90- 4.00)	5.00 (1.90- 5.20)
Nominal Heating capacity (min - max)		kW	3.20 (0.90- 4.40)	4.00 (0.90- 5.00)	6.00 (2.20- 7.30)
Nominal cooling power input (min - max)		kW	0.481 (0.25 - 1.00)	0.814 (0.25 - 1.40)	1.429 (0.50 - 2.10)
Nominal heating power input (min - max)		kW	0.593(0.25 - 1.20)	0.800(0.25 - 1.60)	1.463(0.50 - 2.70)
EER / COP			5.20/5.40	4.30/5.00	3.50/4.10
SEER / SCOP			9.50/5.20	9.00/5.20	7.60/4.70
Energy class (SEER/SCOP)			A+++/A+++	A+++/A+++	A++/A++
Noise level cooling (sound pressure)		dB(A)	47	48	51
Noise level heating (sound pressure)		dB(A)	48	50	51
Noise level (sound power)		dB(A)	61	62	65
Air flow (Cooling / Heating)		m3/h	1860 / 1620	1920 / 1620	2160 / 2160
Dimensions (H x W x D)		mm	600x792x299	600x792x299	736× 800× 350
Weight		kg	35.8	35.8	51
Colour (Munsell Code)			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
Recommended fuse size		A	15	15	25
Starting current(C/H)		A	2.86/3.59	4.54/4.52	6.51/6.67
Running current (C/H)		A	1.09-4.35/1.09-5.22	1.09-6.09/1.09-6.96	2.17-9.13/2.17-11.74
Cable section (power)		mm²	1.50x 2+EARTH	1.50x 2+EARTH	2.50x 2+EARTH
Cable section (Interconnection)		mm²	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" / 1/2"
Minimum piping length		m	3	3	3
Maximum piping length / height difference		m	20 / 10	20 / 10	30/10
Current quantity of refrigerant / Chargeless		kg	1.030	1.030	1.300
Chargeless length / Additional refrigerant charge		m / g/m	20/-	20/-	30/-
Working range (cooling / heating)		°C	-10℃—46℃/-20℃—21℃	-10℃—46℃/-20℃—21℃	-10℃—46℃/-20℃—21℃
Refrigerant			R32	R32	R32
Condenser Fan			Propeller Fan	Propeller Fan	Propeller Fan
Compressor	Type		ROTARY	ROTARY	2 Cylinder Rotary
	Oil Charge	mL	320±20	320±20	480±20
	Oil Type		ACS-68R or equivalent	ACS-68R or equivalent	ACS-68R or equivalent
	Coil resistance	Ω	2.53 at 20℃	2.53 at 20℃	1.354 at 20℃
	Quantity		1	1	1

NOTE:

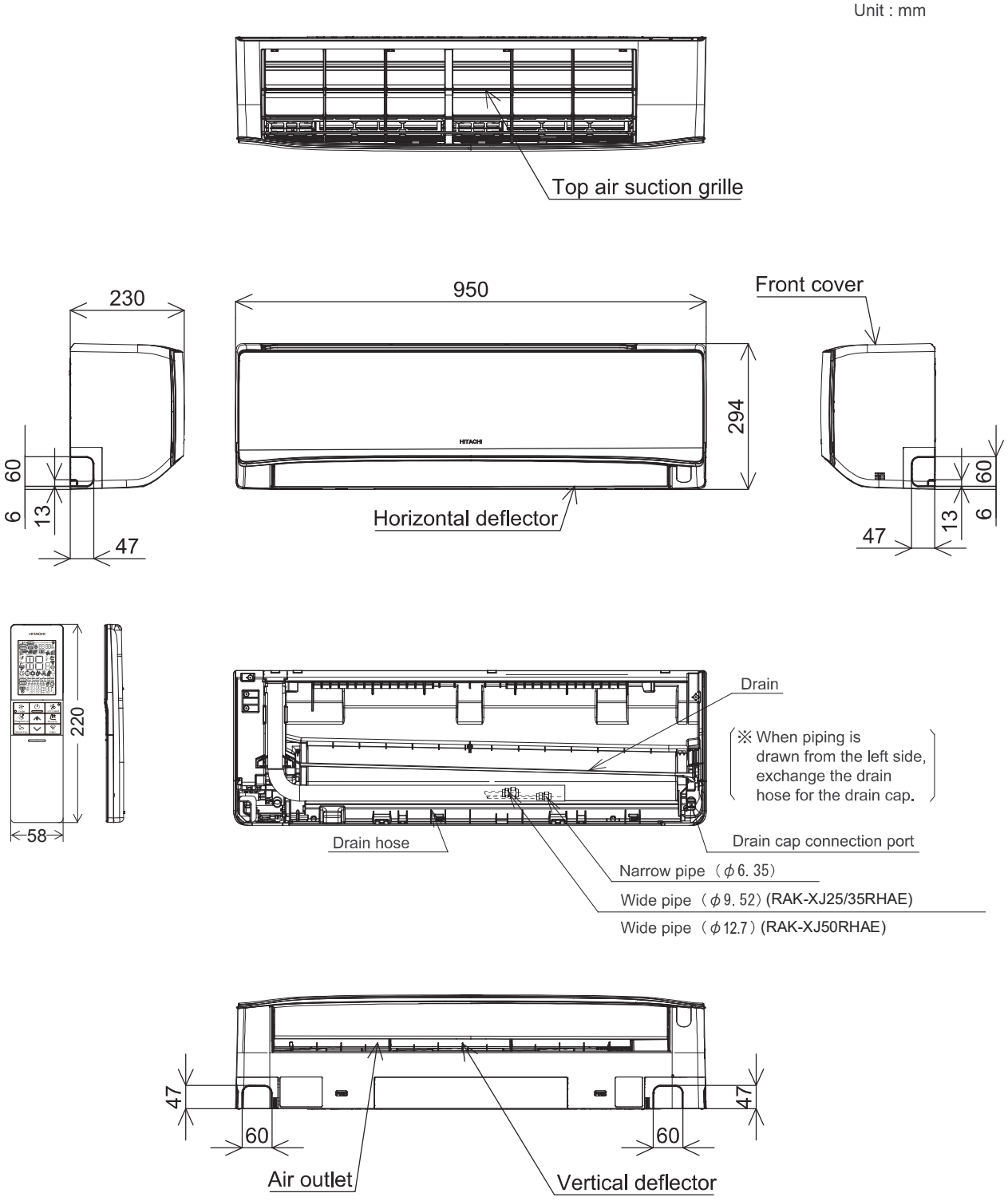
1. *The Sound Pressure Level is based on the following conditions:*
   - *1 meter from the unit front surface and 1 meter from floor level*

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

2 DIMENSIONAL DATA

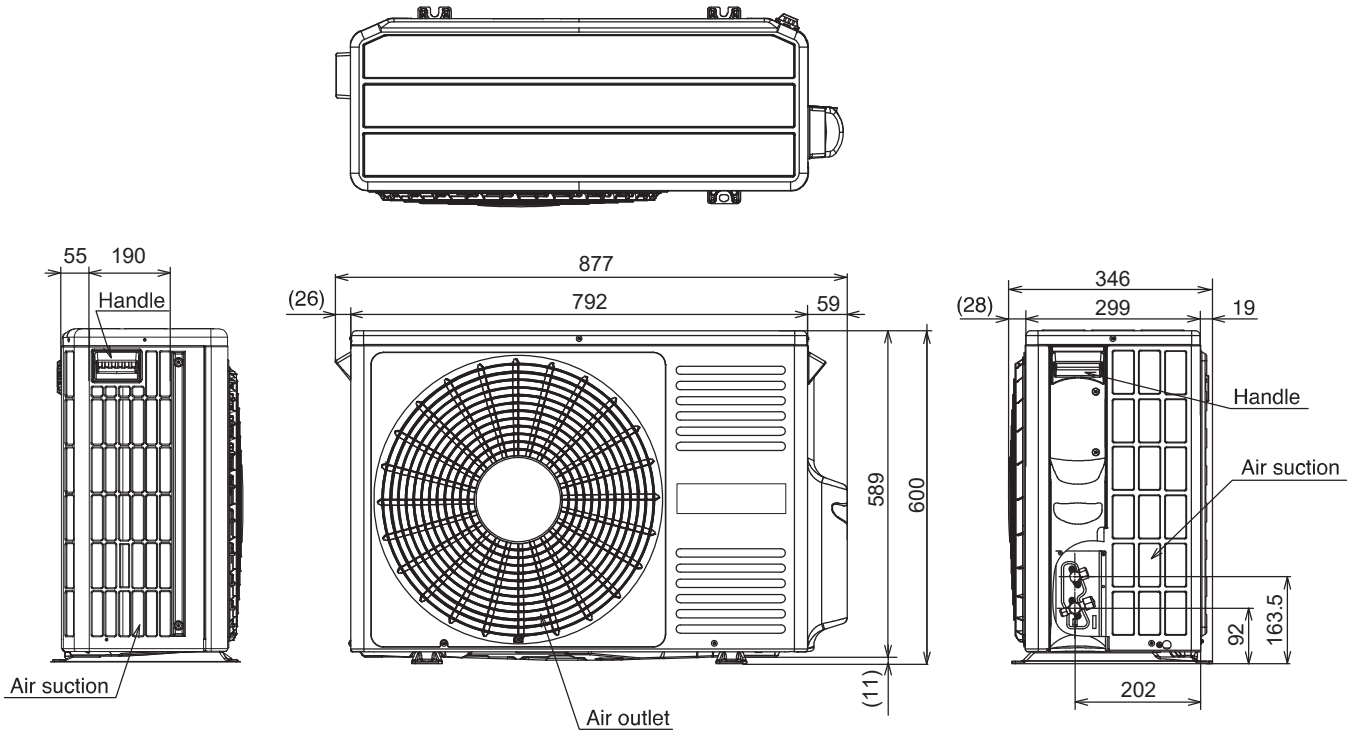
2.1. WALL TYPE: RAK-XJ25RHAE/XJ35RHAE/XJ50RHAE

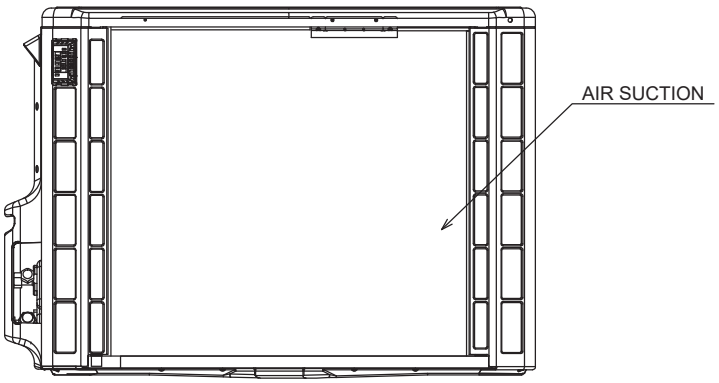
Unit : mm



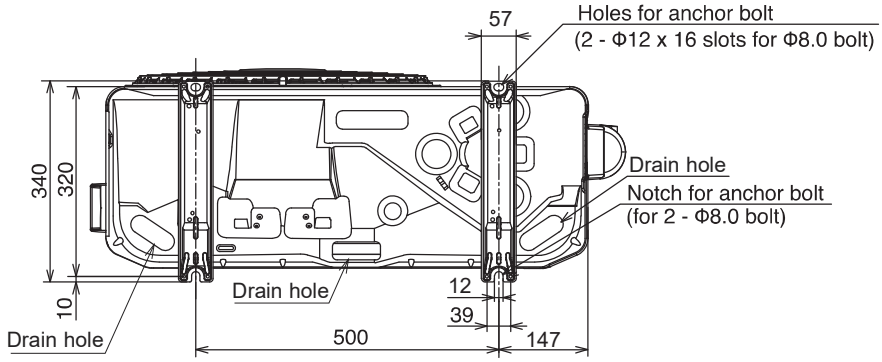
2.2. WALL TYPE: RAC-XJ25WHAE/XJ35WHAE

Unit : mm



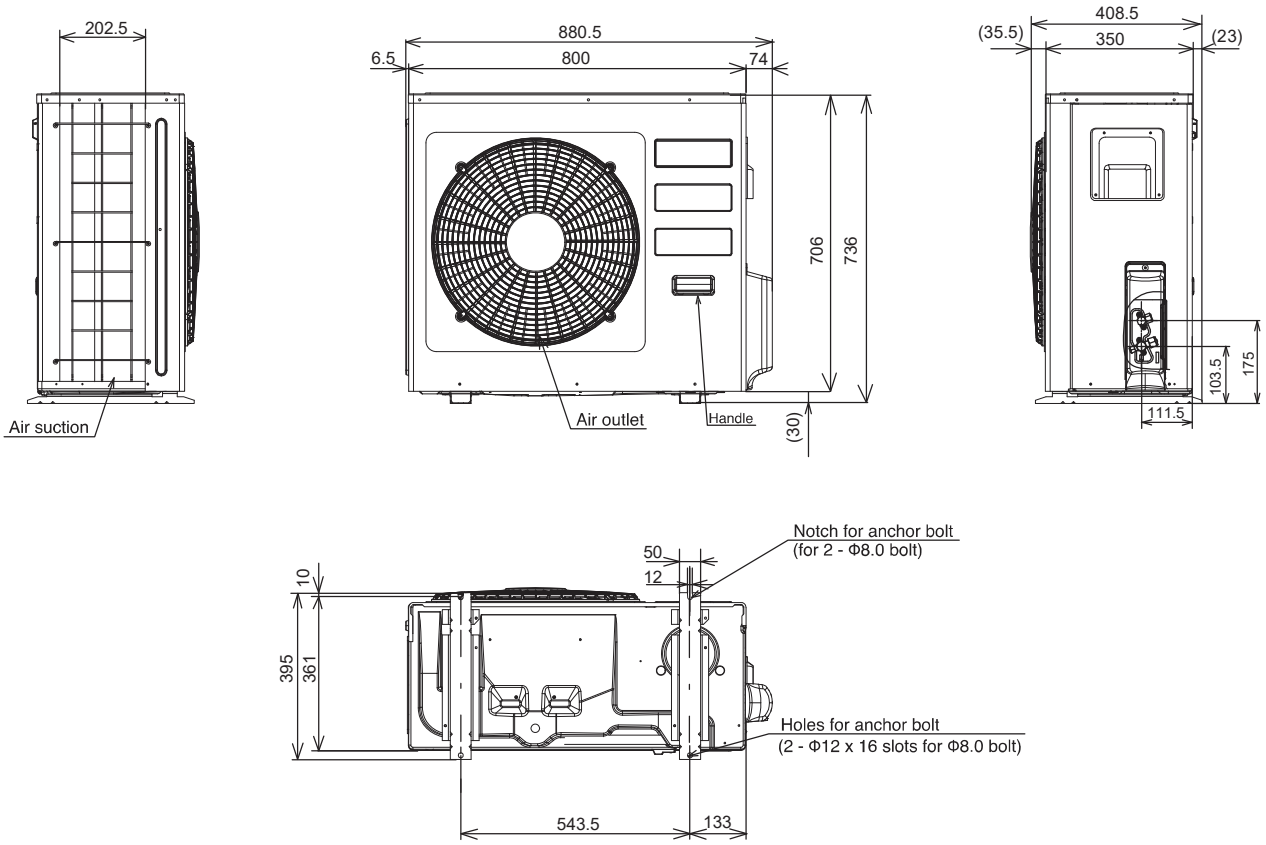


View from the rear



2.3. WALL TYPE: RAC-XJ50WHAE

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.
Condition:

①Pipe length / height difference : 5m / 0m

②Indoor fan speed at High mode

③Capacity loss due to white frost and defrost operation is not included.

3.1.1 RAK-XJ25RHAE/RAC-XJ25WHAE

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	1948	1736	269	2302	2416	333	2131	2230	392	2050	2158	443	1975	2063	462	1850	1944	495	1775	1849	515
14.0	20	1948	1736	269	2473	2416	333	2302	2253	397	2200	2158	447	2125	2086	467	1975	1944	500	1900	1873	524
16.0	22	1948	1847	273	2645	2416	337	2449	2253	402	2350	2158	452	2275	2086	476	2125	1944	510	2050	1873	529
18.0	25	2089	1981	277	2816	2625	342	2596	2439	406	2500	2347	457	2400	2252	476	2250	2110	515	2150	2015	534
19.0	27	2159	2048	281	2914	2764	346	2694	2555	411	2600	2466	462	2500	2371	481	2350	2229	515	2250	2134	534
22.0	30	2394	2026	281	3233	2741	346	2988	2532	411	2875	2442	467	2775	2347	486	2500	2276	534	2325	2229	563
24.0	32	2558	2026	286	3453	2741	351	3184	2532	416	3075	2442	467	2950	2347	491	2600	2324	548	2375	2300	582

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	3232		1216	3482		1316	3640		1368	3589		1248	3451		962	3237		538	3385		595	3659		688
18	3216		1223	3466		1323	3620		1379	3566		1262	3426		977	3218		566	3368		624	3630		720
20	3200		1230	3450		1330	3600		1390	3543		1276	3400		992	3200		593	3350		653	3600		753
22	3184		1237	3434		1337	3580		1401	3520		1290	3374		1006	3182		620	3332		682	3570		786
24	3168		1244	3418		1344	3560		1412	3496		1304	3349		1021	3163		648	3315		711	3541		818

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

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

3.1.2 RAK-XJ35RHAE/RAC-XJ35WHAE

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	1856	1413	310	2650	2376	463	2453	2193	546	2870	2581	749	2765	2467	781	2590	2326	838	2485	2212	871
14.0	20	1856	1413	310	2848	2376	463	2650	2216	553	3080	2581	757	2975	2496	790	2765	2326	847	2660	2240	887
16.0	22	1856	1504	314	3045	2376	470	2819	2216	559	3290	2581	765	3185	2496	806	2975	2326	863	2870	2240	895
18.0	25	1990	1613	319	3242	2582	476	2989	2399	565	3500	2808	773	3360	2694	806	3150	2524	871	3010	2411	904
19.0	27	2057	1667	324	3355	2719	482	3101	2513	572	3640	2949	781	3500	2836	814	3290	2666	871	3150	2552	904
22.0	30	2281	1649	324	3722	2696	482	3440	2490	572	4025	2921	790	3885	2808	822	3500	2723	904	3255	2666	952
24.0	32	2437	1649	329	3975	2696	488	3665	2490	578	4305	2921	790	4130	2808	830	3640	2779	928	3325	2751	985

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	4040		1431	4415		1418	4651		1400	4572		1302	4364		1074	4046		725	4269		713	4674		691
18	4020		1440	4395		1428	4625		1415	4543		1321	4332		1095	4023		763	4247		753	4637		736
20	4000		1450	4375		1438	4600		1430	4514		1340	4300		1115	4000		800	4225		793	4600		780
22	3980		1460	4355		1447	4575		1445	4485		1359	4268		1135	3977		837	4203		832	4563		824
24	3960		1469	4335		1457	4550		1460	4456		1378	4236		1156	3954		875	4181		872	4526		869

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

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

3.1.3 RAK-XJ50RHAE/RAC-XJ50WHAE

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	3773	2585	773	3601	2905	774	3333	2681	912	4100	3317	1315	3950	3171	1372	3700	2989	1472	3550	2843	1529
14.0	20	3773	2585	773	3869	2905	774	3601	2709	923	4400	3317	1329	4250	3208	1386	3950	2989	1486	3800	2880	1558
16.0	22	3773	2750	785	4138	2905	784	3831	2709	934	4700	3317	1343	4550	3208	1415	4250	2989	1515	4100	2880	1572
18.0	25	4045	2949	797	4406	3156	794	4061	2933	944	5000	3609	1358	4800	3463	1415	4500	3244	1529	4300	3098	1586
19.0	27	4182	3049	809	4559	3324	804	4214	3072	955	5200	3791	1372	5000	3645	1429	4700	3426	1529	4500	3281	1586
22.0	30	4636	3015	809	5057	3296	804	4674	3044	955	5750	3754	1386	5550	3609	1443	5000	3499	1586	4650	3426	1672
24.0	32	4955	3015	822	5402	3296	815	4981	3044	966	6150	3754	1386	5900	3609	1458	5200	3572	1629	4750	3536	1729

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	5442		2181	5630		2212	5727		2249	5744		2156	5807		1898	5933		1585	6049		1611	6193		1658
18	5471		2166	5659		2197	5763		2225	5787		2126	5854		1865	5967		1524	6081		1546	6246		1586
20	5500		2150	5688		2181	5800		2200	5829		2095	5900		1832	6000		1463	6113		1482	6300		1513
22	5529		2134	5717		2166	5837		2175	5871		2064	5946		1798	6033		1402	6144		1417	6354		1440
24	5558		2119	5746		2150	5873		2151	5913		2033	5993		1765	6067		1341	6176		1352	6407		1368

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

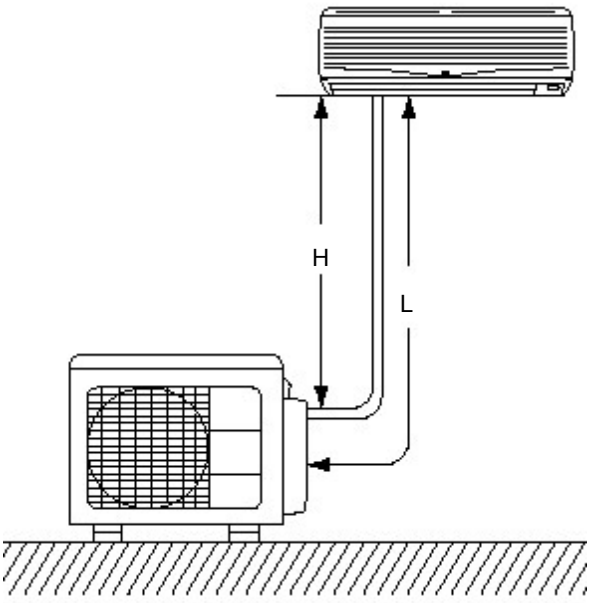
HCA= HC x F

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.

