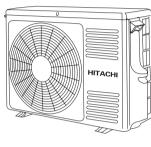
HITACHI

SERVICE MANUAL TECHNICAL INFORMATION

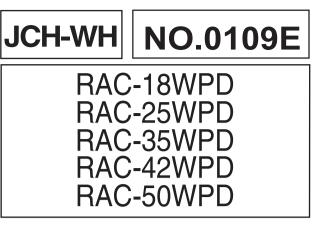
FOR SERVICE PERSONNEL ONLY

OUTDOOR UNIT

RAC-18WPD RAC-25WPD RAC-35WPD







REFER TO THE FOUNDATION MANUAL

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SPECIFICATIONS

TYPE					DC INVERTER		
		OUTDOOR UNIT	OUTDOOR UNIT	OUTDOOR UNIT	OUTDOOR UNIT	OUTDOOR UNIT	
MODEL	DEL		RAC-18WPD	RAC-25WPD	RAC-35WPD	RAC-42WPD	RAC-50WPD
POWER SO	URCE		1 PHASE,50Hz,220-230V	1 PHASE,50Hz,220-230V	1 PHASE,50Hz,220-230V	1 PHASE,50Hz,220-230V	1 PHASE,50Hz,220-230V
	TOTAL INPU	(W) TU	419 (250~1,010)	549 (250~1,290)	941 (250~1,460)	1,120 (300~1,700)	1,471 (300~2,100)
COOLING	TOTAL AMP	PERES (A)	2.46-2.35	3.08-2.95	4.81-4.60	5.10-4.88	6.69-6.40
	CAPACITY (KW)		ADACITY (KW) 2.00 (0.90~2.5) 2.50 (0.90~3.10) 3.50 (0.		3.50 (0.90~4.00)	4.20 (1.70~5.00)	5.00 (1.90~5.20)
		(B.T.U./h)	6,820 (3,070~8,530)	8,530 (3,070 ~10,580)	580) 11,940 (3,070~13,650) 14,330 (5,800~17,060)		17,060 (6,480~17,740)
	TOTAL INPL	(W) TU	519 (250~970)	733 (250~1500)	1,000 (250~1,700)	1,317 (500~2,100)	1,558 (500~2,750)
HEATING	TOTAL AMP	PERES (A)	2.93-2.81	3.87-3.71	5.11-4.89	5.99-5.73	7.09-6.78
-	CAPACITY	(KW)	2.50 (0.90~3.20)	3.40 (0.90~4.40)	4.20 (0.90~5.00)	5.40 (1.70~6.00)	6.00 (2.20~7.30)
		(B.T.U./h)	8,530 (3,070 ~10,920)	11,600 (3,070~15,010)	14,330 (3,070~17,060)	18,430 (5,800~20,470)	20,470 (7,510~24,910)
		W	750(+65)**	750(+65) [%]	750(+65)*	792(+85) [%]	792(+85)**
DIMENSION (mm)	S	Н	548	548	548	600	600
		D	288(+27.5)**	288(+27.5)**	288(+27.5) [*]	299(+47) [%]	299(+47) [%]
NET WEIGH	IT		32.5	32.5	32.5	39	39

* After installation

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

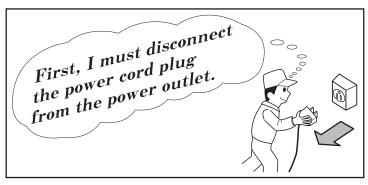
ROOM AIR CONDITIONER

OUTDOOR UNIT

Johnson Controls-Hitachi Air Conditioning Wuhu Co., Ltd.

SAFETY DURING REPAIR WORK

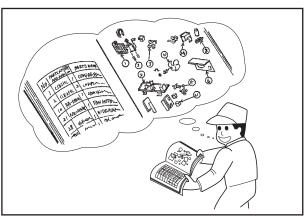
 In order to disassemble and repair the unit in question, be sure to disconnect the power cord plug from the power outlet before starting the work.



2. If it is necessary to replace any parts, they should be replaced with respective genuine parts for the unit, and the replacement must be effected in correct manner according to the instructions in the Service Manual of the unit.

If the contacts of electrical parts are defective, replace the electrical parts without trying to repair them

- 3. After completion of repairs, the initial state should be restored.
- 4. Lead wires should be connected and laid as in the initial state.
- 5. Modification of the unit by the user himself should absolutely be prohibited.



- 6. 'ools and measuring instruments for use in repairs or inspection should be accurately calibrated in advance.
- 7. In installing the unit having been repaired, be careful to prevent the occurrence of any accident such as electrical shock, leak of current, or bodily injury due to the drop of any part.
- 8. 'o check the insulation of the unit, measure the insulation resistance between the power cord plug and grounding terminal of the unit.
 The insulation resistance should be 1MΩ or more as measured by a 500V DC megger.
- The initial location of installation such as window, floor or the other should be checked for being safe enough to support the repaired unit again.
 If it is found not so strong and safe, the unit should be installed at the initial location after reinforced or
- 10. Any inflammable object must not be placed about the location of installation.

at a new location.

11. Check the grounding to see whether it is proper or not, and if it is found improper, connect the grounding terminal to the earth.



WORKING STANDARDS FOR PREVENTING BREAKAGE OF SEMICONDUCTORS

1. Scope

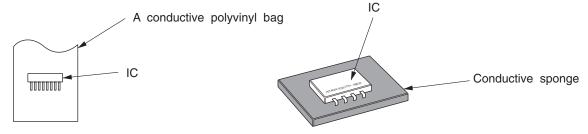
The standards provide for items to be generally observed in carrying and handling semiconductors in relative manufactures during maintenance and handling thereof. (They apply the same to handling of abnormal goods such as rejected goods being returned.)

2. Object parts

- (1) Microcomputer
- (2) Integrated circuits (I.C.)
- (3) Field effective transistor (F.E.T.)
- (4) P.C. boards or the like to which the parts mentioned in (1) and (2) of this paragraph are equipped.

3. Items to be observed in handling

(1) Use a conductive container for carrying and storing of parts. (Even rejected goods should be handled in the same way.)





- (2) When any part is handled uncovered (in counting, packing and the like), the handling person must always use himself as a body earth. (Make yourself a body earth by passing one M ohm earth resistance through a ring or bracelet.)
- (3) Be careful not to touch the parts with your clothing when you hold a part even if a body earth is being taken.
- (4) Be sure to place a part on a metal plate with grounding.
- (5) Be careful not to fail to turn off power when you repair the printed circuit board. At the same time, try to repair the printed circuit board on a grounded metal plate.

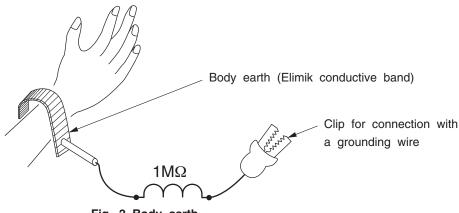


Fig. 2 Body earth

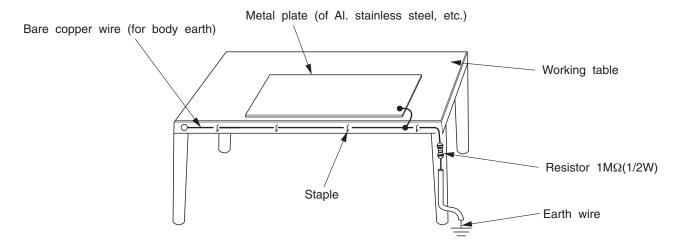


Fig.3 Grounding of the working table

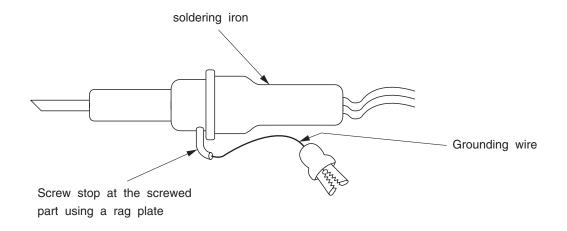


Fig.4 Grounding a solder iron

Use a high insulation mode (100V, 10M $\!\Omega$ or higher) when ordinary iron is to be used.

(7) In checking circuits for maintenance, inspection, or some others, be careful not to have the test probes of the measuring instrument short circuit a load circuit or the like.

- 1. In quiet or stop operation, slight flowing noise of refrigerant in the refrigerating cycle is heard occasionally, but this noise is not abnormal for the operation.
- 2. When it thunders near by, it is recommend to stop the operation and turn off the circuit breaker for safety.
- 3. In the event of power failure, the room air conditioner will restare automatically in the previously selected mode once the power is restored. In the event of power failure during TIMER operation, the room air comditioner will not start automatically. Re-press ON/OFF button after 3 minutes from when the unit off or power recovery.
- 4. If the room air conditioner is stopped by adjusting thermostat, or missoperation, and re-start in a moment, there is occasion that the cooling and heating operation does not start for 3 minutes, it is not abnormal and this is the result of the operation of IC delay circuit. This IC delay circuit ensures that there is no danger of blowing fuse or damaging parts even if operation is restarted accidentally.
- This room air conditioner should not be used at the cooling operation when the outside temperature is below -10°C (14°F).
- This room air conditioner (the reverse cycle) should not be used when the outside temperature is below -15°C (5°F).
 If the reverse cycle is used under this condition, the outside heat exchanger is frosted and efficiency falls.
- 7. When the outside heat exchanger is frosted, the frost is melted by operating the hot gas system, it is not trouble that at this time fan stops and the vapour may rise from the outside heat exchanger.

SPECIFICATIONS

MODEL		RAC-18/25/35WPD	RAC-42/50WPD				
FAN MOTOR		47W (DC120~380V)					
FAN MOTOR CAPACITOR		NO					
FAN MOTOR PROTECTOR		NO					
COMPRESSOR		GSD088SKQA6JK6	GTD130UKQA8JT6				
COMPRESSOR MOTOR CAP	ACITOR	NO	I				
OVERLOAD PROTECTOR		YES(INTEF	RNAL)				
OVERHEAT PROTECTOR		YES					
FUSE (for MICROPROCESSC	PR)	15A, 2A, 3A, 3.15A	25A, 2A, 3A, 3.15A				
POWER RELAY		HF161F					
POWER SWITCH		NO					
TEMPORARY SWITCH		NO					
SERVICE SWITCH		YES					
TRANSFORMER		YES					
VARISTOR		TVR10471,ERZVA9V431					
NOISE SUPPRESSOR		YES					
THERMOSTAT		YES(IC)					
REMOTE CONTROL SWITCH CRYSTAL)	(LIQUID	NO					
REFRIGERANT CHARGING	UNIT	870g	1050g				
VOLUME (Refrigerant R32)	PIPES (MAX. 20m) (MIN. 3m)	WITHOUT REFRIGERANT BECAUSE COUPLING IS FLARE TYPE.					

Figure showing the installation of Outdoor unit



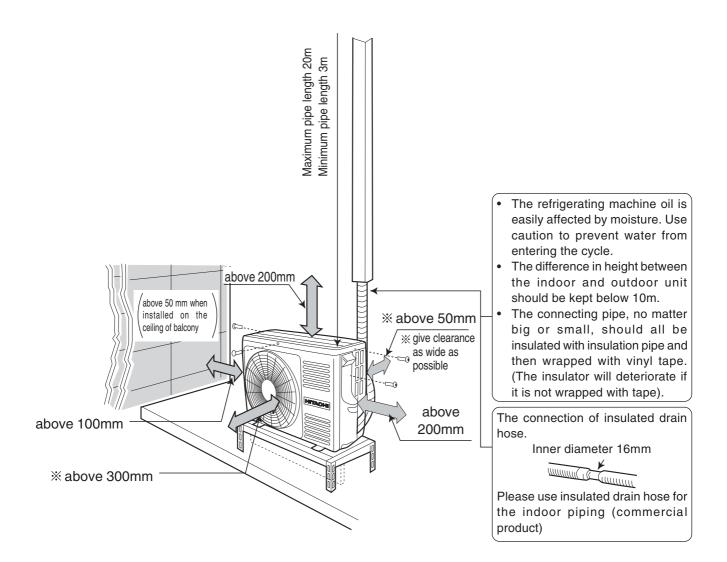
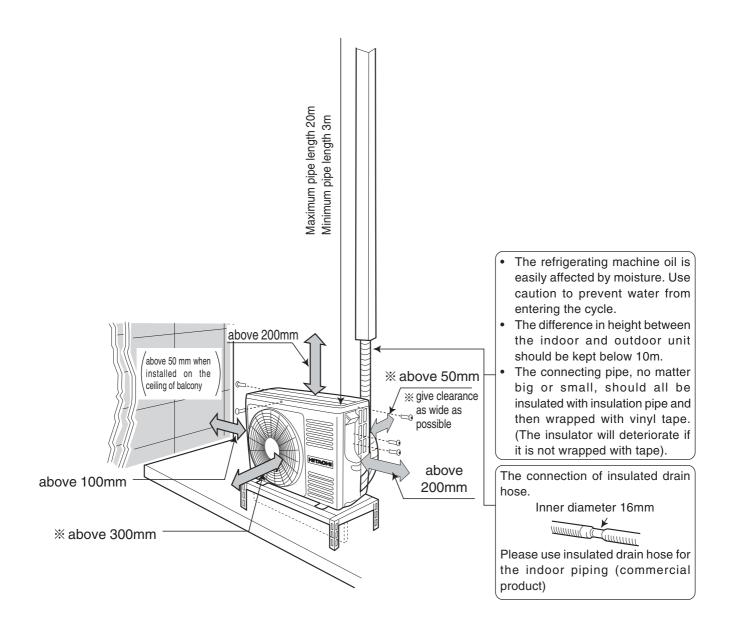