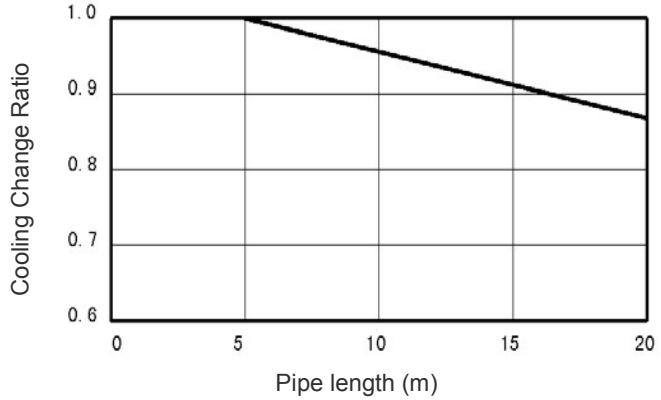


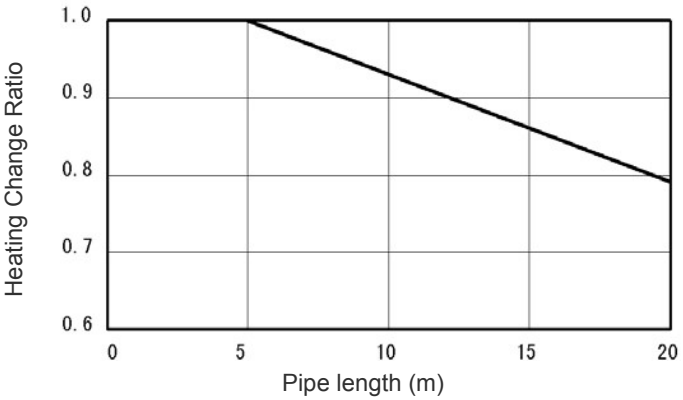
H: Vertical Distance Between Indoor Unit and Outdoor Units in Meters

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

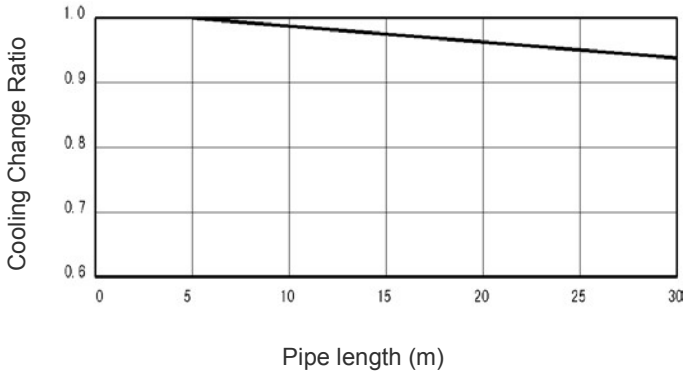
EL: Equivalent Total Distance Between Indoor Unit and Outdoor Unit in Meters
(Equivalent One-Way Piping Length)

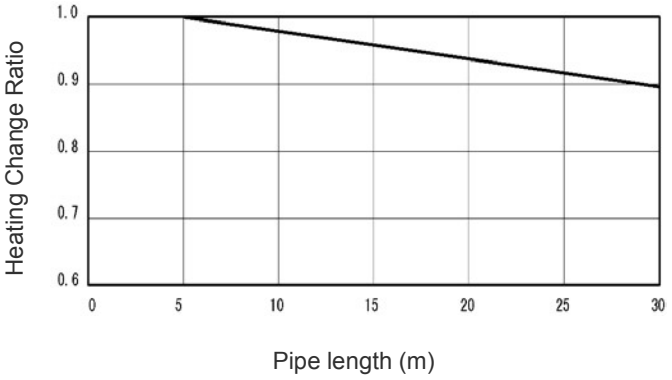
Models :RAK-XJ25RHAE/RAC-XJ25WHAE,RAK-XJ35RHAE/RAC-XJ35WHAE





Models : RAK-XJ50RHAE/RAC-XJ50WHAE





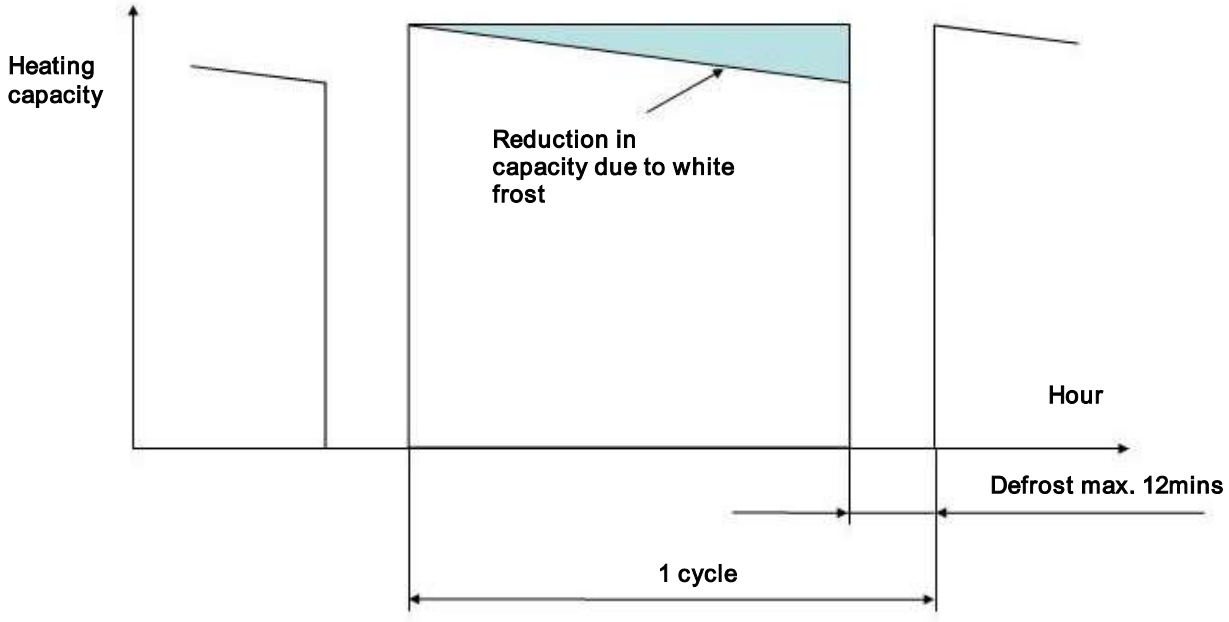
3.3. CORRECTION FACTORS ACCORDING TO DEFROSTING OPERATION

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	-7	-5	0	7	10	15
Correction factor (humidity rate85% RH)	0.95	0.95	0.89	0.85	0.81	1.0	1.0	1.0

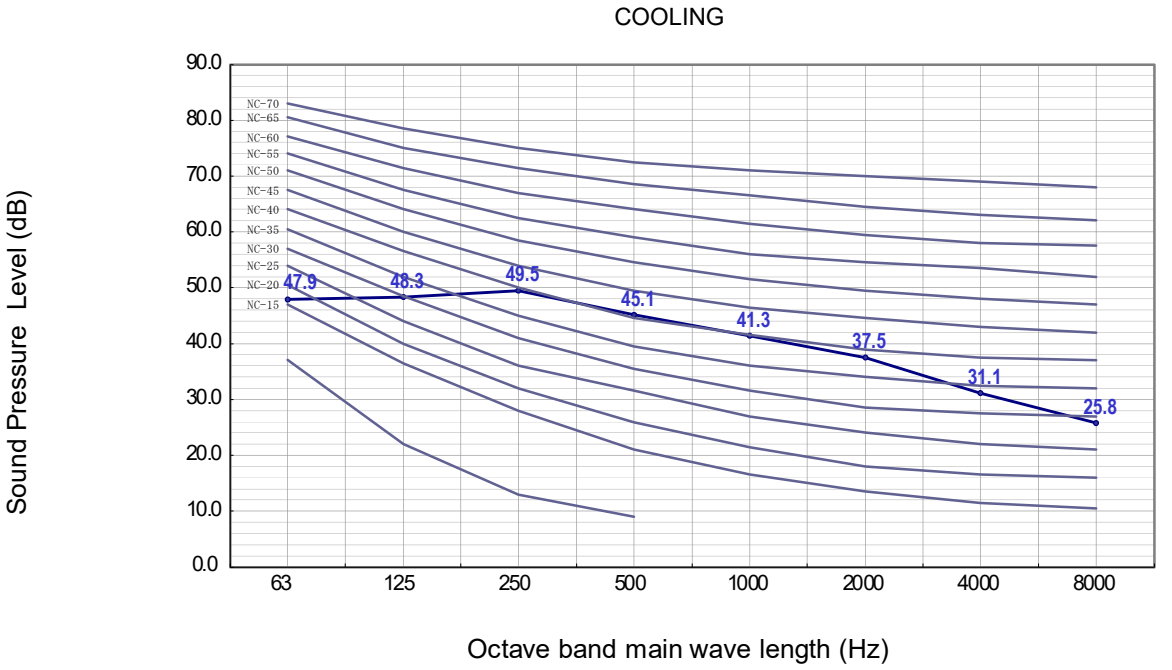
Correction Factor

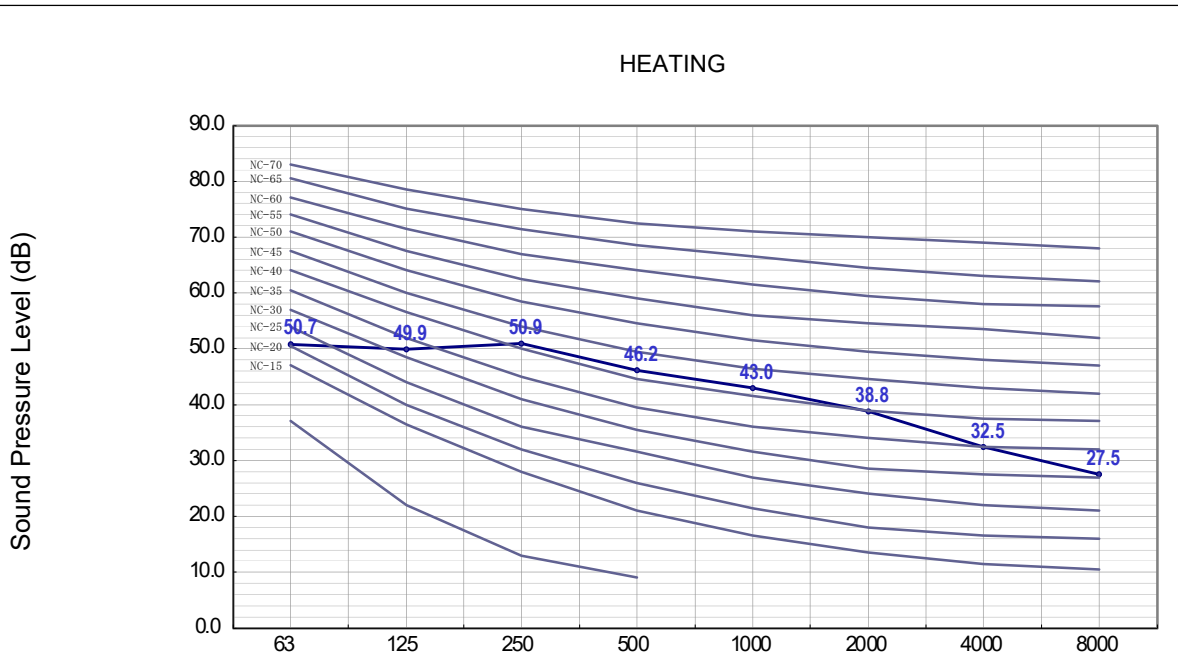


NOTE:
The correction factor is not valid for special conditions such as snowfall or operation in a transitional period.

4 SOUND DATA

4.1. RAC-XJ25WHAE



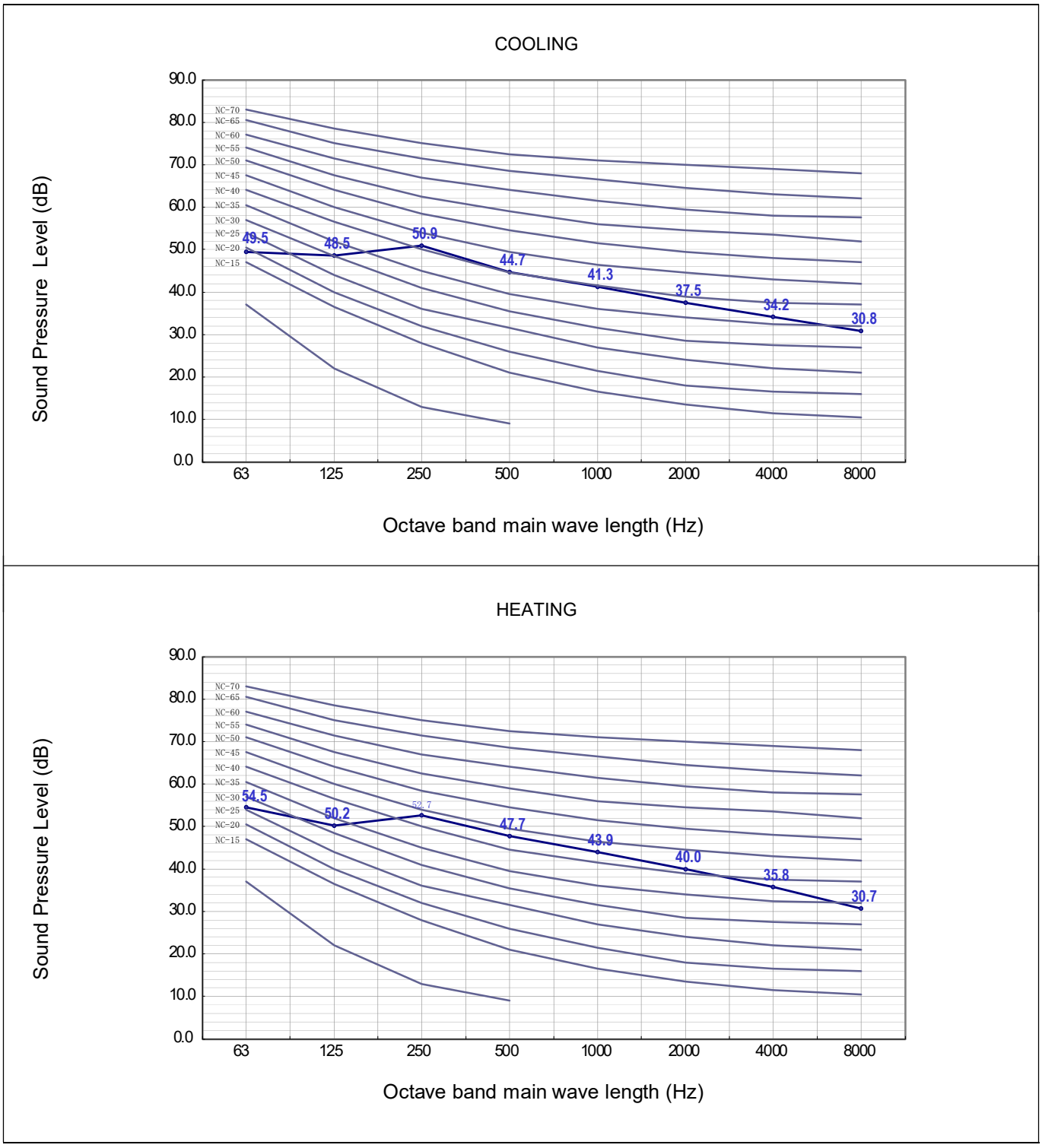


The Sound Pressure Level is based on the following conditions:

- *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-XJ35WHAE

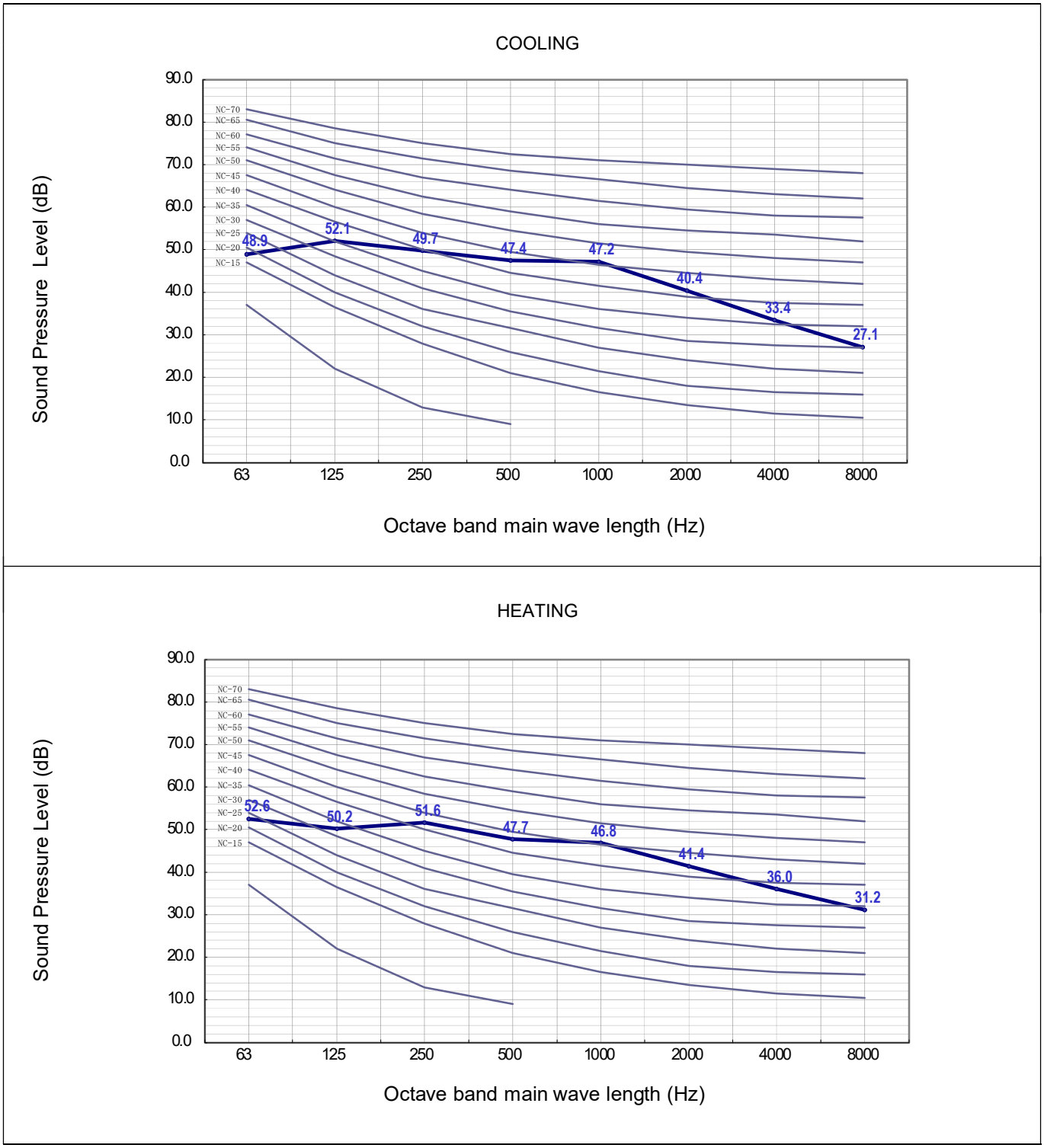


The Sound Pressure Level is based on the following conditions:

- *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-XJ50WHAE



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 ~ 264V
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

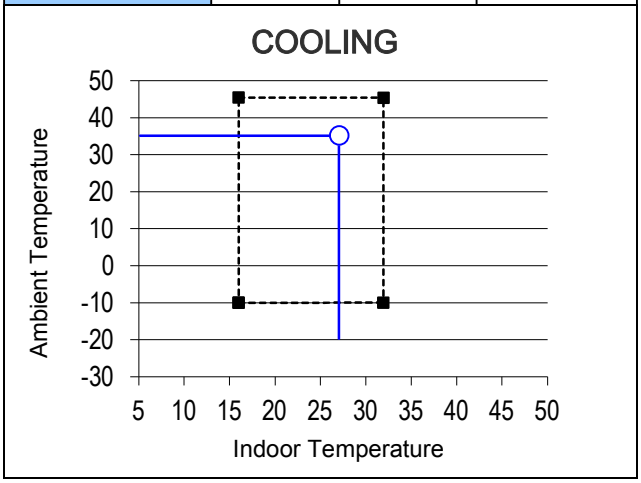
Applicable models:

RAC-XJ25WHAE
RAC-XJ35WHAE
RAC-XJ50WHAE

The temperature range is indicated in the following table.

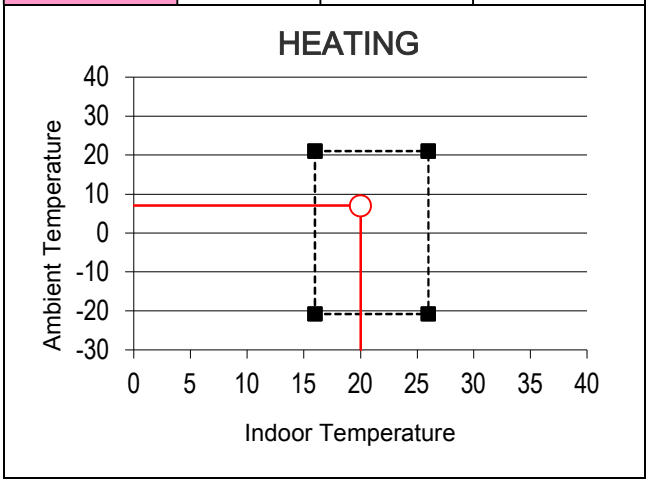
Cooling

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	-20	21	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-XJ25RHAE	220 ~ 240, 1, 50	3.15	0.13	30
RAK-XJ35RHAE	220 ~ 240, 1, 50	3.15	0.13	30
RAK-XJ50RHAE	220 ~ 240, 1, 50	3.15	0.13	30

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				
						Cooling Operation		Heating Operation	
	VOL, PH , Hz	Fuse Rating (A)	Min （V)	Max （V)	Locked Rotor Ampere(A)	RNC	IPT	RNC	IPT
RAC-XJ25WHAE	220 ~ 240, 1 , 50	15	198	264	-	2.74	481	3.43	593
RAC-XJ35WHAE	220 ~ 240, 1 , 50	15	198	264	-	4.34	814	4.32	800
RAC-XJ50WHAE	220 ~ 240, 1 , 50	25	198	264	-	6.23	1429	6.38	1463

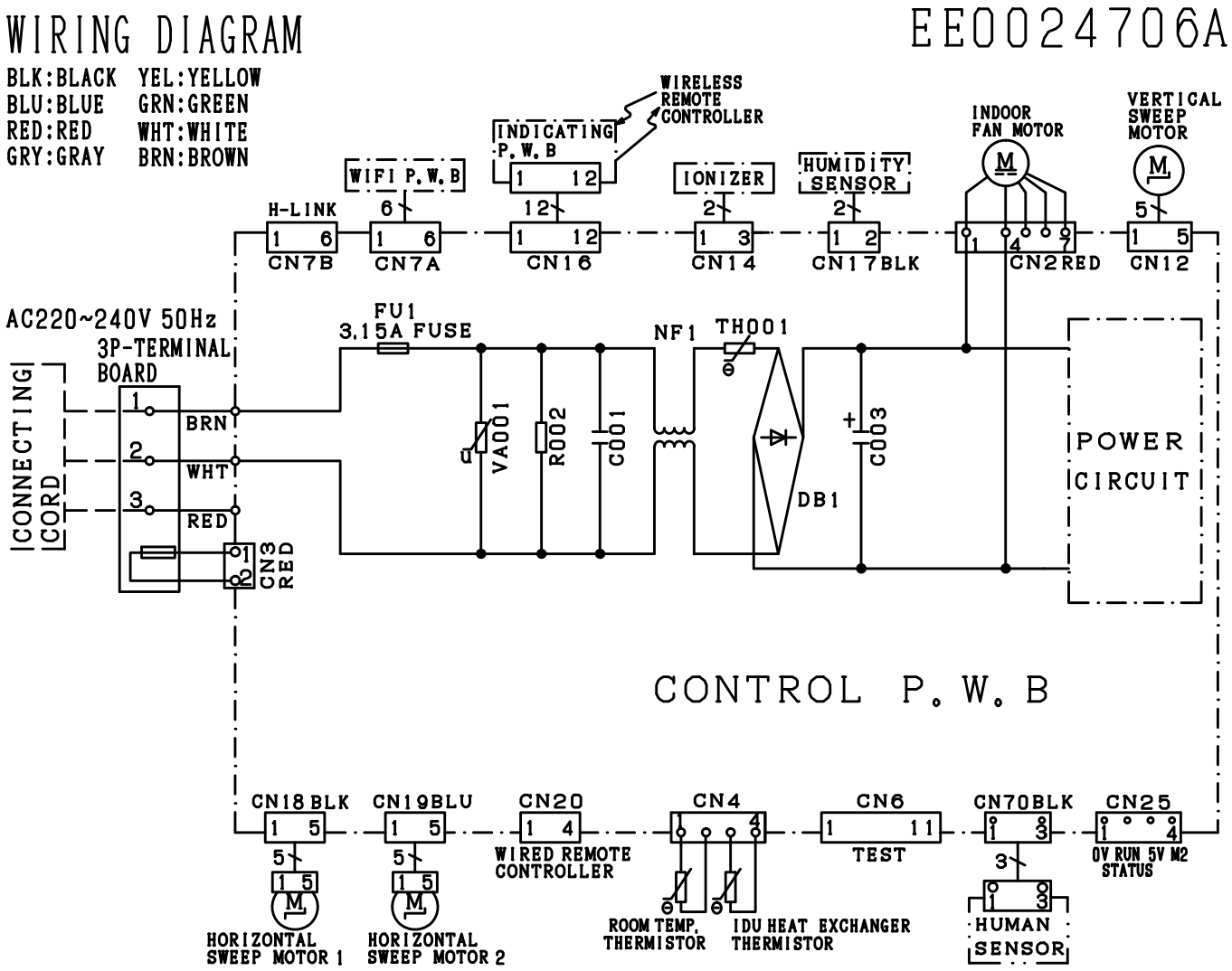
VOL: Rated Unit Power Supply Voltage (V)
HZ: Frequency (Hz)
STC: Starting Current (A)
RNC: Running Current (A)
PH: Phase (ϕ)
IPT: Input (W)

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.*

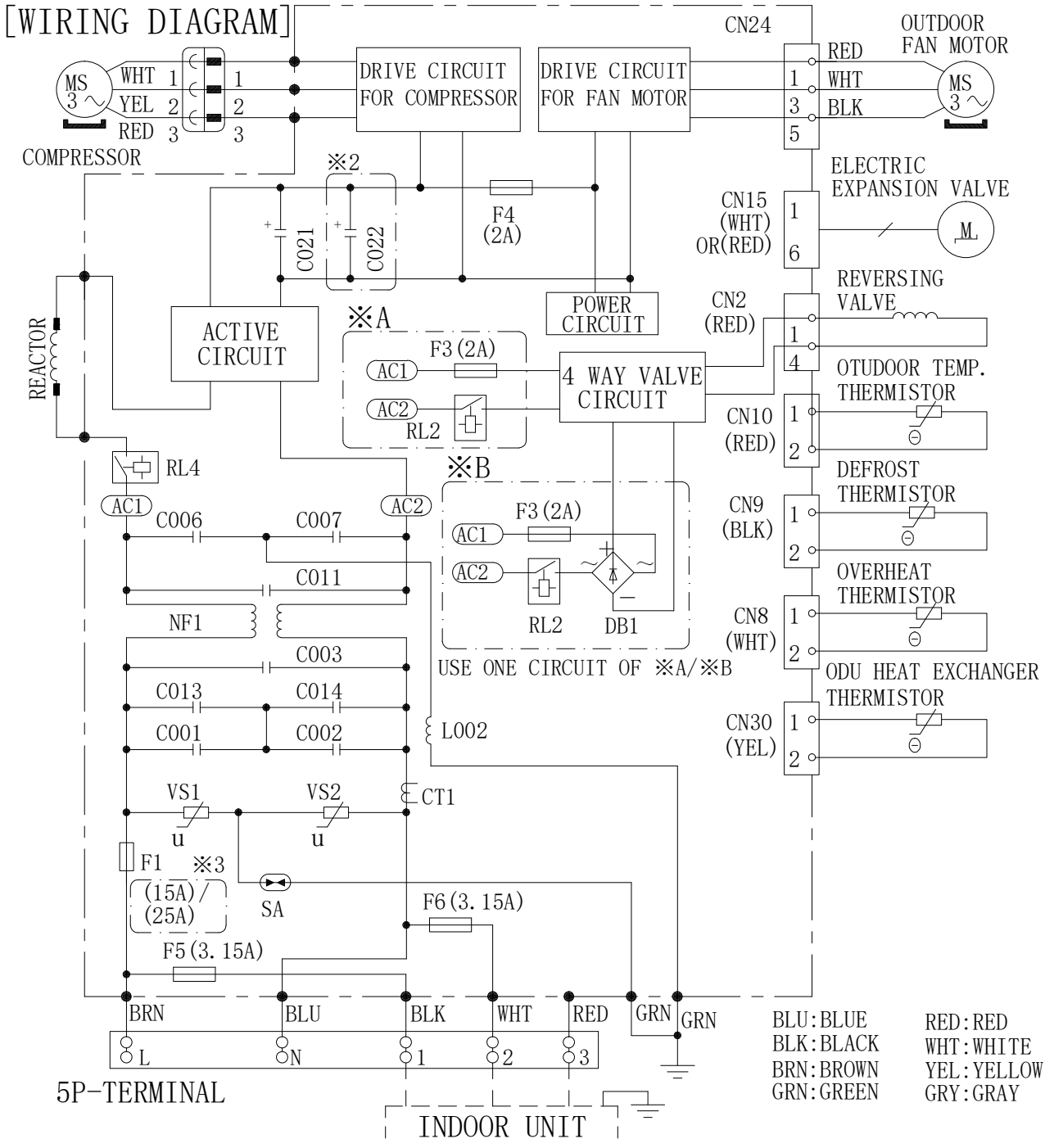
7 WIRING DIAGRAM

7.1. RAK-XJ25RHAE, RAK-XJ35RHAE, RAK-XJ50RHAE



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

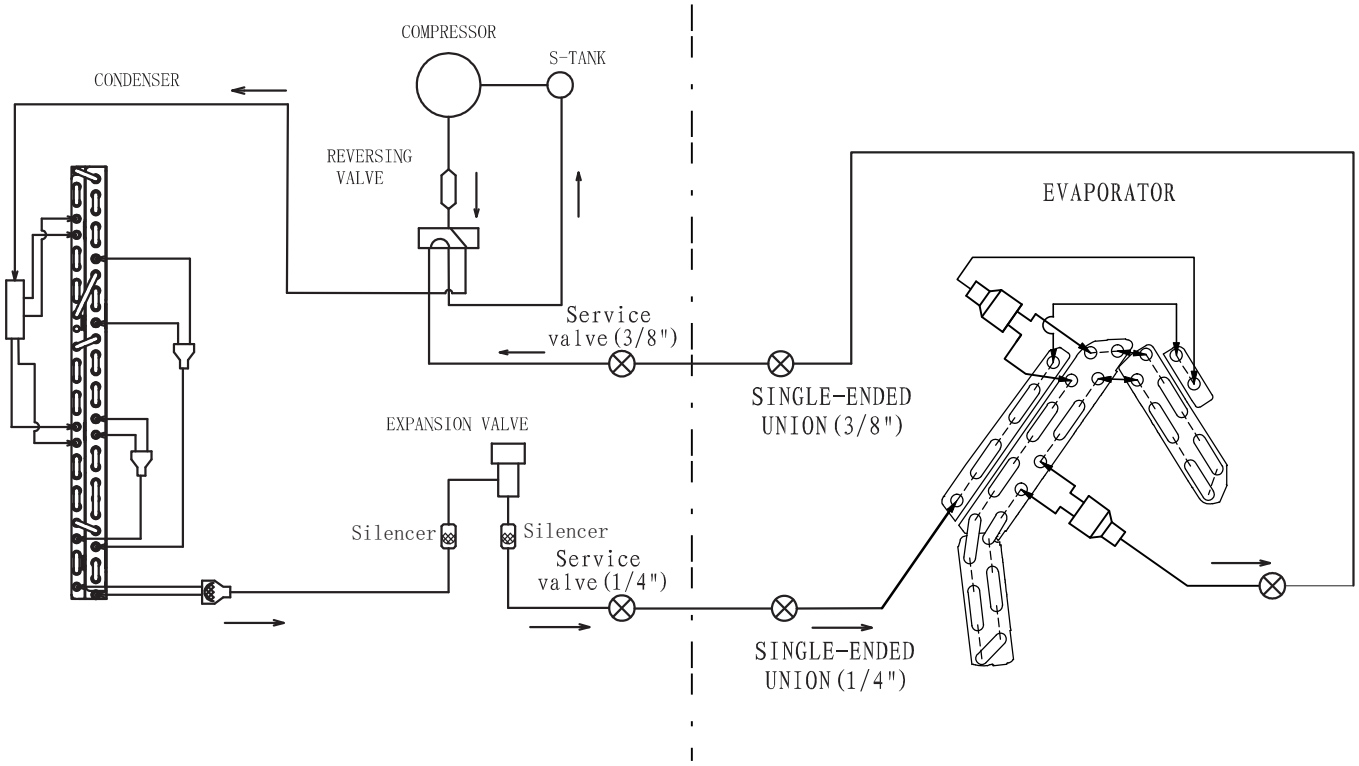
7.2. RAC-XJ25WHAE, RAC-XJ35WHAE, RAC-XJ50WHAE



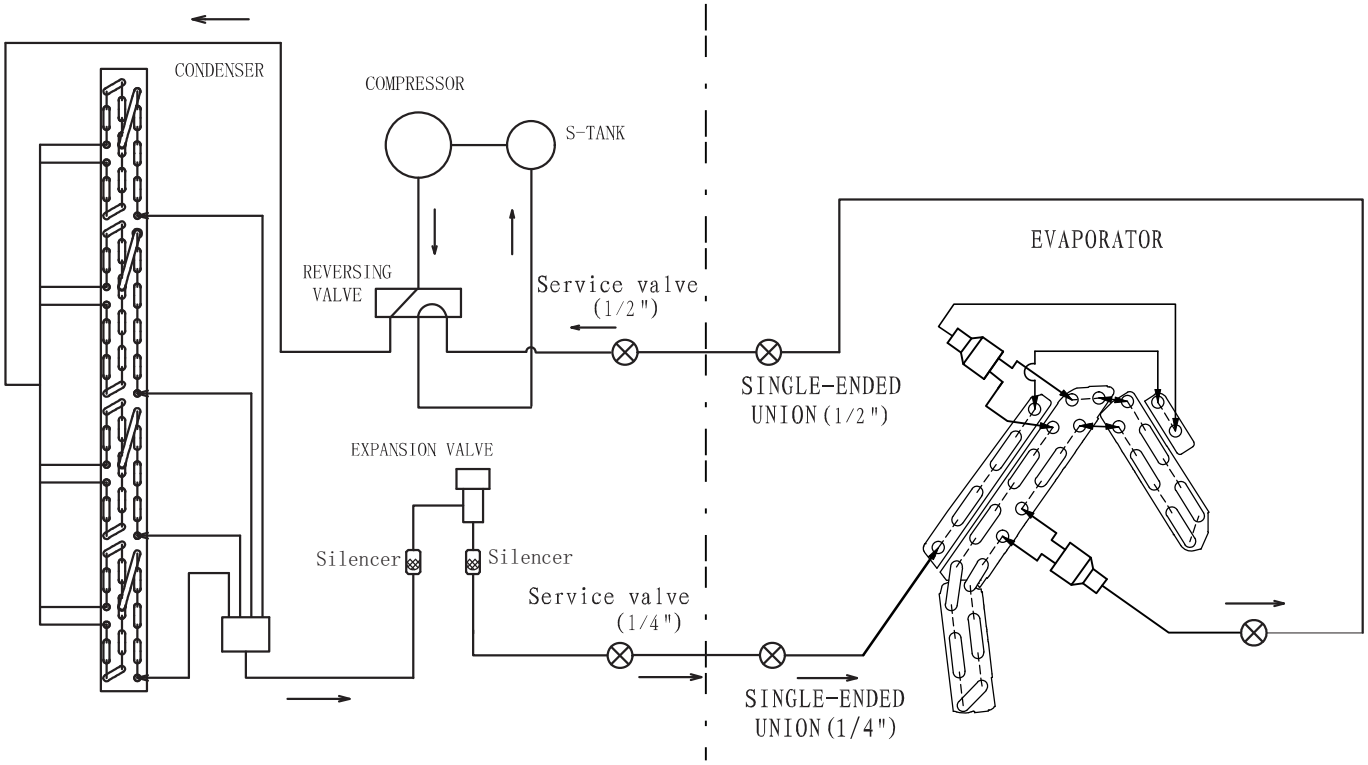
※2 SOME MODELS NOT NEED TO INSTALL THE CIRCUITS IN DASH DOT.
※3 F1 CURRENT VALUE BE DIFFERENT FOR DIFFERENT MODELS.