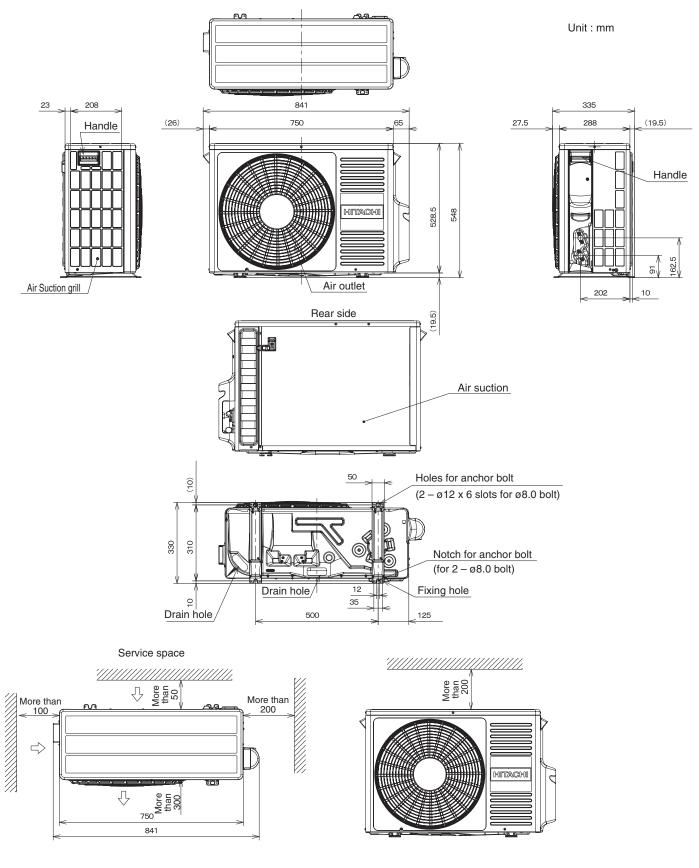
Figure showing the installation of Outdoor unit

MODEL RAC-42WPD RAC-50WPD



CONSTRUCTION AND DIMENSIONAL DIAGRAM

MODEL RAC-18/25/35WPD OUTDOOR UNIT



NOTE:

1. For outdoor unit installation , allow at least 2 sides of space around the unit ensure ventilation flue.

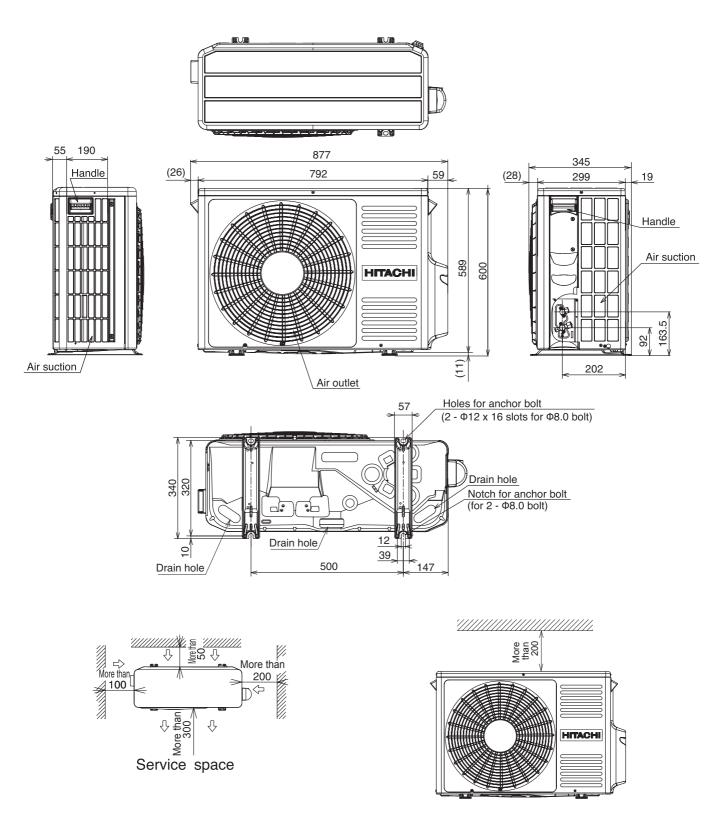
2. The connecting pipe , should all the insulated with insulation pipe.

3.Piping length is within 20m.

4. Height different of the piping between the indoor unit and outdoor unit should be within 10m.

CONSTRUCTION AND DIMENSIONAL DIAGRAM

MODEL RAC-42/50WPD OUTDOOR UNIT



NOTE:

- 1.For outdoor unit installation, allow at least 2 sides of space around the unit ensure ventilation flue. 2. The connecting pipe, should all the insulated with insulation pipe.
- 3.Piping length is within 20m.
- 4. Height different of the piping between the indoor unit and outdoor unit should be within 10m.

MAIN PARTS COMPONENT

THERMOSTAT (Room temperature Thermistor)

FAN MOTOR

Fan Motor Specifications

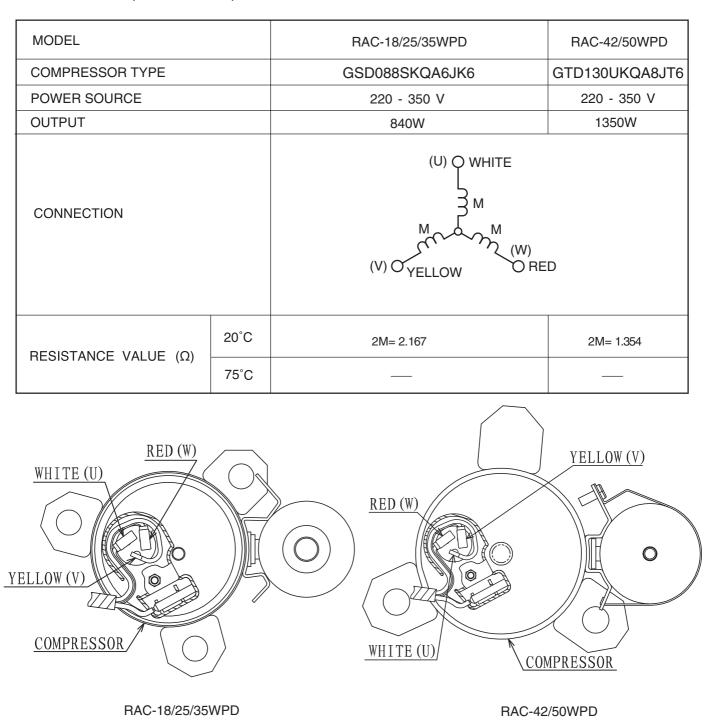
MODEL		RAC-18/25/35/42/50WPD							
POWER SOURCE	DC : 120 - 380V								
OUTPUT	47W								
CONNECTION	RED(I	J) O BLK(W)							
BLU : BLUE GRY : GRAY BLK : BLACK	YEL : YELLOW ORN : ORANGE PNK : PINK	BRN : BROWN GRN : GREEN VIO : VIOLET	WHT : WHITE RED : RED						

MAIN ELECTRIC COMPONENTS FOR OUTDOOR UNIT

PARTS NAME	RESISTANCE VALUE(Ω)	APPLICABLE MODELS
COIL(REVERSING VALVE)	2780Ω (0)°C	RAC-18/25/35/42/50WPD
COIL(EXPANSION VALVE)	46 Ω/PHASE (AT 20 °C)	RAC-18/25/35/42/50WPD
REACTOR	15 (mH) 226 mΩ MAX (20 °C)	RAC-18/25/35WPD
	5.3 (mH) 67 m Ω MAX (20 °C)	RAC-42/50WPD