8 REFRIGERANT CYCLE

8.1. WALL TYPE: RAK-XJ25RHAE/RAC-XJ25WHAE, RAK-XJ35RHAE/RAC-XJ35WHAE



8.2. WALL TYPE: RAK-XJ50RHAE / RAC-XJ50WHAE

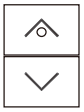


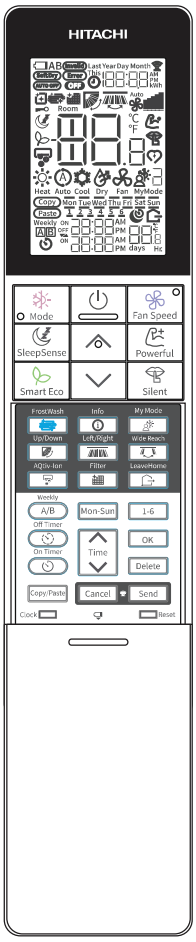
9 CONTROL AND FUNCTION

9.1. WIRELESS REMOTE CONTROL FUNCTION



RC-BGH1FA0G

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 (Heat) → Auto (Auto) → Cool (Cool) → Dry (Dry) → Fan (Fan) cyclically.
	**SleepSense Button** Control set temperature and fan speed.
	**Smart Eco Button** Use this button to set the Eco mode.
	**On/Off Button** Press this button to start operation. Press it again to stop operation.
	**Temperature Button** Room temperature setting.Value will change quicker when keep pressing.
	**Fan Speed Button** Select the fan speed.
	**Powerful Button** The air conditioner performs at maximum power.
	**Silent Button** The fan speed changes to the silent fan speed
	**FrostWash Button** The dust and dirt adhering to indoor heat exchanger which is the cause of the smell.
	**Up/Down Button** Control the angle of the horizontalair deflector.
	**AQtiv-Ion Button**
	**Info Button**
	**Left/Right Button** Control the angle of the Vertical air deflector.
	**Filter Sign Reset Button**
	**My Mode Button** Use this mode for personalized comfor table settings. The My Mode can be set by using the remote controller. Up to 3 programs can be set.
	**Wide Reach Button** Control the angle of the Vertical air deflector.
	**LeaveHome Button** Prevent the room temperature from falling too much by setting temperature 10°C~16°C when no one is at home.



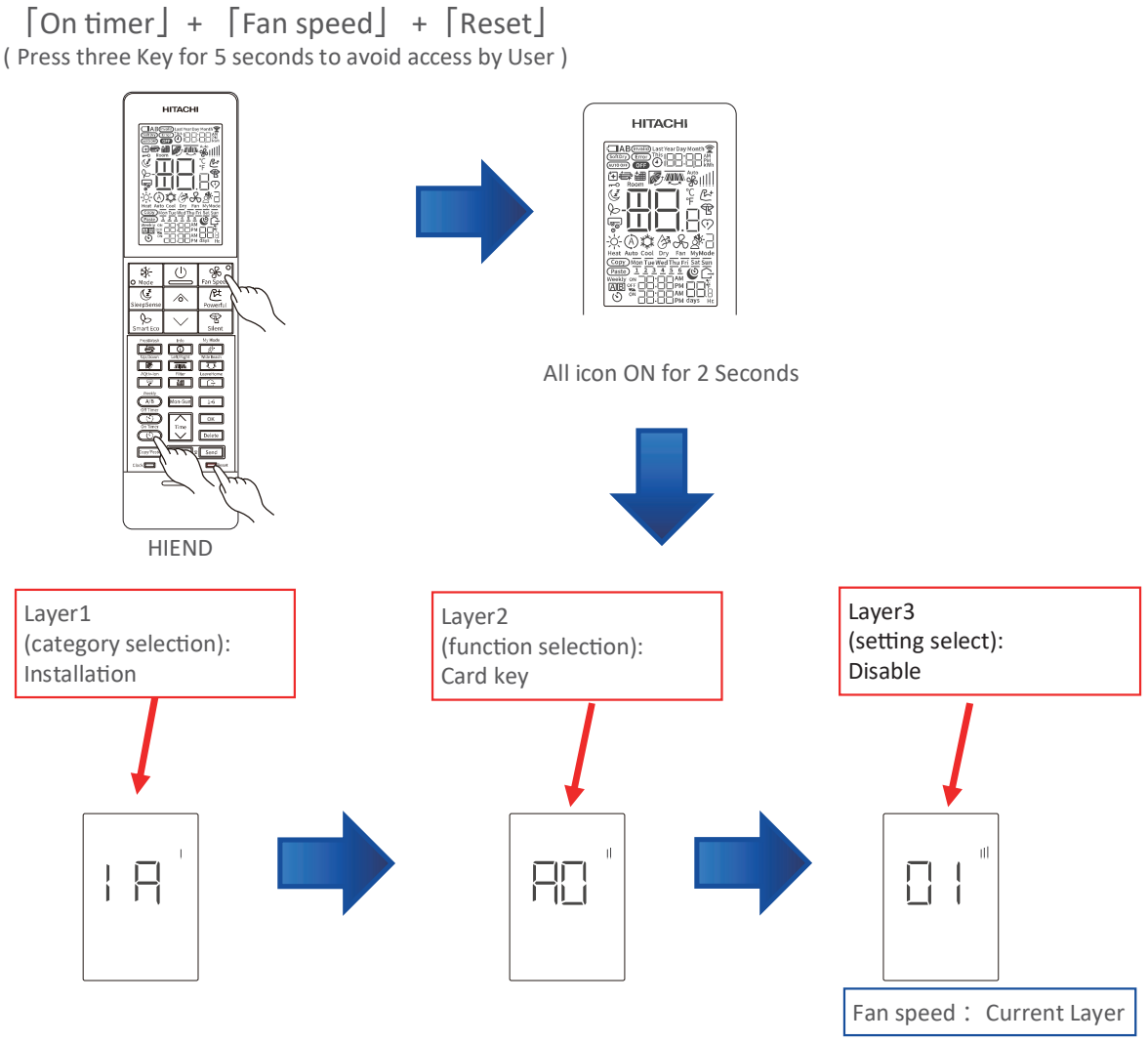
RC-BGH1FA0G

WEEKLY TIMER Buttons	FUNCTION
On Timer	**On Timer Button** Select the turn ON time.
Off Timer	**Off Timer Button** Select the turn OFF time.
Time	**Time Button** Press the button to set starting time of the program.
OK	**OK Button** Press the button to save the program. The button shall be pressed everytime after finishing a program setting.
Delete	**DELETE Button** 1) Press the button to delete the selected program. 2) Press the button for about 10 seconds by directing the remote controller towards the indoor unit while Mode A or B display blinks, programs for Mode A or B will be deleted both from the indoor unit and the remote controllerafter the beep sound from the indoor unit.The program setting remains in the remote controller.
Mon-Sun	**DAY Button** Select the desired day of the week.
1-6	**PROGRAM NO. Button** Press this button to select a program number.
Cancel	**CANCEL Button** 1) Press the button to cancel the current setting process on the screen. 2) Press the button by directing the remote controller towards the indoor unit, then weekly timer setting will be canceled from indoor unit after the beep sound from the indoor unit. The program setting remains in the remote controller.
Send	**SEND Button** Press the button for about 3 seconds by directing the remote controller towards the indoor unit after finishing the program setting. Timer lamp on the indoor unit will blink rapidly and after the beep sound from indoor unit, TIMER lamp will light up.
Clock	**CLOCK Button** Press the button to set calendar and clock.
A/B	**WEEKLY TIMER MODE Button** 1) Select Mode A or Mode B. 2 modes can be set and stored as a weekly timer. 2) By pressing thebutton longer than 3 seconds, program setting screen will appear.

For more information, please refer to the operation manual.

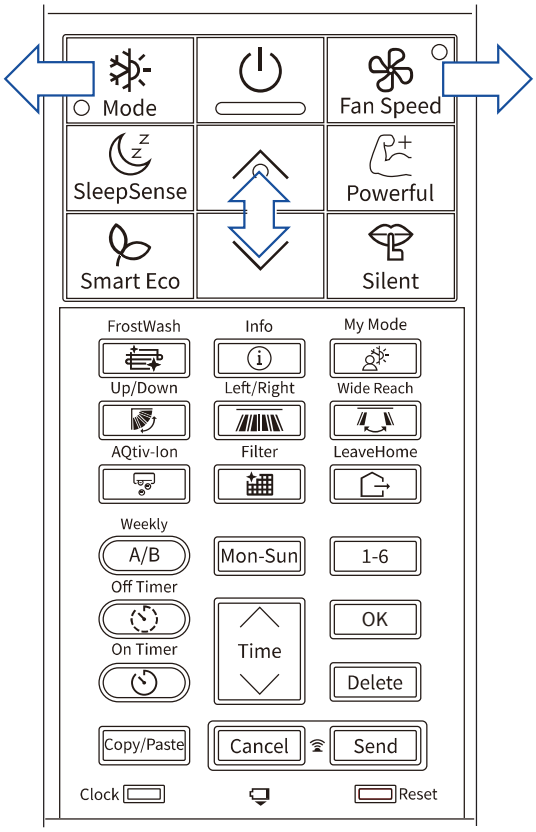
9.2. How to set up from Service setting mode

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

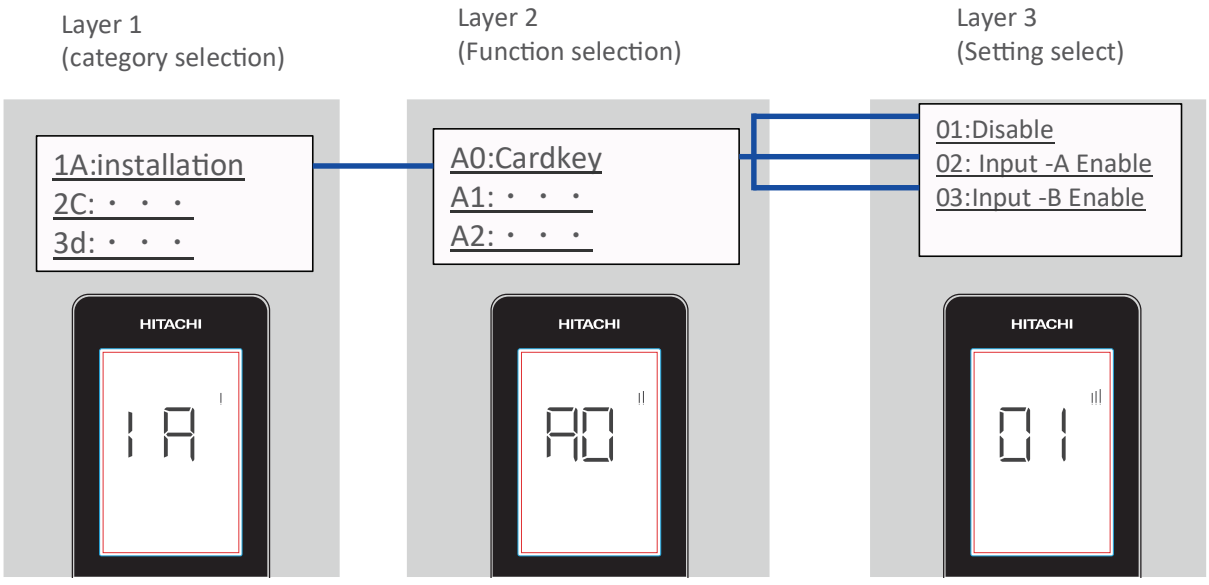


※ If you don't do anything for 30 seconds, you will be out of the service setting mode.

9.3. How to operate the HHRC method

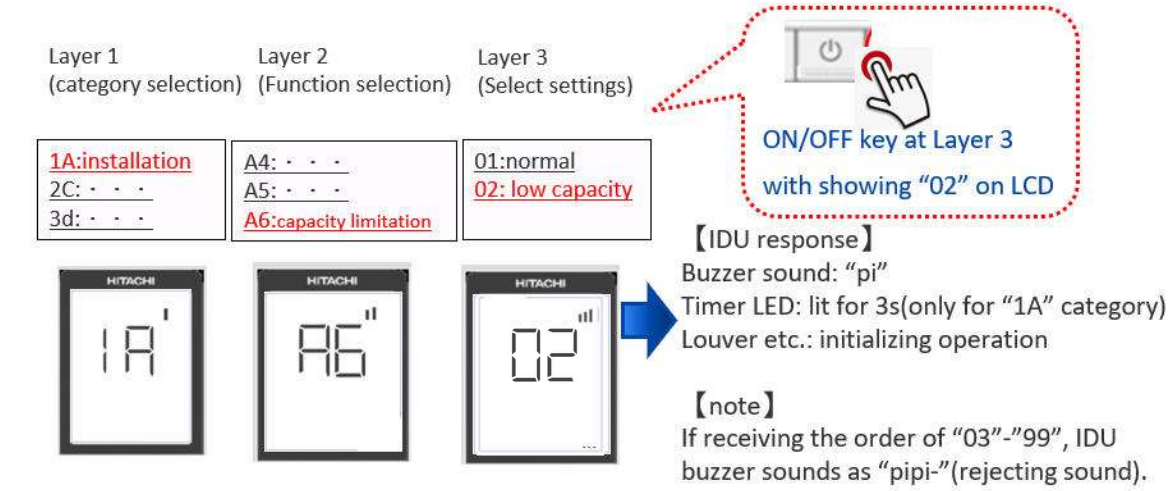


Temp△▽ : Selection (in the same layer)
Mode : move to previous layer
Fan Speed : Move to next layer
ON/OFF : Decision/Send (at layer 3)
: Current setting check(at layer 2)
Filter: category initialization(at layer 1)
Filter + ON/OFF: all category initialization(at layer 1)
※ To exit from this setting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



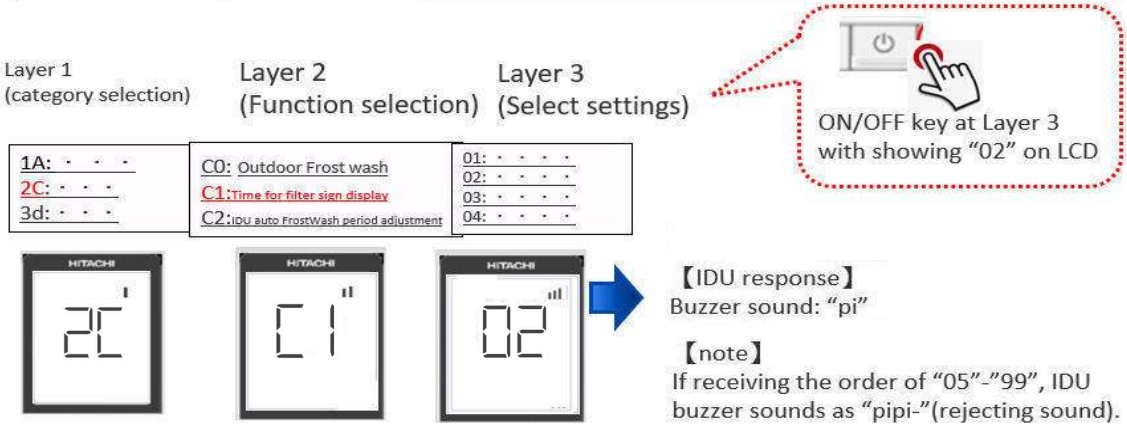
The Capacity Limits can be changed by the remote controller. (RAK-XJ18QHAE only)
(This procedure shall be implemented strictly by service personnel only.)
It is possible to return it to the default setting.

Category	Function Name	Value	HHRC LCD display Layer1 Category	Layer2 Function	Layer3 Value
Installation	Capacity limitation	normal	1A	A6	01
		low capacity			02
		reserve			03-99



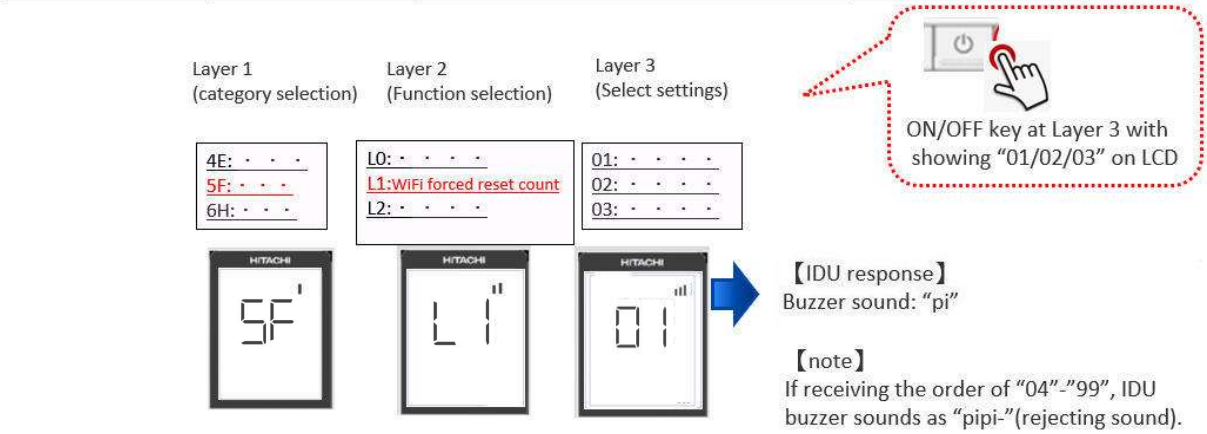
The Adjust filter sign Time can be changed by the remote controller.
(This procedure shall be implemented strictly by service personnel only.)
It is possible to return it to the default setting.

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



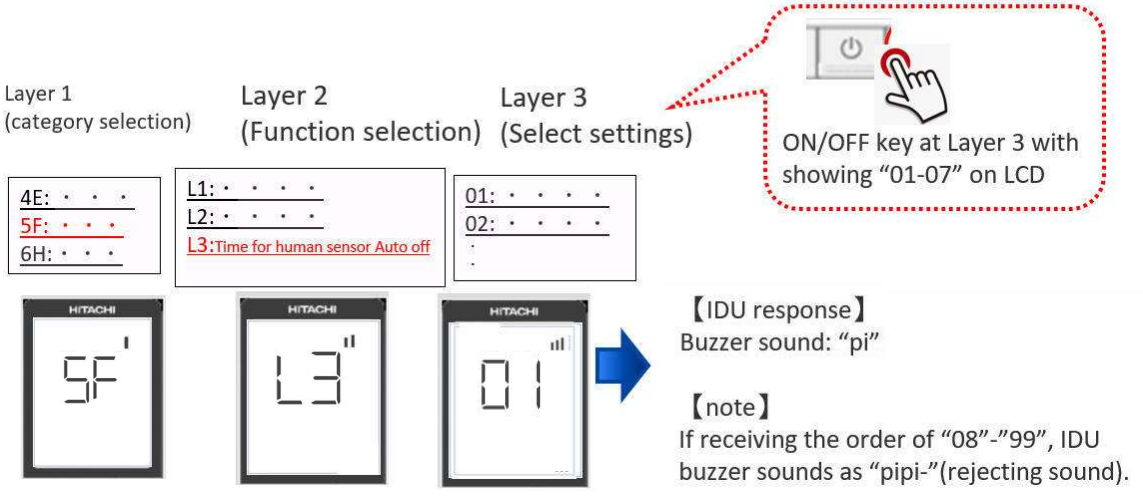
The Global Wi-Fi forced resetting count can be changed by the remote controller.
(This procedure shall be implemented strictly by service personnel only.)
It is possible to return it to the default setting.