COMPRESSOR MOTOR

Compressor Motor Specifications



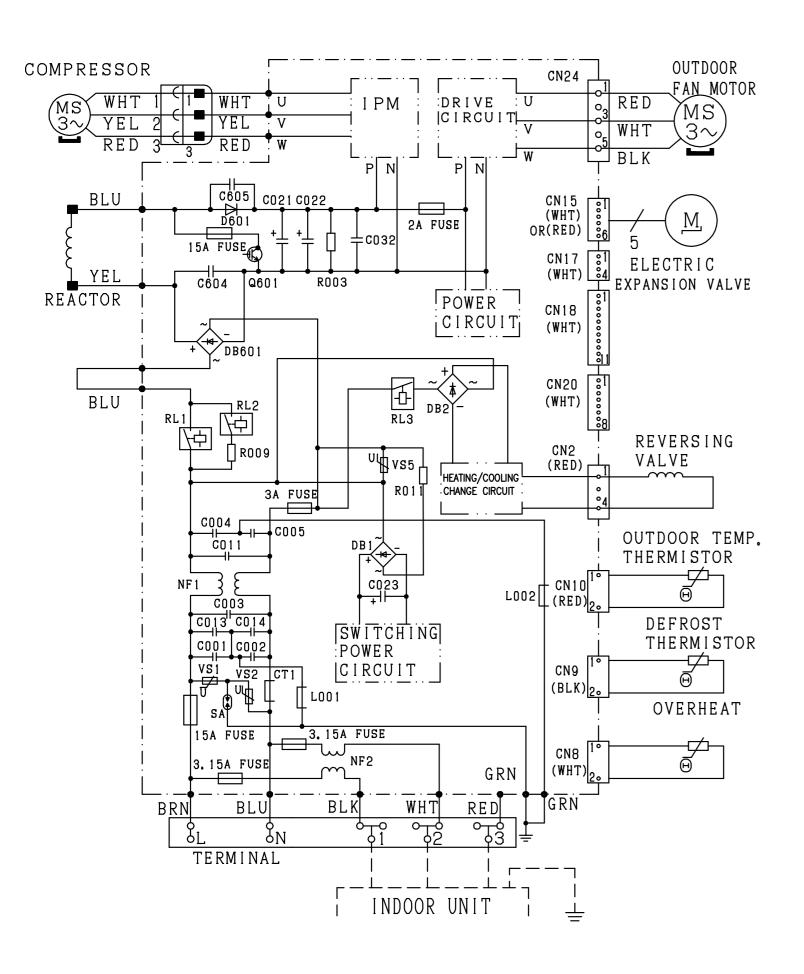
ACAUTION

When the refrigerating cycle has been operated for a long time with the capillary tubes clogged or crushed or with too little refrigerant, check the color of the refrigerating machine oil inside the compressor. If the color has been changed conspicuously, replace the compressor.