Category	Function Name	Value	HHRC LCD display Layer1 Category	Layer2 Function	Layer3 Value
Supporting service	WiFi forced reset count	4 (Number of forced resets)	5F	L1	01
		8 (Number of forced resets)			02
		12(Number of forced resets)			03
		reserve			04-99



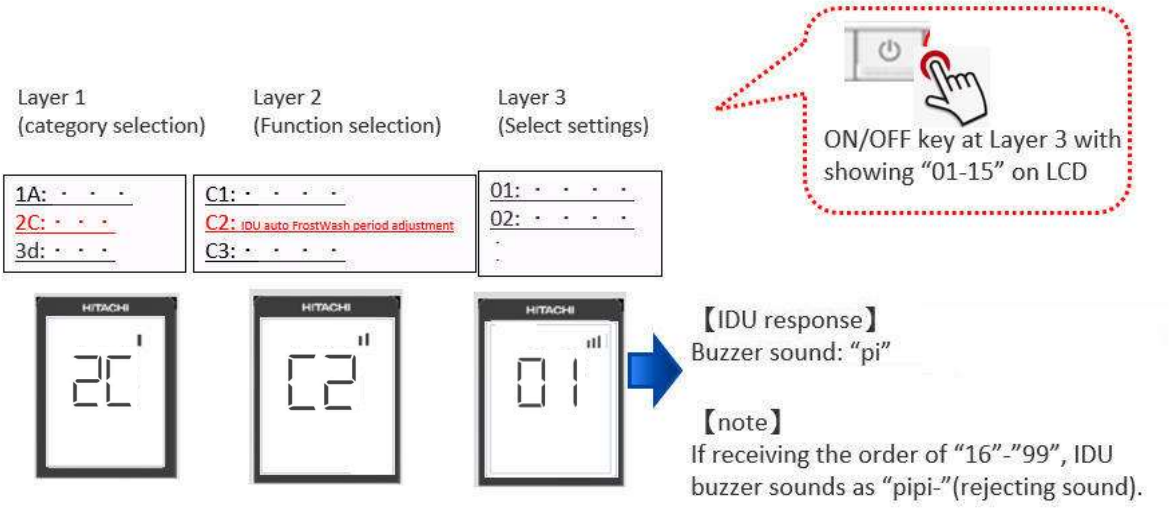
The AUTO OFF time can be changed by the remote controller.
(This procedure shall be implemented strictly by service personnel only.)
It is possible to return it to the default setting.

Category	Function Name	Value	HHRC LCD display Layer1 Category	Layer2 Function	Layer3 Value
Supporting service	Time for human sensor Auto off	Auto-off monitoring time:Adjustment -3 (20min)	5F	L3	01
		Auto-off monitoring time:Adjustment -2 (30min)			02
		Auto-off monitoring time:Adjustment -1 (40min)			03
		Auto-off monitoring time:Adjustment ±0 (50min)			04
		Auto-off monitoring time:Adjustment +1 (60min)			05
		Auto-off monitoring time:Adjustment +2 (90min)			06
		Auto-off monitoring time:Adjustment +3 (120min)			07
		reserve			08-99



The IDU Frost Wash(Auto) time-adjusting 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	IDU Frost Wash(Auto) time-adjusting	Cleaning time setting (normal case) :Adjustment_No1 (2h)	2C	C2	01
		Cleaning time setting (normal case) :Adjustment_No2 (6h)			02
		Cleaning time setting (normal case) :Adjustment_No3 (10h)			03
		Cleaning time setting (normal case) :Adjustment_No4 (20h)			04
		Cleaning time setting (normal case) :Adjustment_No5 (42h)			05
		Cleaning time setting (normal case) :Adjustment_No6 (60h)			06
		Cleaning time setting (normal case) :Adjustment_No7 (84h)			07
		Cleaning time setting (normal case) :Adjustment_No8 (90h)			08
		Cleaning time setting (normal case) :Adjustment_No9 (100h)			09
		Cleaning time setting (normal case) :Adjustment_No10 (120h)			10
		Cleaning time setting (normal case) :Adjustment_No11 (140h)			11
		Cleaning time setting (normal case) :Adjustment_No12 (160h)			12
		Cleaning time setting (normal case) :Adjustment_No13 (180h)			13
		Cleaning time setting (normal case) :Adjustment_No14 (200h)			14
		Cleaning time setting (normal case) :Adjustment_No15 (250h)			15
		reserve			16-99



9.4. Service setting item used for GRAC Hiend（Wireless remote model：RC-BGH1FA0G）

Category	Function	Display on LCD Temperature 7 segment Layer Wise			
		1	2	3	Value setting meaning at Layer-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
	Capacity limitation	1A	A6	01	Normal
				02	low capacity
				03-99	(reserve)
Cycle Operation	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

9.4. Service setting item used for GRAC Hiend (Wireless remote model: RC-BGH1FA0G)

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-H2)
					2- Reverse (Hi2-Hi-Med-Lo-Silent-Auto)
	Operation Mode : Auto	6H	P2	2	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
	RTC and Timer setting Format change: 12 Hr Format / 24 HR Format (Only for RTC based models)	6H	PA	02	1 - 12 Hr Format with AM/PM for RTC and Timer ON, Timer OFF
					2 - 24 Hr Format for RTC and Timer ON , Timer OFF
	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 cheak	7J	t1	01	1 : Failure Diagnosis Start
				02-99	Reserved
	Failure Memory Erase	7J	t2	01	1:Failure Memory Erase
				02-99	Reserved
	Humidity Sensor failure diagnosis	7J	t3	01	1:Humidity ensor failure diagnosis request
				02-99	Reserved
	Human Sensor failure diagnosis	7J	t4	01	1: failure diagnosis request
				02-99	Reserved

9.4. Service setting item used for GRAC Hiend（Wireless remote model：RC-BGH1FA0G）

Clean	Outdoor Frost wash(Manual)/ Fan reverse request(Manual)	2C	C0	01	Start request
				02-99	Reserved
	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
	IDU auto FrostWash period adjustment	2C	C2	01	Cleaning time setting(normal case):Adjustment_NO 1 (2hours)
				02	Cleaning time setting(normal case):Adjustment_NO 2 (6hours)
				03	Cleaning time setting(normal case):Adjustment_NO 3 (10hours)
				04	Cleaning time setting(normal case):Adjustment_NO 4 (20hours)
				05	Cleaning time setting(normal case):Adjustment_NO 5 (42hours)
				06	Cleaning time setting(normal case):Adjustment_NO 6 (60hours)
				07	Cleaning time setting(normal case):Adjustment_NO 7 (84hours)
				08	Cleaning time setting(normal case):Adjustment_NO 8 (90hours)
				09	Cleaning time setting(normal case):Adjustment_NO 9 (100hours)
				10	Cleaning time setting(normal case):Adjustment_NO 10 (120hours)
				11	Cleaning time setting(normal case):Adjustment_NO 11 (140hours)
				12	Cleaning time setting(normal case):Adjustment_NO 12 (160hours)
				13	Cleaning time setting(normal case):Adjustment_NO 13 (180hours)
				14	Cleaning time setting(normal case):Adjustment_NO 14 (200hours)
				15	Cleaning time setting(normal case):Adjustment_NO 15 (250hours)
				16~99	Reserved
Supporting service category	Wi-Fi forced reset count	5F	L1	01	4 (Number of forced resets)
				02	8 (Number of forced resets)
				03	12 (Number of forced resets)
				04~99	Reserved
	Time for human sensor Auto off	5F	L3	01	Auto-off monitoring time: Adjustment- 3 (20min)
				02	Auto-off monitoring time: Adjustment- 2 (30min)
				03	Auto-off monitoring time: Adjustment- 1 (40min)
				04	Auto-off monitoring time: Adjustment± 0 (50min)
				05	Auto-off monitoring time: Adjustment+ 1 (60min)
				06	Auto-off monitoring time: Adjustment+ 2 (90min)
				07	Auto-off monitoring time: Adjustment+ 3 (120min)
				08~99	Reserved

9.5. Buzzer sounding for showing error contents

【Purpose】

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

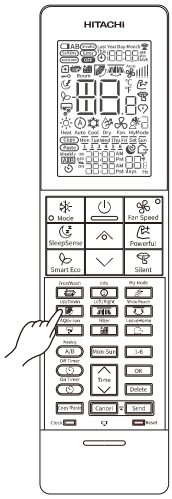
【Function】

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



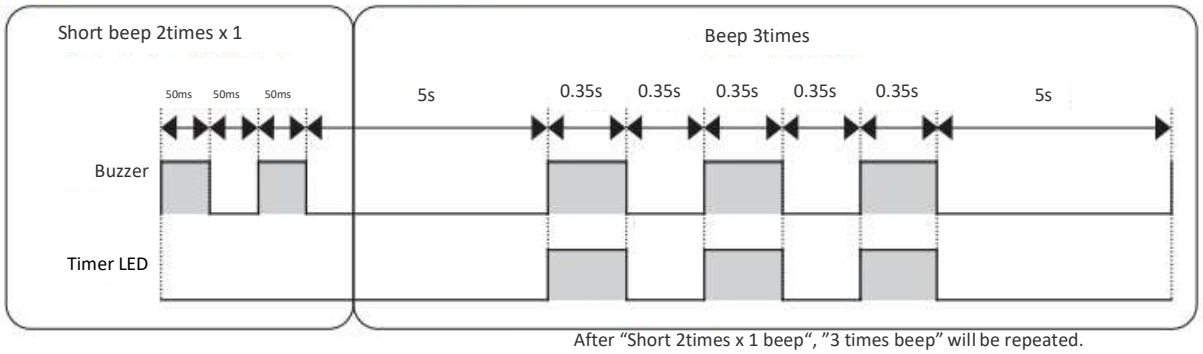
Operation lamp is blinking

Buzzer action



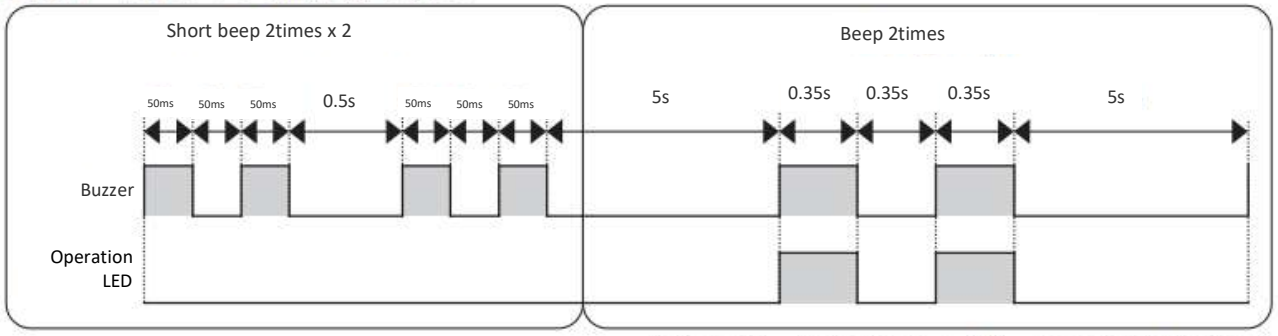
Sounding by same rhythm with LED

<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) >



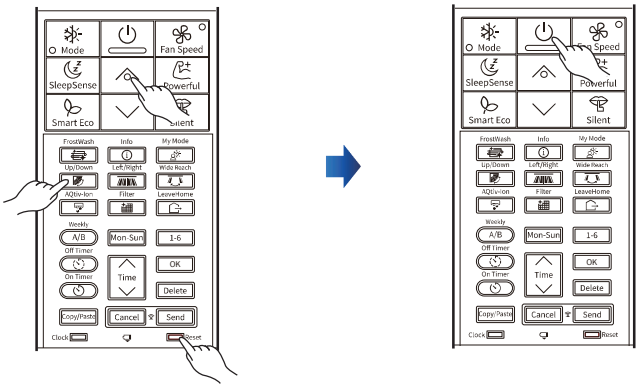
After “Short 2times x 2 beep“, ”2 times beep” will be repeated.

9.6. OTHER SETTING

- **ID SELECTION**

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.)

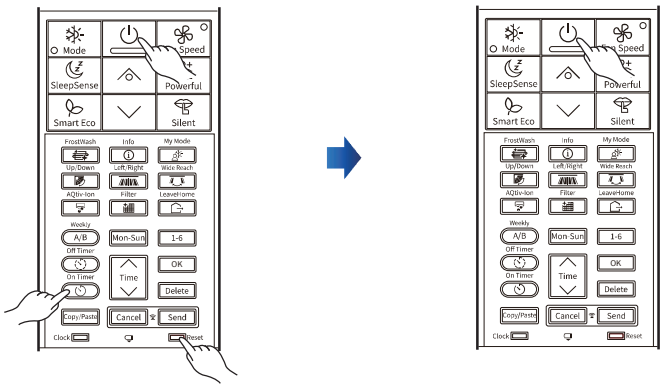


- **DISPLAY MODE**

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 thar the FAN speed icon on LCD display.
3. Press”On/Off button” toward IDU.

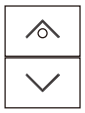
Then, the indoor unit will starts to operate independently according the selected operation mode.



9.7. ERROR CODE INFORMATION

9.7.1. HOW TO DISPLAY ERROR CODE

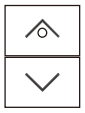
1.Press three key ([On Timer] + [Fan Speed] + [Reset]) button on the remote control for 5 seconds to avoid access by User.

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.

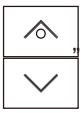
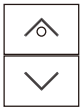
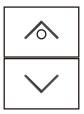
Function Name	Value	Layer1	Layer2	Layer3
		Category	Function	Value
Display self-diagnosis memory(※)	Display History 1 (Latest(newest) of last Five)	7J	t0	01
	Display History 2			02
	Display History 3			03
	Display History 4			04
	Display History 5			05

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 fault
	2 times	-	-	Outdoor unit is under forced operation
	3 times	9 times	003 00	Communication error (indoor)
	9 times	-	009 00	Indoor thermistor defective
	10 times	-	010 00	Abnormal rotating numbers of DC fan motor
	12 times	9 times	012 00	Communication error (outdoor)
	13 times	-	013 00	EEPROM data reading error
	20 times	-	020 00	Human sensor defective
	21 times	-	021 00	Interface defective (other machine cause)
	25 times	-	025 00	CN7A/B connection defective

OPERATION LAMP BLINKING		CODE	MEANING (THE FOLLOW DEFECTIVES IN OUTDOOR UNIT)
INDOOR	2 times	002 01	Peak current cut
	3 times	003 01	Compressor abnormal low speed rotation
	4 times	004 01	Compressor switching failure
	5 times	005 01	Overload lower limit cut
	6 times	006 01	OH thermistor temperature rise
	7 times	007 01	Abnormal outdoor thermistor
	9 times	009 01	Communication error
	10 times	010 01	Abnormal power source
	11 times	011 01	Fan stop for strong wind
	12 times	012 01	Fan motor fault
	13 times	013 01	EEPROM reading error
	14 times	014 01	DC Voltage abnormal
	15 times	015 01	Abnormal PWB circuit
	16 times	016 01	High load stop

9.7.2. HOW TO REMOVE ERROR CODE

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 “t2” 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, and the error code will be removed.

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.*

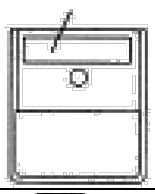
CAUTION:

– *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.*

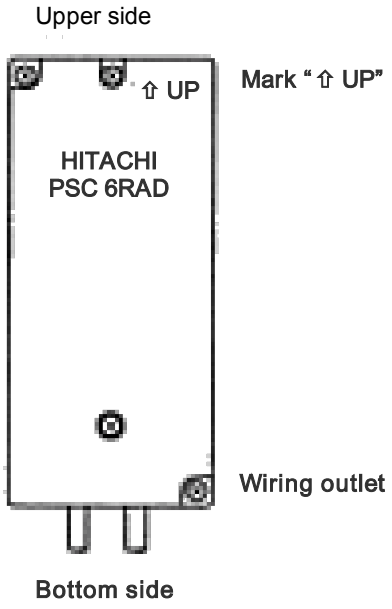
10.1.2. INSTALLATION WORK

■ **Before installation**

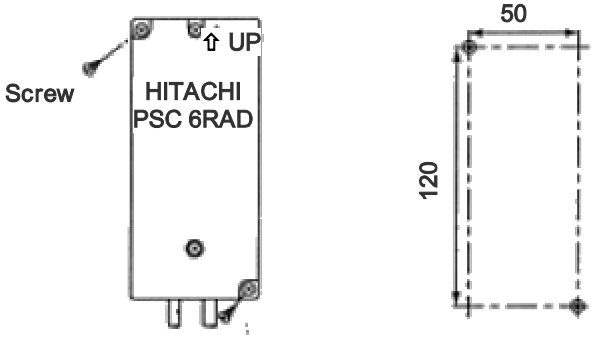
Check the contents and the number of the accessories in the packing.

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

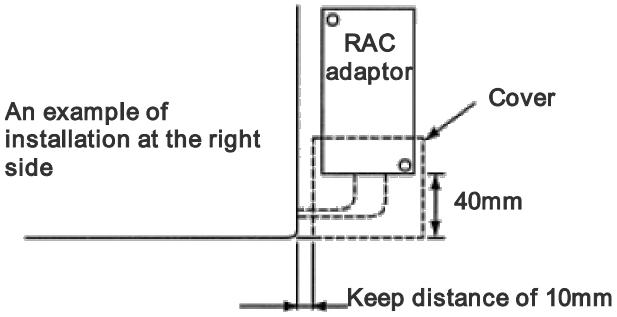
1) RAC adaptor can be installed to the wall as well as on the air conditioner itself
2) Install RAC adaptor in the vertical surface as shown below.



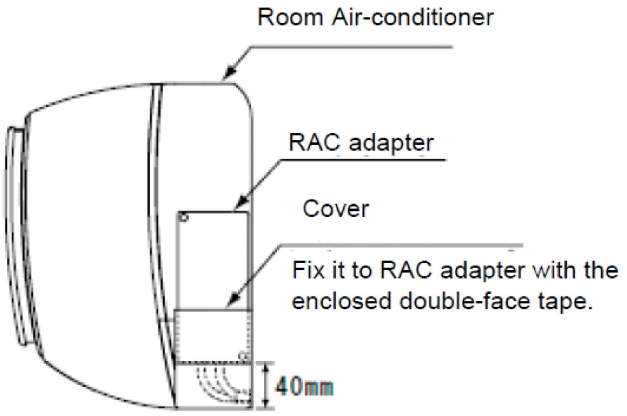
3) Installation procedure
   a) When installing to the wall.
      i) Fix the adaptor with 2 screws. Tapping screw is for metal surface, and other screw is for wooden surface.



      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).