OUTDOOR UNIT MODEL RAC-18/25/35WPD OUTDOOR UNIT MODEL RAC-42/50WPD

WIRING DIAGRAM

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



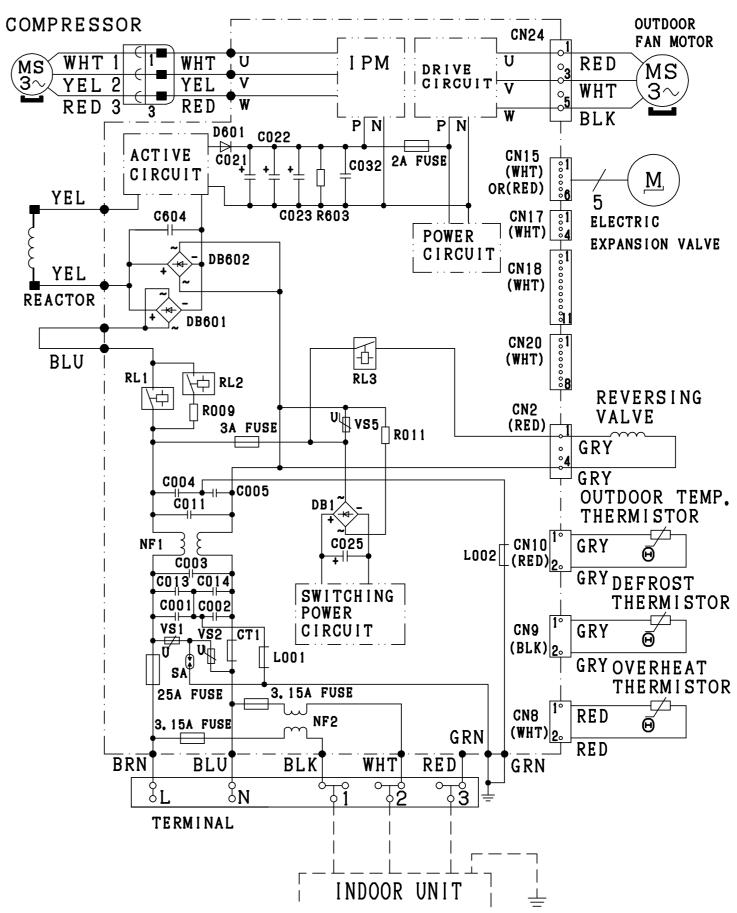


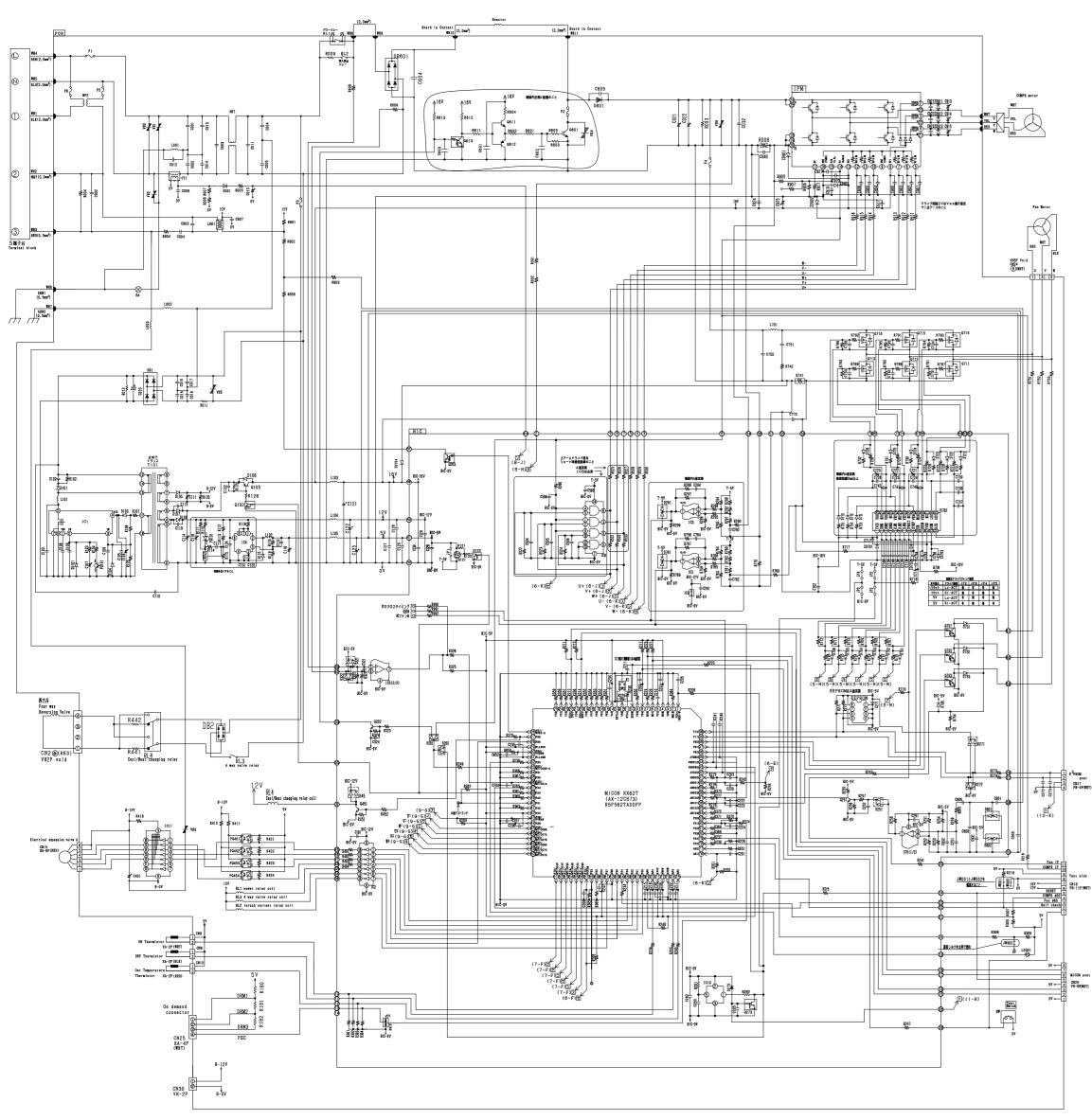




WIRING DIAGRAM

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





M-PCB

抵 抗 Resistance 記号 定称/Rating 探探 探探 探線 個別 Symbol Manufacture (1995) (1995 46 7 12944 6 12944 9 12944 11 2,25% 5 100K 5% 2 1K 5% 1 1.8K 5% 1/6 68K 5% 1/6 10WPER 38 19 21 21 R118 8.2K 1.51 1/6 A R119 2.7K 1.51 1/6 A R120 20K 5% 1/6 A R125 10K 5K R M 42 R126 3K 5K R M 45 R180 110 110 110 110 110 R180 110 110 110 110 110 110 R181 110 11 6 100 5% 💏 A M 35 B 1K 5% 🕅 A M 38 3300 5, 1K 5% 3% A N 40 3306 10K 5% 3% A N 40 3306 10K 5% 3% A N 42 3307 1K 5% 3% A N 42 3309 10K 5% 3% A N 42 111 7.5K5X 拼 A M 41 12 7.5K5X 拼 A M 41 R418 JUMPER A M 21 47K 5X 37 A M 22 47K 5X 37 A M 23 47K 5X 37 A M 23 47K 5X 37 A M 24 47K 5X 37 A M 1 1.3K 5X 2 A M 1 1.3K 5X 2 A M 1 2.13K 5X 2 A M 1 2.05X 1/8 A M 2 0.5X 1/8 A M 3 2.0K 5X 1/8 A M 4 5.10 5X 1/8 A M 5 2.4 5X 1/8 A M 5 NOS21 5 NOS21 0 5x 177 A M 35 K 5x 177 A M 40 K 5x 177 A M 40 K 5x 177 A M 42 . 24 2% 1 R M 8 MPER A M Dist 5x 7x 7x DK 5x 7x A M DO 5x 7x 5<u>x 1/4 A M</u> RB06 510 5x 1/4 A M 17 R905 100 1x 1/6 A M 47 R906 3, 65K 1x 1/6 A M 51 R907 2K 5x 1/6 A M 39 Reg11 10 55 FA M 31 Reg12 10 55 FA M 31 Reg13 10 55 FA M 31 Reg13 10 55 FA M 31 Reg14 10 55 FA M 31 Reg15 10 55 FA M 31 Reg16 10 55 FA M 31 Reg16 10 55 FA M 31 Reg16 10 55 FA A M