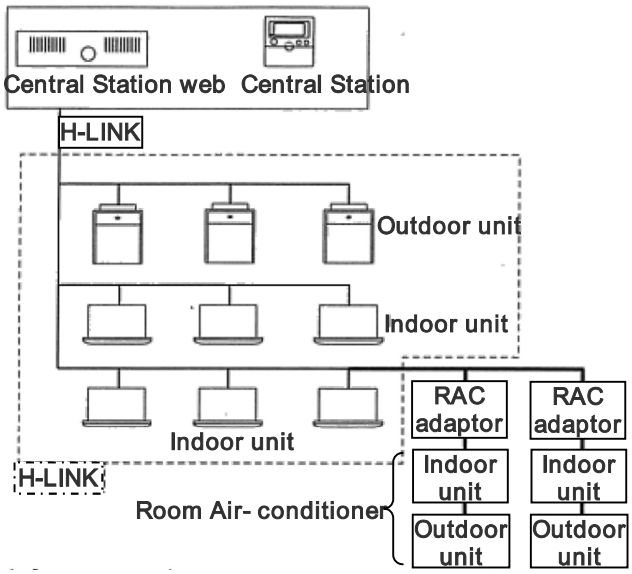
b) When installing on the room air-conditioner
In case that it cannot be installed to the wall due to the space or material problem, install the RAC adaptor with the two-sided tape (accessory) on the room air-conditioner.
   i) Confirm if the piping cover of the unit can be removed when performing the 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.*

10.1.3. 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.



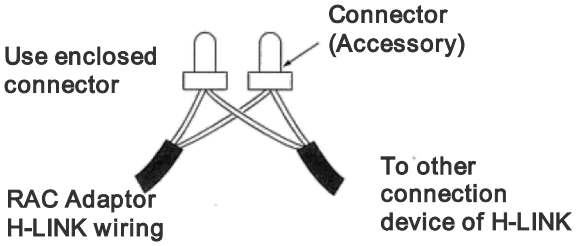
- Wiring Connection
  Connection with Room Air-Conditioner
  i) Remove the front cover of the room air-conditioner and the cover of electrical box.
  ii) The cable attached with the connector of the RAC adaptor shall be connected with the connector of indoor PCB

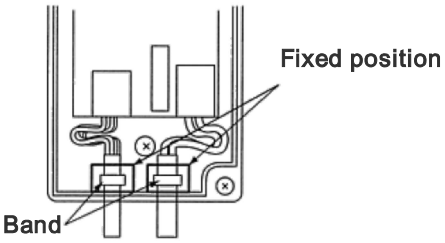
iii) Install the electrical box cover paying attention not to clamp the cable. Read the installation manual of each room air-conditioner for confirming how to connect and how to assemble the cable of the RAC adaptor.

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.

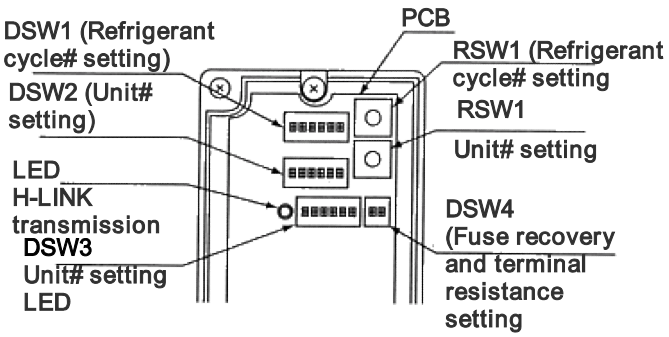




CAUTION:
– *DO NOT connect incorrect wiring. It may cause the failure of the RAC Adaptor. Especially pay attention not to apply high voltage e.g. AC400/230V.*
– *DO NOT perform the wiring work while power to the central station or the RAC Adaptor is still being supplied. It may cause malfunction. Turn 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.*

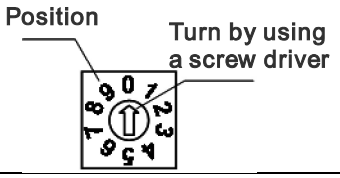
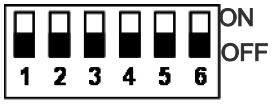
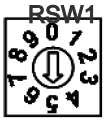
10.1.4. DIP SWITCH SETTING

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.

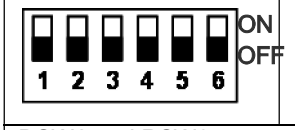
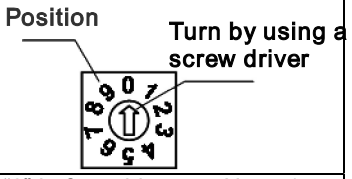
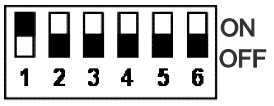
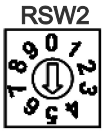


CAUTION:
– *DO NOT turn ON various pins of DSW1 and DSW2*

3) Set the refrigerant cycle# by RSW1 and DSW1

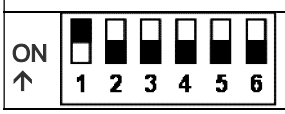
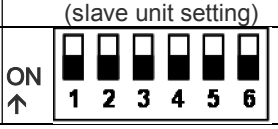
DSW1 (Ten digit)	RSW1 (Last digit)
	
DSW1 and RSW1 are set “0” before shipment. Up to 15 cycles can be set.	
E.g. Setting in Ref No. 5  No. 1 pin is OFF	 The position is Set 5

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

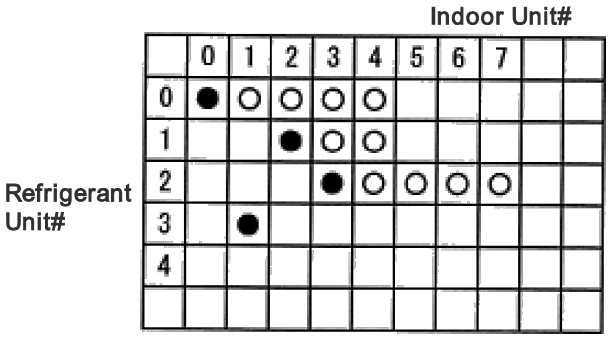
5) Slave unit.

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)

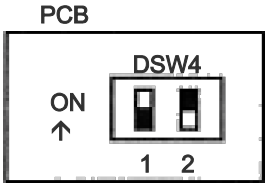


CAUTION:

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

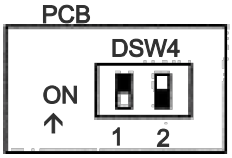
6) Procedure when applying 200V voltage to H-LINK wiring incorrectly.

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

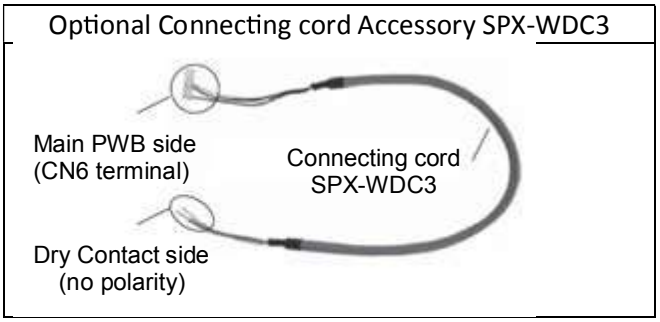
10.1.5. TEST RUN

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.

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.

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

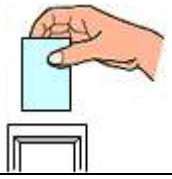
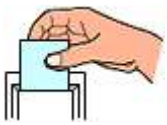
The dry contact system enables the operation of the air conditioner indoor unit to be controlled by using external dry contacts (with non voltage) such as card-key controller or window for facilities such as hotels.



- Please decide A or B type of dry contact , you can use HHRC method and more details you can refer to Page 22.

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

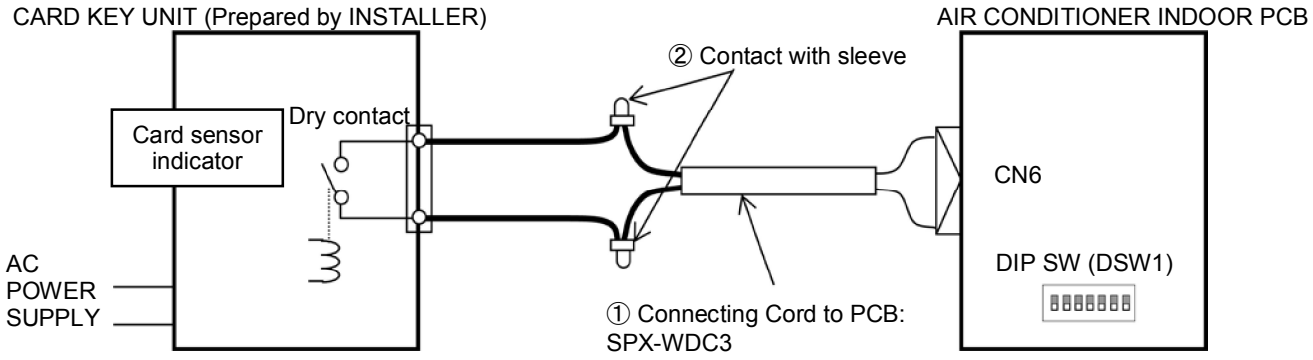
[1] CHECK DRY CONTACT OF CARD KEY UNIT

	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.

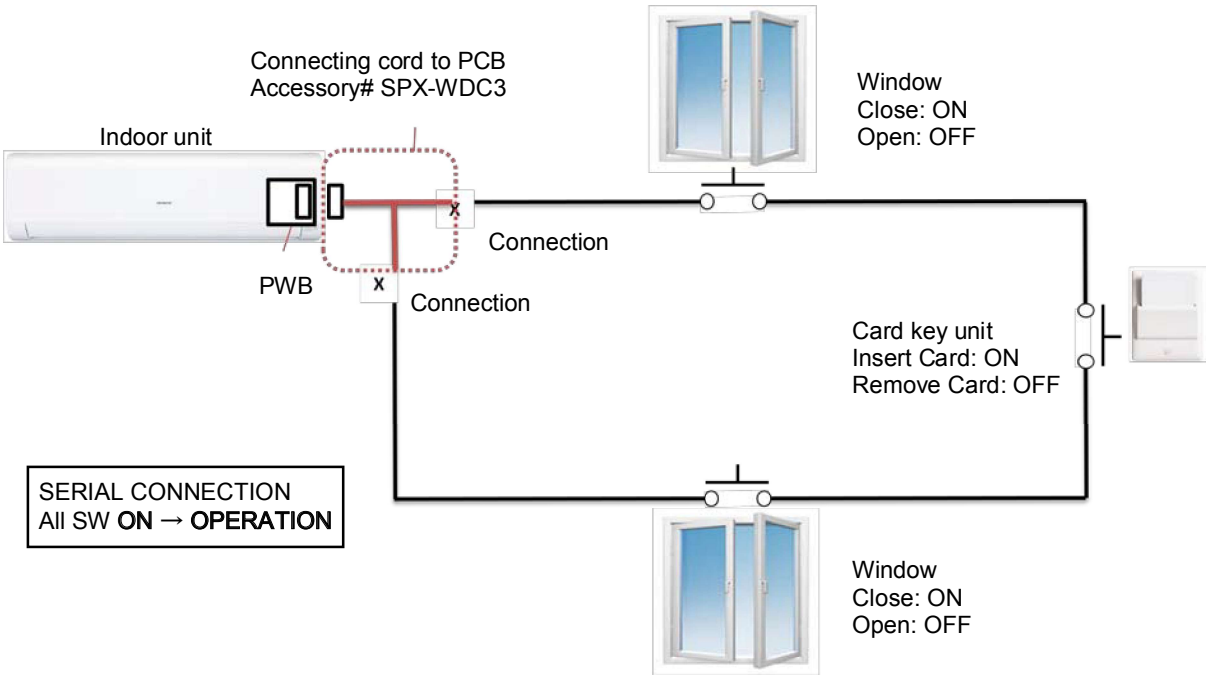
- When the CARD KEY is in insert condition, the air conditioner operation is allowable by remote controller.
- When the dry contact switch on the Card Key Unit is open (refer to diagram below for contact type a), the unit stops to operate (it takes 10 seconds to stop the unit operation after the dry 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)

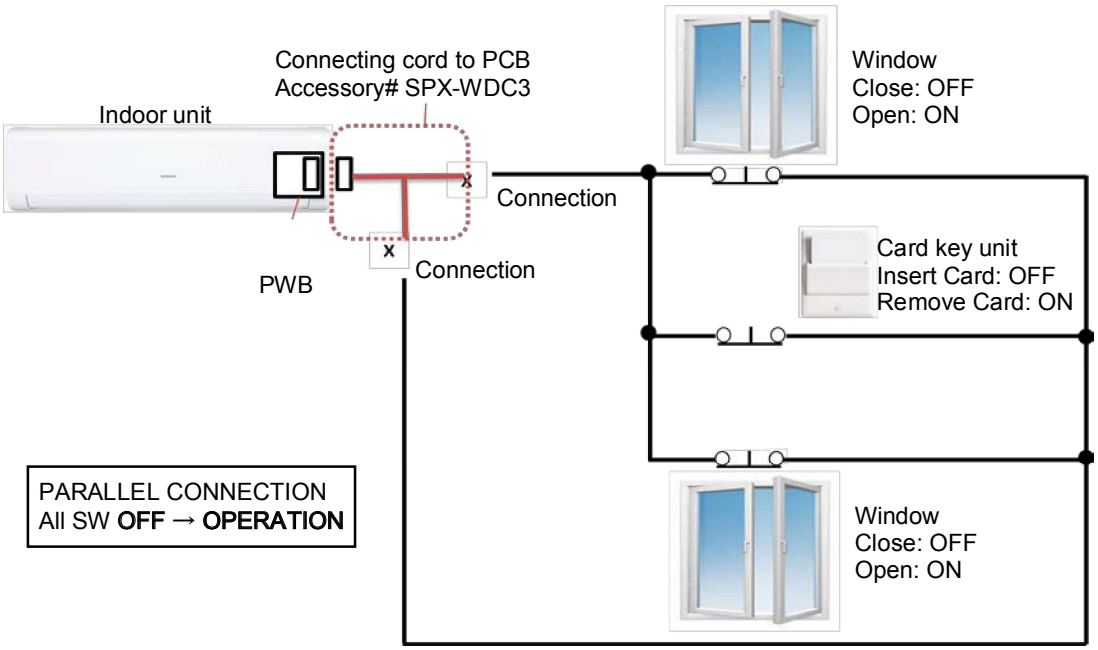


- CONNECTION EXAMPLE

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



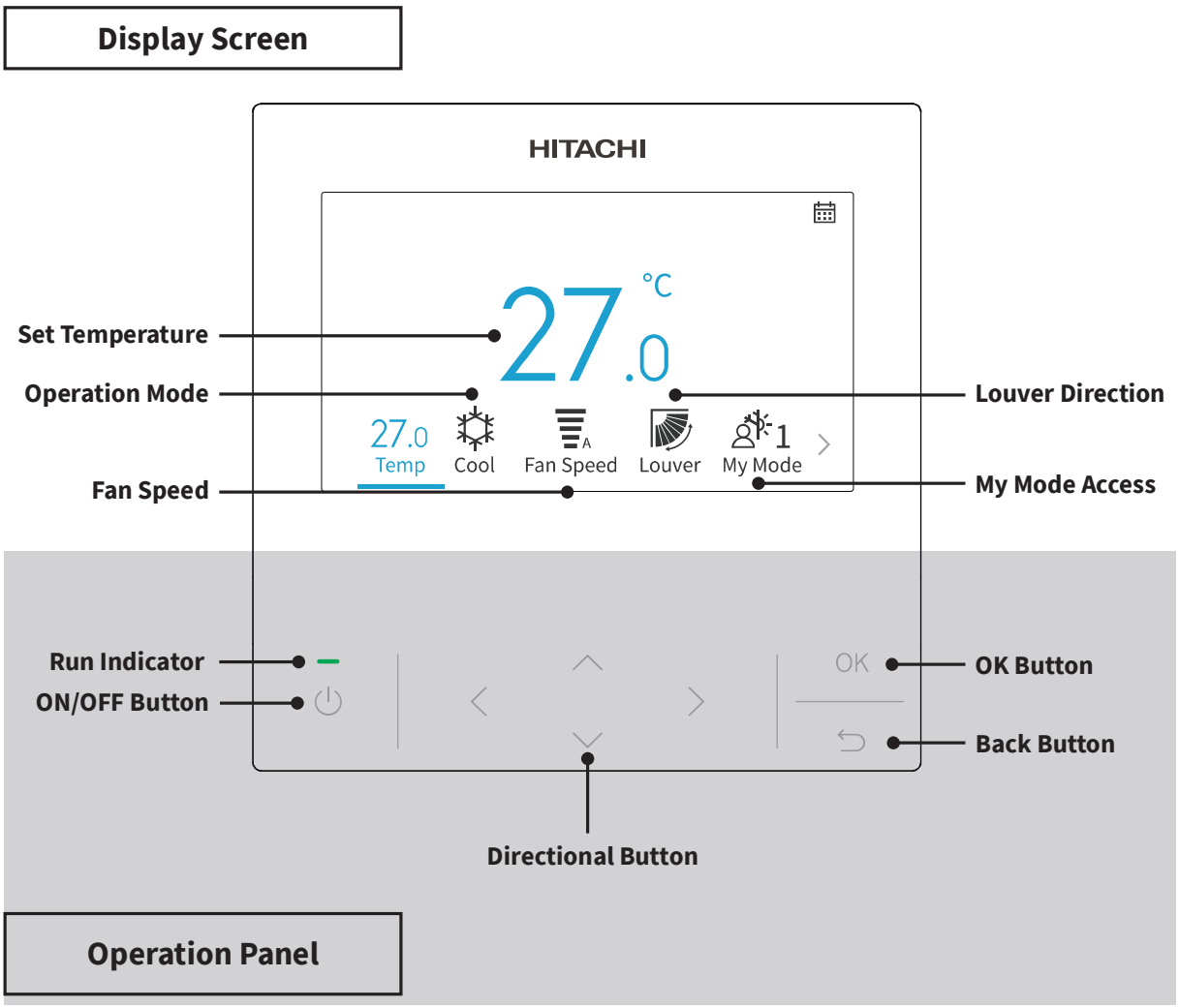
ii. Pin No. 3 of DIP SWITCH is set to ON position (LO Input Active) for Dry Contact Type b



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

10.3 Wired remote control - SPX-URFG

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



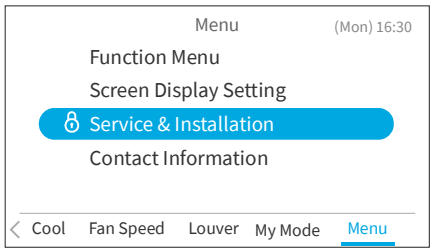
NOTES:

- 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.

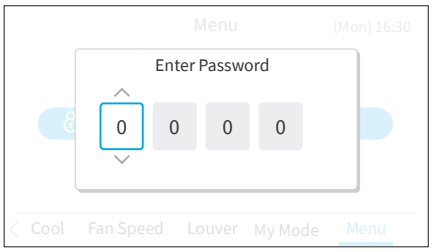
10.3.1. Service & Installation Screen

Service & Installation menu is protected by a password.

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



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

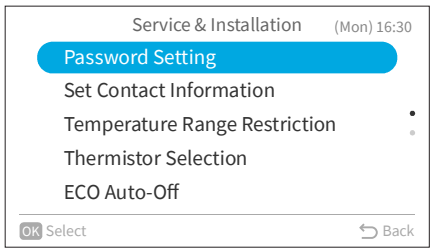


1. Password Setting

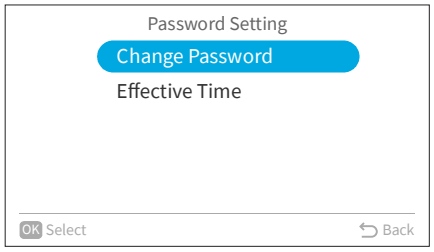
The default user password can be changed. If you forget the changed user password, a supervisor password can be used to reset the user password again. The supervisor password is "5567".
The password input effective time can be set also.
If the password input effective time has been set, then the password is required to be entered only once during the password effective time.

1. C nge Password

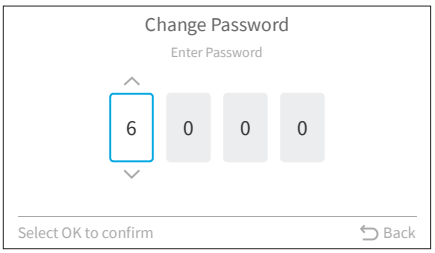
Step1. Select "Password Setting" on Service & Installation screen and press "OK".



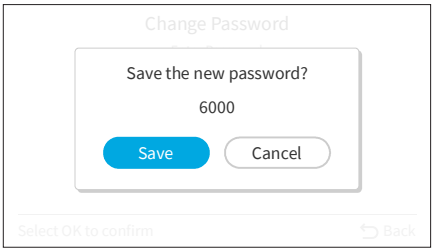
Step2. Select "Change Password" and press "OK".



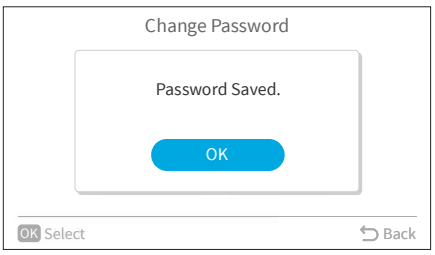
Step3. Press "∧", "∨", "<", or ">" to set the password, select "OK" and press "OK"



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



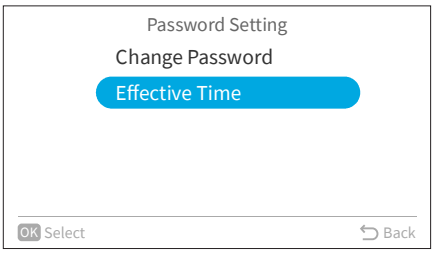
Press "OK", the new password is saved.



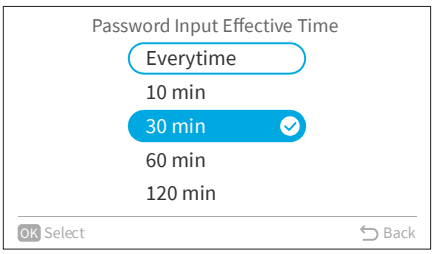
2. Set Password Input Effective Time

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

Step2. Select "Effective Time" and press "OK".



Step3. Press "∧" or "∨" 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:

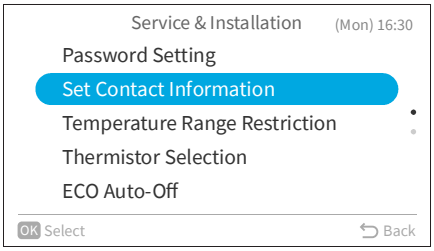
- In order to enhance the security protection, please be sure to change the default password.
- If you enter the wrong password more than 5 times, you will not be able to enter the password within 1 minute.
- The default password is "0000", and the supervisor code is "5567".
- If you forget the password,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



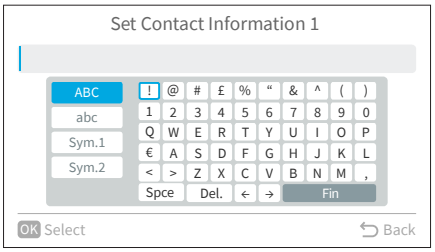
Step2. " Set Contact Information1" screen is displayed. Press "<" to move cursor to font type. Press "∧" or "∨" to select the font type.
*Each time you want to change the font type, press "<" to move the cursor back to font type.

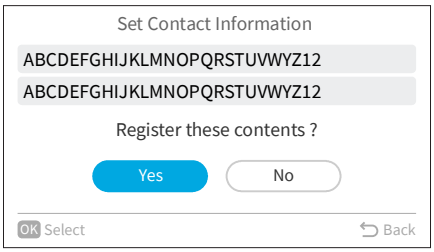
Step3. ress ">" to move cursor to the keypad. Press "∧", "∨", "<", or ">" to select the font and press "OK" to register it.(Up to 60 characters can be can be used for each contact information.)

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.



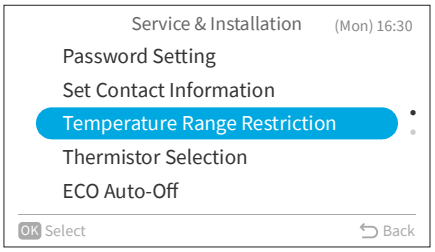


3. Temperature Range Restriction

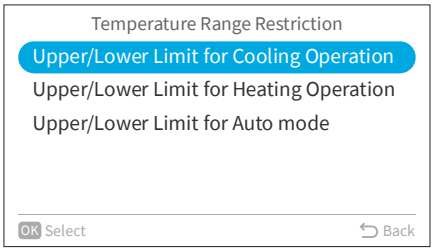
The temperature range can be set by the wired remote controller.

1. et Temperature Range

Step1. Select "Temperature Range Restriction" on the Service & Installation screen and press "OK".

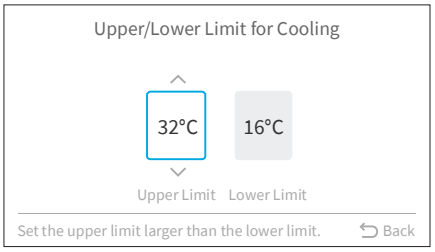


Step2. Select "Upper/Lower Limit for Cooling Operation"/"Upper/Lower Limit for Heating Operation"/ "Upper/Lower Limit for Auto mode" and press "OK".



Step3. Press "<", ">" to select the setting limit, then press "∧", "∨" to change the temperature value.

Step4. After value setting, select "OK" and press "OK". Press "⮌" to return to Step2.



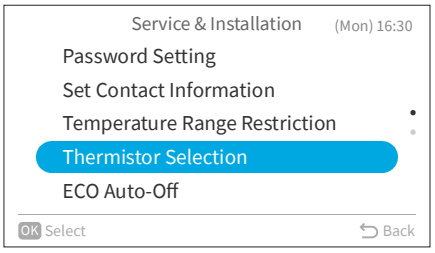
NOTE:

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

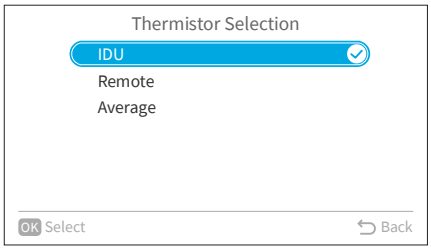
4. Thermistor Selection

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

Step1. elect "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.

5. ECO Auto-Off

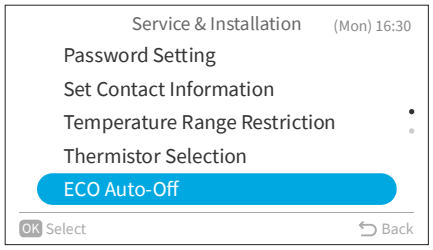
The default Auto-off time is set at 20min, it can be changed from 20min to 120min as described below. When the timer defined by "Auto-Off Timing" elapsed, wired remote controller will turn off indoor unit.

NOTE:

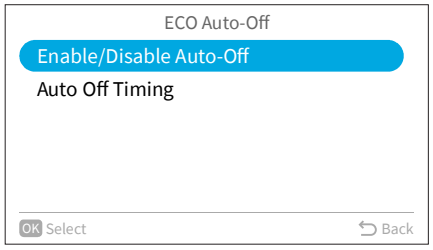
- "ECO Auto-Off" is hidden in Service & Installation screen when "ECO Mode with Auto-Off" is shown in Functions for ECO mode of Function Menu.

1. Enable/Disable Auto-Off

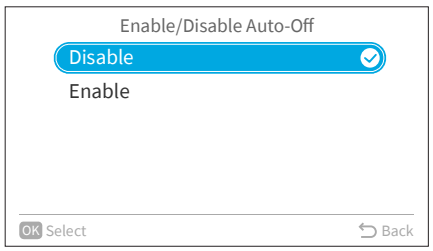
Step1. Select "ECO Auto-Off" on the Service & Installation screen and press "OK".



Step2. Select "Enable/Disable Auto-Off" and press "OK".

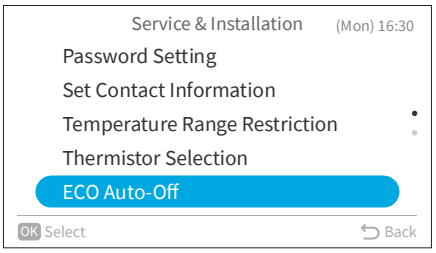


Step3. Press "∧" or "∨" to select "Disable"/"Enable" and press "OK" to enable/disable Auto-Off.

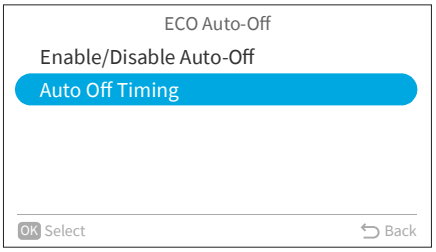


2. Set Auto-Off Timing

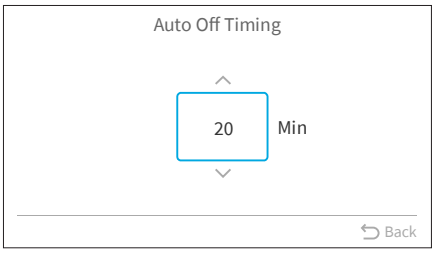
Step1. Select "ECO Auto-Off" on the Service & Installation screen and press "OK".



Step2. Press "﹀" to select "Auto-Off Timing" and press "OK"



Step3. ress "∧" or "﹀" to change the time from 20min to 120min, then press "›" to select "OK" and press "OK".

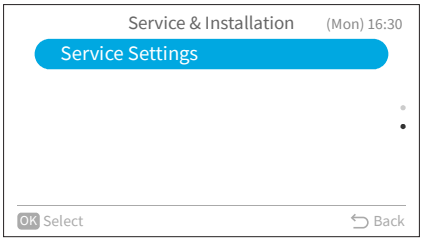


10.3.2 Service Settings

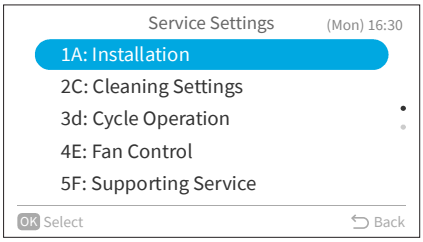
- The service setting items displayed in list depend on indoor unit model.
- When no operation for 2 hours on Service settings or sub settings screen, it returns to Home screen.
- When the air conditioner is turned on, service setting is disabled.
- For more information of service settings, please refer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

1. 1A: Installation

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

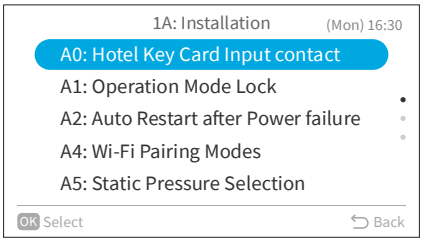


Step2. Select "1A: Installation" and press "OK"

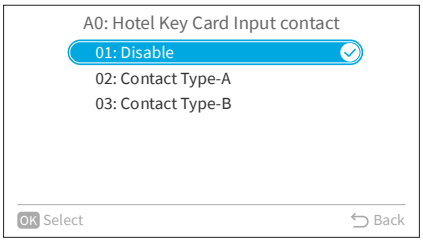


1.1 A0: Hotel Key Card Input contact

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

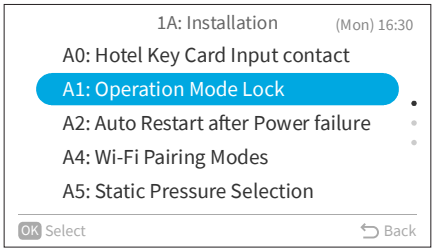


Step2. ress "∧" or "∨" to select the desired item and press "OK".

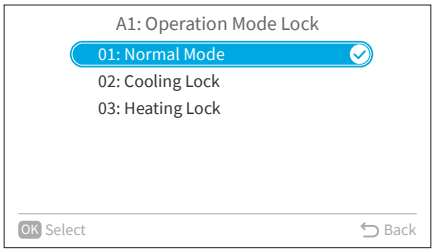


1.2 A1: Operation Mode Lock

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



Step2. Press "∧" or "∨" to select the desired item and press "OK".

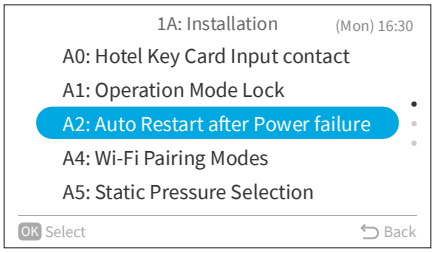


NOTE:

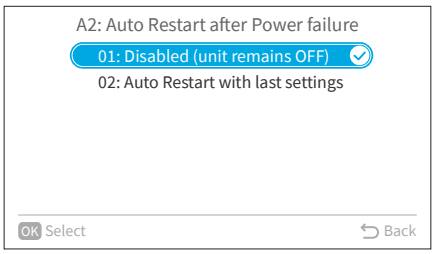
- The operation lock setting will remain unchanged after the unit is turned off.

1.3 A2: Auto Restart after Power failure

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

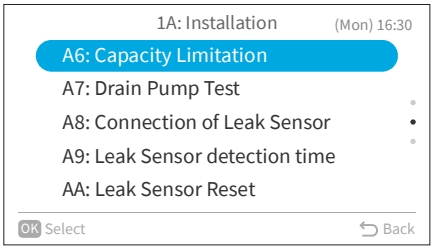


Step2. Press "∧" or "∨" to select the desired item and press "OK".

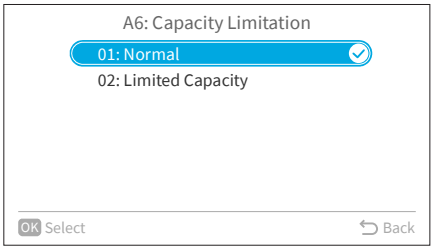


1.4 A6: Capacity Limitation (RAK-XJ18QHAE only)

Step1. Select "A6: Capacity Limitation" and press "OK".

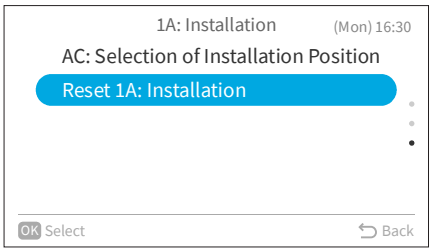


Step2. Press "∧" or "∨" to select the desired item and press "OK".

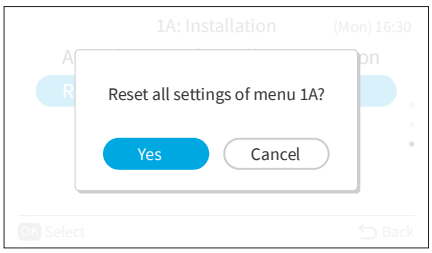


1.5 Reset 1A: Installation

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

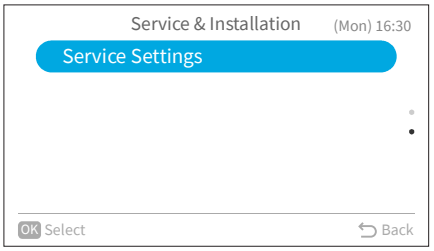


Step2. Select "Yes" and press "OK" to reset all settings of menu 1A.

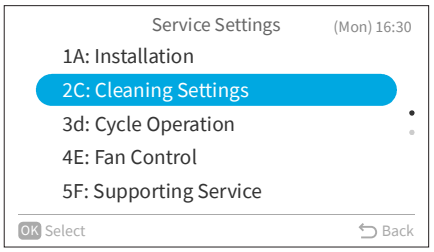


2. 2C: Cleaning Settings

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

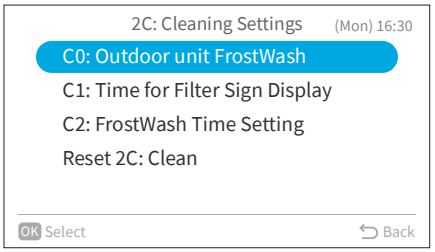


Step2. elect "2C: Cleaning Settings" and press "OK".

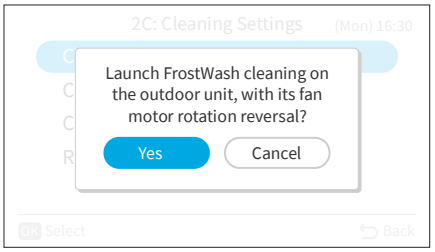


2.1 C0: Outdoor unit FrostWash

Step1. Select "C0: Outdoor unit FrostWash" and press "OK".

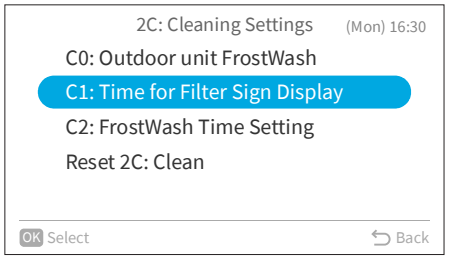


Step2. Select "Yes" and press "OK" to launch Frostwash cleaning.

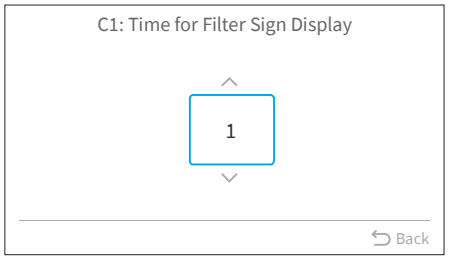


2.2 C1: Time for Filter Sign Display

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

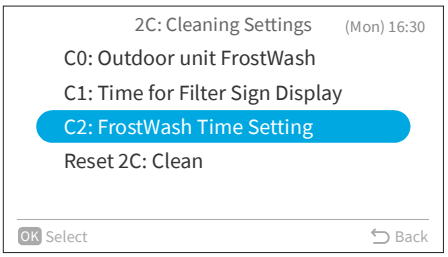


Step2. ress "∧" or "∨" to change the temperature, then press ">" to select "OK" and press "OK"

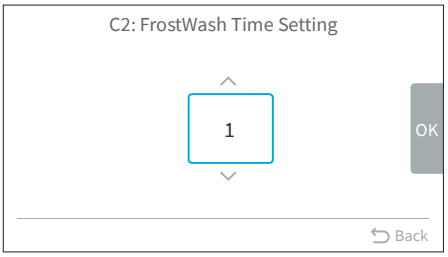


2.3 C2: FrostWash Time Setting

Step1. Select "C2: FrostWash Time Setting" and press "OK".