										4420
C102	2200p	1 k	С	Ρ	Μ		53	TDK BC7300 RM		
C103 C104	220 p	2 k	С	P	M				D103	42 F23
C104	100	50	D	R	M		55	1991 200	D104 R	B721
0100	0.1	50	C	A	M		81 63		D105 R	L2Z
C106 C107	1	50	C	A	M				D106 1	SS13
	22	25 50	C	R	M		66	2365	D107 D D108 E	117
C109	15p	50	C	A	M		68	B騎 C田騎	010016	616
C110		div	Č	R	M		Ž		D110 A	KO4
C111	470	25	D	₽	М		74	:99:07		
									D001 1	N4148
C113	\sim		С	R	М		\vee	1		
C114	470	25	D	₽	Μ		74	:#UT	DB2	S1W1
C115	470 p 470	50	C	A	M		77	CHN SPOLIN	D601 [30L6
C116 C117	4/0	50	D	₽ A	M		75 81	179ELX	DB1 D	2SB6
C118	330		D	R	M		81	- M-	DB1 L	2580
C119	330	10	C	R	M		٣	-773144		N2 37
C119 C120	330p	50	C	A	M		70	CHH		
C121	100	25	D	R	M			:987	<u>ツェナーダ</u>	17-
C122	\sim	25	D	R	Μ		$\overline{}$:9907	記号	a
C123	100	10	D	R	Μ		89	ះអូឡា	Symbol 3	
C124	0.1		С	A	М		81	P#	ZD101 \$	DMTZ
C125		50	С	A	M		81	rn FN		
C126 C127	0.1	50 50	C	A	M		81 81	P8	ZD704 B	ZX551
0121	0.1	30	С	~	m		01		ZD901 B	77551
C131	\sim		С	A	М				ZD902 B	78551
C132	8.1	58	C	A	M		90	80	ZD903	
		r	-				r-		ZD911	-
									ZD912	\geq
CO01	0,01	250	С	R	Μ		57	Morata KH	ZD913	\sim
C002	0.01	250	С	R	Μ		57	Norata XH		
C003	0.68	SIG	F	H	Μ		70	LE-KO	トランジス	9
C004	0.01 0.68 0.01	250	C	R	M	-	57	Norata KH Norata KH OLAYA LE-NK Norata KH Norata KH		
C005 C009	0,01	280	C	R	M	H	37	KI FI	記号 Symbol	型式
C009 C010	0.1	3U 50	CD	R	M	H	81	FII V2 OLAVA LI-KOL	Symbol Q102	
C010	3.3	0U AC 310	F	H	M	H	71	VR DEAYA	w102	RUIU
C012			e	R	M		ビ	10-1 0		
C013	0.01	AG	C	R	Μ	H	57	Norata XH	Q105	KTA200
C014	0.01	AC 250	C	R	M		57 57 60	KN Narata KH		
C015	47800	250	С	R	Μ		60	TH Norata TH Norata TH TH		
C016	47800		C	R	M		60	Norata KH		
		Ē					Ľ			STGX3
							_			KTC200
C021		420		H	M	_	58		Q612	KTA200
C022 C023		420 450	D	H	M		58	ENX	Q613	KRC10
C032	68	450	F	н	M		73	KNIX 18535, 5 OKAYA AFP	Q711	P5F5
0032	0.1	4 30	r		m		12	AFP		P5F5
6272	100p	50	C	A	M		82	CHR		P5F5
C272 C273	100p	50	C	A	M		82 82	CHR	Q714	
			-						Q715	P5F5 P5F5
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C401	100	25	D	R	Μ		64	NCIICO VR	1 C	
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C601	0.000	58	C	A	M		6	18	101	MIP4
C602	0,022	50 50	C C	A	M		86 85			NJM2
C603 C604	0 01		C	R	M		54		104	TD62
C605	4700p	DC	C	R	M		59		1011	1002
		158	Ĥ	Ê	Ê		- 3		REG2	K1A431
C731	220 p	50	С	A	M			сня	I PM	S2198
C732	220p	50	С	A	M					
C733	220 p	50 50	С	A	M		87	CHR		
C734	220p	50	C	A	M	Ľ	87	CU8	インダクタ	1
C735	220 p	50	C	A	M					
C736	220 p	50	С	A	M		87	CHM		! 式.
0751	0.07	pc		P	11	-			Symbol	
C751	0,01	h	C	R	M		54	-		UMPE
C752	\sim	К	¢	R	Μ	К	K			
C772	n 1	50	-		M	H	81	19	L003 J	JHIP E
0112	0.1	50	С	A	Μ	H	81	-	L101 J	UMPE
C802	4700-	250	С	R	М	H	56		L102 R	CHIOBN
	8.622	250 50	F	R	M	H	76		1.103	UMPE
C804	0.022	AC 310	F	H	M		69	OKAYA LE-M	L104 J	UMPE
C805	0,1	50	C	A	M		81	1	L105 J	UMPE
C807	0.1	50	С	A	M		81	11	L701 J	UMPE
C900	0.1	50	C	A	M		81	FH CHA	L801 1	F-TR
C901 C902	680p 680p	50	C	A	M		84	CHR	T	DMO:
0902	080p	50	C	A	M	-	84	CHR	T101 R	KALL 14
C903	680p	50	C	A	M	-	84	CUR	CT1 S NF1 R	19-J
C904	680p	50	C	A		-			NF1 R	RMH1
C905	680p 680p	50	C	A	M	H	81	CH	NF2 R	RMH3
CODE		υU	С	-	192	H	04	-		
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C906 C913 C914 C915 C917	33 33 33	25	D D C	R	M		2	ST(1051	Symbol 3 VS1 E VS2 E	RZVA RZVA
C906 C913 C914 C915 C917 C917	33 33 33 33	25 	D D C	R A A	M M M		Z 86	51(1055 101	Symbol 3 VS1 E VS2 E VS3 E	RZVA RZVA RZVA
C906 C913 C914 C915 C917 C917 C919 C920	33 33 33 33	25 	D D C	R A A	M M M		86 81	81(115) 84 84	Symbol 3 VS1 E VS2 E VS3 E	RZVA RZVA RZVA
C906 C913 C914 C915 C917 C919 C919 C920 C921	33 33 33 0. 022 0. 1 0. 1	25 50 50	D D C C C C	R A A A	M M M M		2 86 81	57(10)0 814 716 716	Symbol 3 VS1 E VS2 E VS3 E	RZVA RZVA
C906 C913 C914 C915 C917 C917 C919 C920 C921 C922	33 33 33 0, 022 0, 1 0, 1 0, 1	25 50 50		R A A A A	M M M M M		86 81 81	STILLS EN FN FN	Symbol 3 VS1 E VS2 E VS3 E VS4 E VS5 E	RZVA RZVA RZVA RZVA RZVA
C906 C913 C914 C915 C917 C919 C920 C921 C922 C923	33 33 33 0. 022 0. 1 0. 1 0. 1 0. 1	25 50 50 50		R A A A	M M M M M		86 81 81 81	EN FN FN FN FN FN	Symbol 3 VS1 E VS2 E VS3 E VS4 E VS5 E VS8 4	RZVA RZVA RZVA RZVA RZVA
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VS2	ERZVA9V431	R	M	137	
VS3	ERZVA5V471	R	M	138	
VS4	ERZVA9V431	R	M	137	
VS5	ERZVA9V431	R	M	137	
VS8	450NR-12D	Н	M	135	
VS9	450NR 120	Н	M	\square	
SA	DE37-102MF	R	M	139	
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	R208 R209	10K	5%	1/16 1/16	C	EIC.	В	12	1005
	R209	10K	5X	1/16	C	EIC.	В	12	1005
	R211	10K	5%	1/16	С	EIC.	A	12	1005
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	R213	10K	52	1/16	c	HIC	4	12	1000
	R214	390	54	1/16	č	IIC.	A	17	1005
	R212 R213 R214 R215	100	57	1/16 1/16	C	IIC	AB	8	1005 1005 1005 1005 1005
	N210	100	34	1/10	-	416	D	10	1005
#5	R217	10K	6.	100		EIC.		10	
inerts	K217	101	10%	1/10	6	116	A	112	1005
	DOCO	10"			-	RIC.			\vdash
OLDER TYPE	K223	10K	ЭX	1/16	C		A	12	1005 1005 1005
BAD TYPE	R224	390 5,1K	ЪX	1/16	C	IIC	A	17	1005
EAD TYPE	R225	5.1K	5%	1/16	C	1IC	В	16	1005
EAD THTE	R226	10K	5×	1/16 1/16		HIC	A	12	1005
	R227	10K	5×	1/16	C	EIC.	A	12	1005
OLDER TYPE	R228	390	5×	1/16	Ċ	HIC	A	17	1005
OLDER TYPE	R229	\sim			C	FIC	A	V	1005
	R223 R224 R225 R226 R227 R228 R229 R230	330 100	5%	1/16 1/16	С	IIC	A	48	1005
	R230	100	5×	1/16	č	IIC.	B	8	1005
			- ⁻	Ľ,	ŕ	1			
p	R236	2.28	5¥	1/16	С	EIC.	B	18	1005
<u> </u>	R236 R237 R238	2.2K 2.2K 1K	54	1/10	ř	110	A	10	1005
#4	P220	11	54	1/16 1/16	1 c	IIC	Â	10	1005
	R230	100	6.	1/16	C	IIC	D D	6	1005 1005 1005
			3%	1/10	10	116	D	10	1005
6, 423), 8008 5, F4 5, 2223008	20/0	100	6.0	100	-	EIC.	В		
5. 222000	K240	100	10%	1/16 1/16 1/16	UC C	110	5	1 č	1005
	R241	100	эX	1/16	C	1IC	В	8	1005
	R242	160	5X	1/16	C	1IC	A	24	1005
	R243	100	5%	1/16	C	HIC	В	8	1005
	R240 R241 R242 R243 R244	3, 32K	1×	1/16	С	1IC	A	25	1005
									L
	R247 R248 R249	100	5×	1/16 1/16	C	EIC.	A	8	1005
ŧ	R248	10K	5X	1/16	C	TIC	В	12	1005
帝 備考	R249	3.9K	5%	1/16	C	HIC	A	26	1005
+						1			
48 赤	R251	7.15K 10K	1%	1/16	С	EIC.	A	27	1005
49 é	R252	108	17	1/10	ć	TIC	A	12	1005
	R251 R252 R253 R254 R255 R256 R256 R257 R258 R259	10K	li v	1/16	č	TIC	B	113	1005
50 💻	P254	100	H¢.	1/10	č	TIC	A	H۴	1005
51 क	D055	1000 2K	6.4	1/16	č	IIC	A		
52 e	R200	2K 10K 3K 2,2K	10×	1/16 1/16	0		A	20	1005
	K256	101	DX	1/16	Ċ	IIC	A	12	1005
53 <u>e</u>	K257	3K	DX.	1/16	С	EIC	A	128	1005
55 é	R258	2, 2K	11%	1/16	C	EIC	A	29	1005
	R259	1 K	5%	1/16	C	EIC	В	21	1005
54 😑									
56 é	R260	510	5X	1/16	C	EIC.	В	7	1005
57 e 🛆									
58 G A	R265	100	5%	1/16	С	HIC	В	8	1005
58 e 🛆									
	R271 R272 R273 R274 R275 R276 R277 R278 R278 R281 R282	5.1K	5×	1/16	C	EIC	A	16	1005
	R272	5.1K 5.1K 390 390 100	5%	1/16	C	EIC	A	116	1005
	R273	390	5%	1/16	C	HIC	A	17	1005
	R274	390	5%	1/16	Ċ	HIC	A	17	1005
	R275	100	57	1/16	Č	TIC	A	8	1005
115	R276	100	57	1/16	C	IIC			
Interits	R277	100	57	1/16	c		A	18	1007
	8278	100	5×	1/16	č	EIC EIC	A	Ř	1005
	R2P1	5107	57	1/16	C	FIC	R	AP	1005
	P201	510K 1K	54	1/16	C	EIC	B	40	1005
	1202	1.1	1.1	p/ 10	<u>۲</u>	1.16		61	1005
					-		-	H	
図 # 11111							-	H	
Basela		_	H	H	-	\vdash	-	H	
			-		-		-		
+	P300				6			Ż	
+	R288 R289	\sim	К	K	C	EIC	A	К	1005
	1209	\sim	r	К	C	EIC	A	ĸ	1005
	0000								\vdash
	R290	24 5.11K	5%	1/16	C	EIC	A	35	1005
	R291 R292 R293	5.11K	11%	1/16	C	HIC	A	36	1005
+	R292	5.11K 5.11K 5.11K 5.11K	11	1/16	C	HIC	A	36	1005
	R293	5.11K	1×	1/16	С	EIC	A	36	1005
	R294	5.11K	1%	1/16	C	EIC	A	36	1005
	R295	Chip JUNPER	5%	1/16	C	HIC	Α	38	1005
+	R296	Chip Japen	5×	1/16	C	HIC	A	38	1005
+	R297	12.1k	1×	1/16	C	FIC	A	51	10.05
	R298	24	57	1/16	Ċ	EIC	A	35	1005 1005 1005
	R299	5. 11 K 6. in Jan 1 6. in Jan 1 12.1k 24 10 K	lix.	1/16	C	EIC	A	13	1005
			r'''	r i	Ľ.	1		11	
	P301	3 740	n se	1/16	C	i su c	Þ	42	