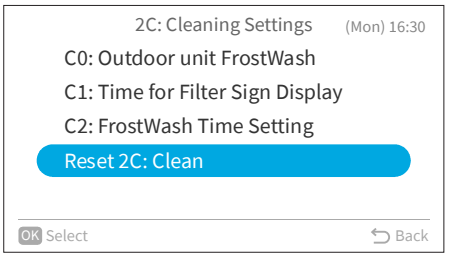


Step2. Press "∧" or "∨" to change the FrostWash time, then press ">" to select "OK" and press "OK"

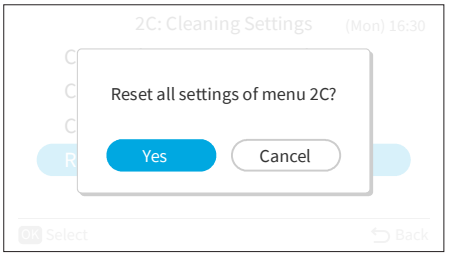


2.4 Reset 2C: Clean

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

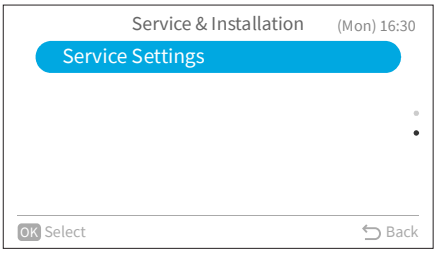


Step2. Select "Yes" and press "OK" to reset all settings of menu 2C.

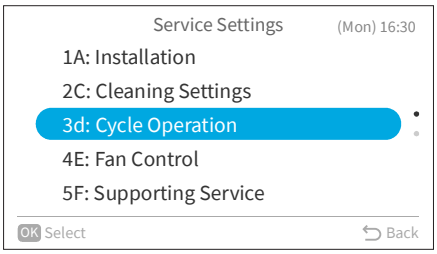


3. 3d: Cycle Operation

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

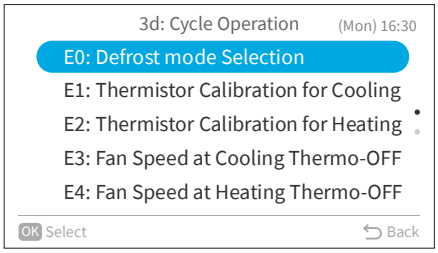


Step2. Select "3d: Cycle Operation" and press "OK".

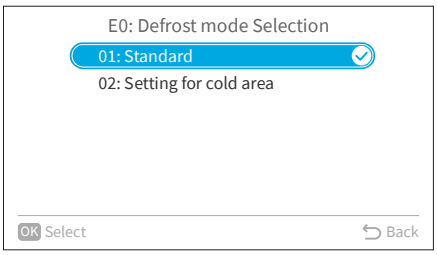


3.1 E0: Defrost Selection Function

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

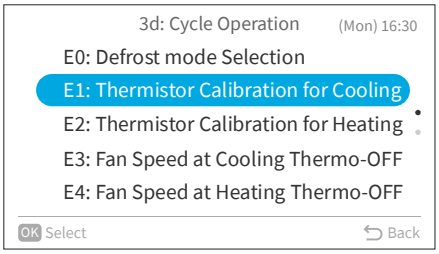


Step2. Press "∧" or "∨" to select the desired item and press "OK".

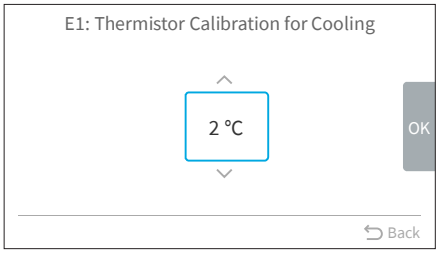


3.2 E1: Thermistor Calibration for Cooling

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

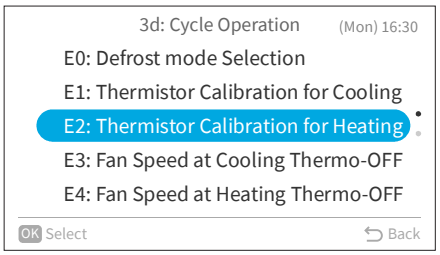


Step2. Press "∧" or "∨" to change the temperature, then press ">" to select "OK" and press "OK".

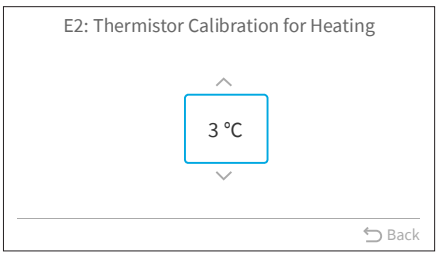


3.3 E2: Thermistor Calibration for Heating

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

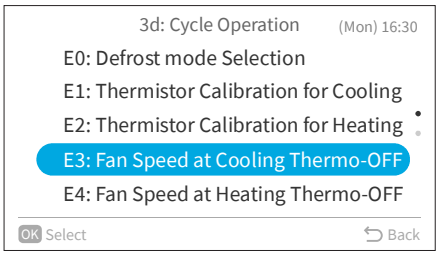


Step2. Press "∧" or "∨" to change the temperature, then press ">" to select "OK" and press "OK"

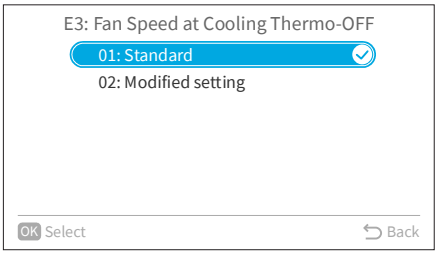


3.4 E3: Fan Speed at Cooling Thermo-OFF

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

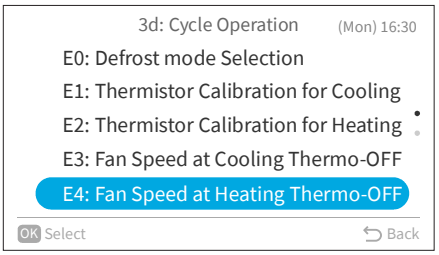


Step2. Press "∧" or "∨" to select the desired item and press "OK".

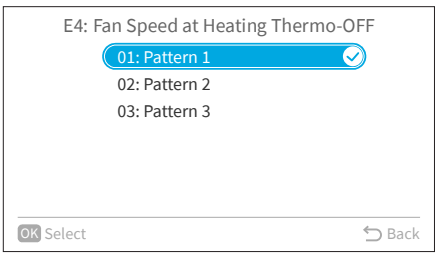


3.5 E4: Fan Speed at Heating Thermo-OFF

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

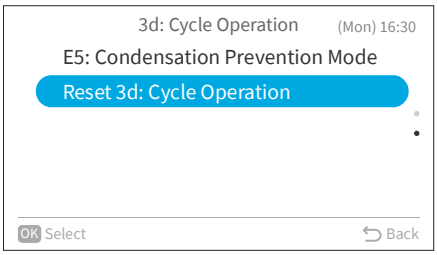


Step2. ress "∧" or "∨" to select the desired item and press "OK".

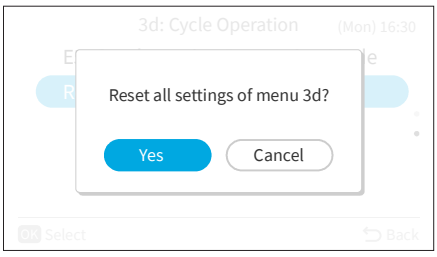


3.6 Reset 3d: Cycle Operation

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

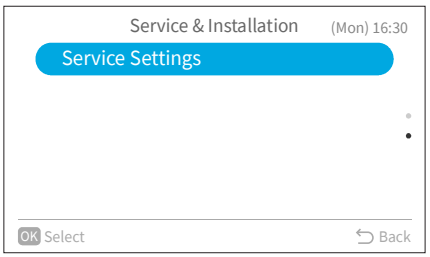


Step2. Select "Yes" and press "OK" to reset all settings of menu 3d.

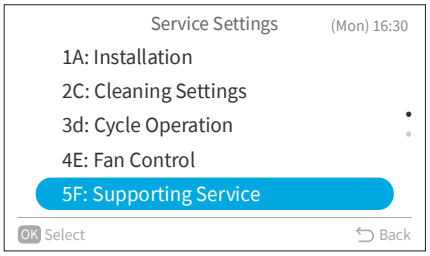


4. 5F: Supporting Service

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

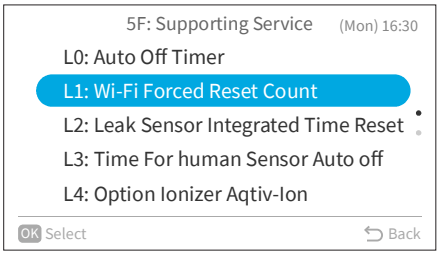


Step2. Select "5F: Supporting Service" and press "OK".

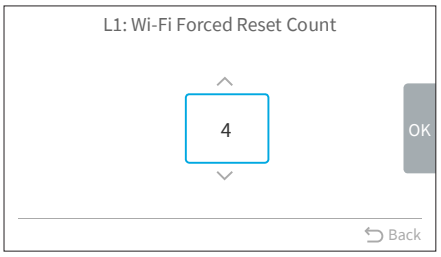


4.1 L1: Wi-Fi Forced Reset Count

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

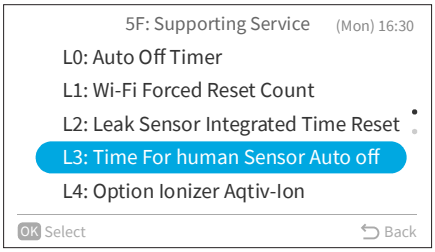


Step2. Press "∧" or "∨" to change the reset count, then press ">" to select "OK" and press "OK".

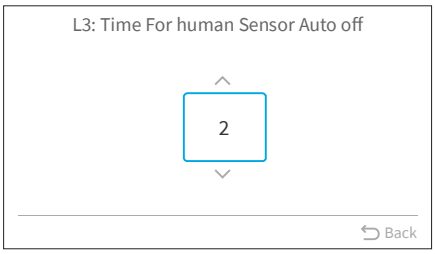


4.2 L3: Time For human Sensor Auto off

Step1. Select "L3: Time For human Sensor Auto off" and press "OK"

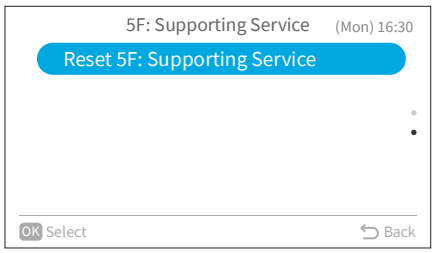


Step2. Press "∧" or "∨" to change the time, then press ">" to select "OK" and press "OK"

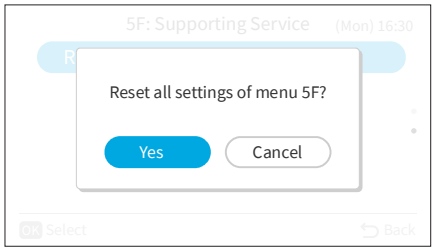


4.3 Reset 5F: Supporting Service

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

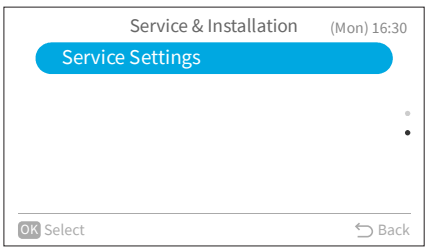


Step2. Select "Yes" and press "OK" to reset all settings of menu 5F.

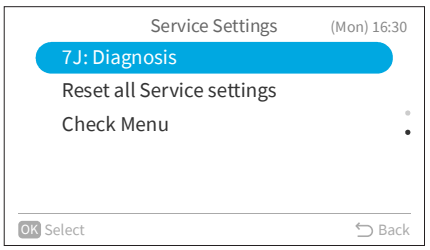


5. 7J: Diagnosis

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

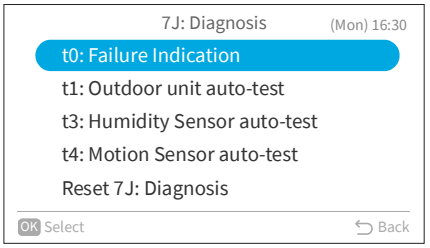


Step2. Select "7J: Diagnosis" and press "OK".

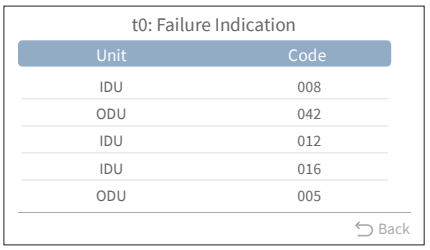


5.1 t0: Failure Indication

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

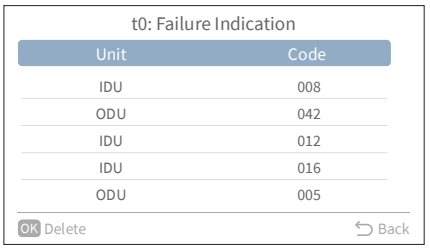


Step2. T e failure indication screen is shown.

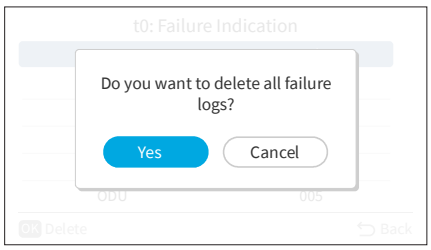


NOTE:

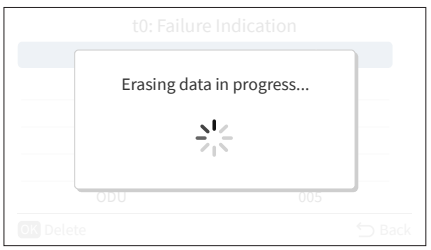
- Second time to go to t0 after indoor unit and wired remote controller is powered on: Failure indication screen with a "Delete".



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

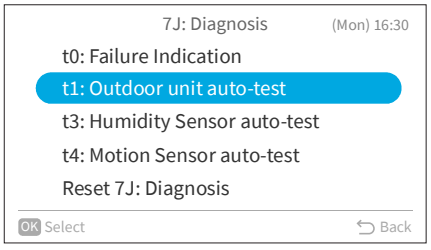


Step4. After completing erasing, it turns to home screen.

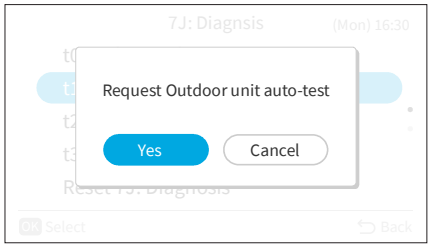


5.2 t1: Outdoor unit auto-test (Display ODU self cheak)

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

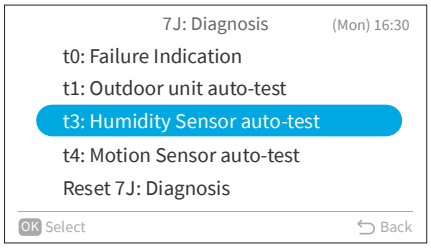


Step2. Select "Yes" and press "OK" to request outdoor unit auto-test.

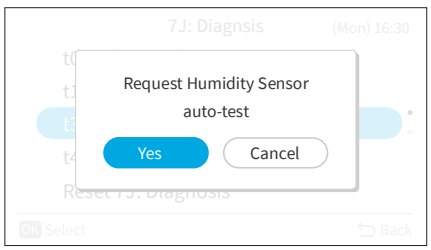


5.3 t3: Humidity Sensor auto-test (Humidity Sensor failure diagnosis)

Step1. Select "t3: Humidity Sensor auto-test" and press "OK".

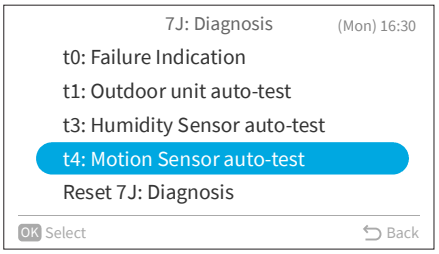


Step2. elect "Yes" and press "OK" to request humidity sensor auto-test.

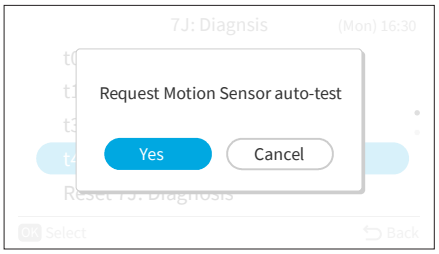


5.4 t4: Motion Sensor auto-test (Humidity Sensor failure diagnosis)

Step1. Select "t4: Motion Sensor auto-test" and press "OK".

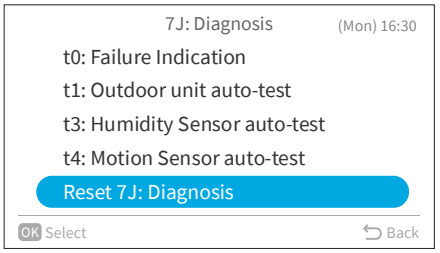


Step2. Select "Yes" and press "OK" to request motion sensor auto-test.

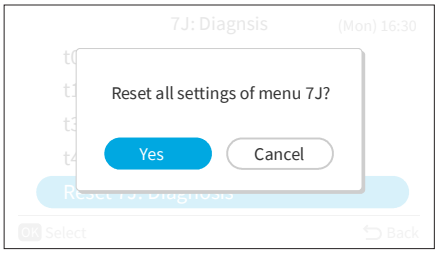


5.5 Reset 7J: Diagnosis

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

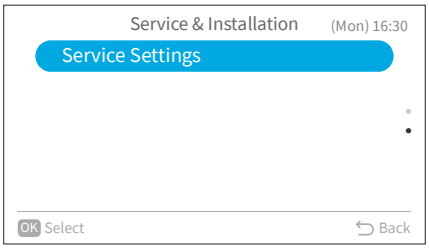


Step2. Select "Yes" and press "OK" to reset all settings of menu 7J.

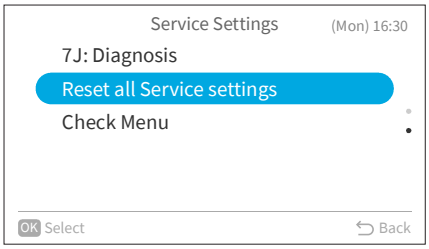


6. Reset All Service Settings

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



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

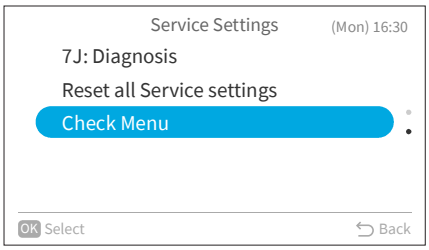


7. Check Menu

This menu displays various statuses of the air conditioner.

1. Enter Check Menu

Step1. Select "Check Menu" on the "Service Settings" screen and press "OK".



Each "Check Menu" item and its function is explained in the following table.

Item	Function
Remote controller auto-test	The wired remote controller checkout process begins and various settings initialize.
Alarm History Display *	Previous alarm history data including date, time, indoor unit number, and alarm code is displayed. (30 Max) The alarm history can be deleted.*

* Press "OK" while the alarm history is displayed, the confirmation screen for deleting the alarm history is displayed. Select "Yes" and press "OK" to delete the alarm history.

HITACHI

TC-ERP-Model

INDOOR	OUTDOOR
RAK-XJ25RHAE	RAC-XJ25WHAE
RAK-XJ35RHAE	RAC-XJ35WHAE
RAK-XJ50RHAE	RAC-XJ50WHAE