記号 Symbol	EM (0)	H	ng Etm		耕	Ē.		92 50-0	Synbol	EM (0)	E	Dr.	ŝŝ.	該	Ê.	뱶	192 100-10
R121 R122	_ HBK	5%	1/16	C	IIC	A	12	1005	R371	10K	5%	1/16	C	BIC	B	12	1005
1122	11/11	1.0%	1/10	۴	1216	1	٣	1005	29 Synbol R371 R372 R373 R374 R374 R375 R401 R402	10K	5%	1/16	č	HIC	Å	12	1005
									R374	1 K	5%	1/16	С	EIC	A	21	1005
R200	108	15	1/16	C	alc.	В	13	1005	R3/5 R401	10K	5X	1/16	C	HIC	AB	12	1005
R200 R201	510	5×	1/16	C	EIC.	В	7	1005		1 K	5%	1/16	С	HIC HIC	В	21	1005
R203	100	54	1/16	- C	810	R	8	1005	R403 R404	1 K	5X 5X	1/16	C	EIC EIC	B	21	1005
NL00	100	1		ľ		5		1005	R451	10k 5.1k	5%	1/1	C	BIC	B	12	1005
0006									R452	5.1k	5%	1/1	C	HIC	B	16	1005
R206	5.1K	5%	1/16	C	BIC	B	16	1005	R522	108	5%	1/16	С	FIC	в	12	1005
R208 R209	10K	5%	1/16	C	EIC.	В	12	1005	R523 R524 R525 R526 R527	10K 10K 10K	5%	1/16	C	EIC	В	12	1005
	10K	15%	11/16	IC.	IHIC	IB.	112	1005	R524	10K	5%	1/16	C	HIC	B	12	1005
R211	10K 390	5X	1/16	c	BIC	A	12	1005	R526	430 430	5%	1/16	č	EIC	B	45	1005
R211 R212 R213 R214	390	5%	1/16	C	HIC	A	17	1005	R527 R528	430 430							
R213	390	57 57	1/16	C	IIC IIC	A	12	1005	R528	430	57 57	1/16	C	EIC	Â	45	1005
R215	390 100	5×	1/16	Ċ	IIC	В	8	1005	R529 R530	430 430 430	5×	1/16	C	EIC	A	45	1005
R217				L					R531 R532	(1)+ 10011	5%	1/16	C	FIC	B	36	1005
									R533	(14-10P1	5%	1/16	č	EIC	B	36	1005
R223 R224	10K	5×	1/16	C	EIC.	A	12	1005			_						
R224 R225	390 5.1K	5%	1/16	C	110	B	16	1005	R650 R651	10K	5% 5%	1/16	C	FIC	A	12	1005
R225 R226 R227 R228	10K	5×	1/16	č	IIC	A	12	1005									
R227	10K	5×	1/16	C	EIC.	A	12	1005	R701 R702	1.5K	5%	1/16	C	EIC	B	41	1005
R229	240		2	č	IIC	A	٣	1005	R702	1. 5K	5%	1/16	č	EIC	B	41	1005
R229 R230	330	5×	ĺ/16	Ċ	lic	A	48	1005	R703 R704 R705 R706 R707 R708 R709 R710 R711 R712 R713 R714 R714 R715 R714	1.5K	5%	1/16	Ċ	HIC	B	41	1005
R234	100	15×	1/16	1 C	BIC	B	8	1005	R705	1.5K	5X	1/16	C	EIC	B	41	1005
R236	2.2K	5%	1/16	c	810	в	18	1005	R707	20K	5%	1/16	č	BIC	B	19	1005
R236 R237 R238	2,2K	5%	1/16	C	1IC	A	118	1005	R708	20K	5X	1/16	С	HIC	B	19	1005
R238 R239	1K 100	15×	1/16	1 C	I II C		21	1005	R709	20K	5X	1/16	C	HIC	B	19	1005
									R711	201	5%	1/16	č	BIC	B	19	1005
R240 R241	100	5×	1/16	C	EIC.	B	8		R712	20K	5X	1/16	C	HIC	B	19	1005
R241							8	1005	R713	10	5X 57	1/4	C	HIC	B	49	3218
R241 R242 R243	160	5×	1/16	č	IIC IIC	B	8	1005	R715	10	5%	1/4	č	BIC	B	49	3218 3218 3218
R244	3, 321	1×	1/16	C	EIC.	A	25	1005	R716	1 M	5%	1/10	C	HIC	B	50	1608
R247	100	5×	1/16	С	110	A	8	1005	R716 R717 R718 R719	1 K Chip JOBPOR	оX 5X	1/16	C	쁪	B	21 38	1005
R248	10K	5x	1/16	č	IIC.	B	12	1005	R719	Chip JUPPE	5%	1/16	Č	BIC	Ă	38	1005
R249	3.9K	5%	1/16	C	EIC.	A	26	1005	P721	28	54	1/16	C	FIC		20	
R251	7.15K	1×	1/16	c	810	A	27	1005	R721 R722 R723	2K 2K	3X 5X	1/16	C	쁥	A	20	1005 1005 1005
R251 R252 R253 R254 R255	7.15K 10K	1×	1/16	Ċ	HIC	A	13	1005	R723	2 K	5%	1/16	C	EIC	A	20	1005
R253	104	11.7	1/10	(6)	1116	8		1005	R724	2K	5%	1/16	C	FIC	A	20	1005
R255	+#60 2K	5×	1/16	C	EIC.	A	120	1005	R726	2K	5%	1/16	č	EIC	Â	20	1005
R256 R257	10K						112	1005	R726 R727 R728	2K 100	5%	1/16	C	EIC	A	8	1005
R257 R258	2 2K	5%	1/16 1/16	C	EIC	A	28	1005	R728 R729	100	5%	1/16	C	FIC	A		1005
R259	1K	5×	1/16	C	HIC	B	21	1005	R730	100	58	1/16	C	FIC	A	8	1.000
									R731	100	5%	1/16	C	EIC	A	8	1005
R260	510	22	1/10	C	116	в	Ľ	1005	R732	100	3%	1/10	6	EIL.	A	8	1005
R265	100	5%	1/16	С	EIC.	В	8	1005	R754	11K	1%	1/16	С	BI:	В	30	1005
R271	5.1K	5.4	1/16	-	-	A	16		R758		┝	\vdash	C	FIC			
R272	5.1K	5%	1/16	č	EIC	A	16	1005	R759	\geq	F	F		EIC		6	1005
R273	5.1K 5.1K 390 100 100 100	5×	1/16	C	HIC	A	17	1005	R760	24	5%	1/16	C	HIC	A	35	1005
R274	390	5×	1/16	C	HIC	A	17	1005	R761 R762	5.11K 5.11K	1%	1/16	C	EIC	Å	36	1005
R276 R277 R278	100	5%	1/16	c	HIC	Â	8	1005	R763 R764	5. 11K	1%	1/16	C	EIC	Â	36	1005
R277	100	5×	1/16	C	EIC.	A	8	1005	R764	5.11K	1%	1/16	C	FIC	A	36	1005
R281	100 510K	5X	1/16	C	FIC	R	40	1005	R765 R766	Chip JURPER Chip JURPER	5X	1/16	C	FIC	A	38	1005
R281 R282	510K 1K	5%	1/16	Ċ	EIC	B	21	1005	R767								
	_	⊢		-	-		-		R768		5%	1/16	C	110	A	35	1005
-		⊢	H	⊢			⊢		R769 R770		Þ	2	č	EIC	Â		1005
R288		┢		c	EIC	A	┢	1005	R805							38	1005
R289	\sim	ľ	Þ		EIC	Â	Þ	1005	R990	100 100	5%	1/16	C	EIC	A	8	1005
P 200	24								R991 R992	100	5%	1/16	C	EIC	A	8	1005
R290 R291	5.11)	1%	1/16 1/16	C	EIC	A	36	1005	1992	100	Ľ		Ľ		Ê	8	1005
R292 R293	5,118	1×	1/16	C	FIC	A	36	1005			F						
R294	J. 113	17	1/16	1 c	EIC	A		1005			H	H	Η	Н	H	H	\vdash
R295	5.11) (ii) JMPS	5×	1/16	Ċ	HIC	A	138	1005									
K296 R207	011 JUNE 12.1k	15%	1/16	C		A	38	1005	\vdash		\vdash	\vdash	Η	Н	H	H	-
K588											L	L	H	H			
R299	101	1×	1/16	C	EIC	A	13	1005			F	Г	Г	П			
R301	3, 741	0, 51	1/16	c	EIC	в	42	1005			\vdash	\vdash	Н	Н	H	Н	-
R302	3.011	0.5	1/16	Ċ	EIC	B	43	1005									
K303	3.01) 1 K	<u>µ,5</u>	1/16	1 C	EIC	B	43	1005	$ \vdash $		-	\vdash	\vdash	Η	H	\vdash	-
R304	10K	5x	1/16	č	FIC	Å	12	1005			L		H	H			L
											Γ						
K321 R322	1.8K	11×	1/16	C	BIC	A	44	1005			\vdash	\vdash	Н	Н	H	H	\vdash
R323	3.98	5x	1/1	Č	FIC	B	26	1005									
R324	3,9K 3K 10K	5%	1/16	1 C	BIC	B	28	1005			Ľ	Ĥ	H	F	Ĥ	Ē	
R325	(UK	10% 15%	1/1	C	810	L B	112 3P	1005			\vdash	\vdash	Н	Н	H	Н	\vdash
R350 R351	10K	5%	1/16		HIC	Ă	12	1005			Ľ	Ē	F	F	Ĥ	Ē	-
R352	10K	5%	1/14	č	810	Å	12	1005			\vdash	H	Н	Н	H	H	\vdash
R352 R353	10K	5%	1/16	Ċ	HIC	Á	12	1005									
R354 R355	10K	5%	1/1		HIC	ļ,	12	1005			Ľ	Ē	F	F	Ĥ	Ē	
R356	10K	5%	1/14	č	810	Â	12	1005			\vdash	H	Η	Н	H	H	\vdash
R357		5%	1/16	Ċ	HIC	Á	12	1005									
R358 R359	108	5%	1/1	1C	HIC	Ă	12	1005			Ē	Ē	F	F	Ĥ	Ē	
R359 R360	10K	10X 15¥	1/16	C	810	1A	12	1005			-	\vdash	Н	Н	H	H	\vdash
R361	10K	5%	1/16	č	HIC	Ā	12	1005			L						
R362 R363	10K	5%	1/1	1C	HIC	B	12	1005			Ē	Ē	F	F	Ē	Ē	
	10K	10X 15¥	1/10	C	810	B	12	1005			-	\vdash	Н	Н	H	H	\vdash
R364		58	1/16	č	HIC	B	12	1005 1005 1005			L						
R364 R365	10K					11 C C	112	1005			-			_	_	_	
R364 R365	10K	5%	1/16	C	HIC	<u>^</u>	10										
R364 R365 R366 R367	10K	5%	1/16	C	HIC	AB	12	1005									
R364 R365 R366 R367 R368 R369	10K 10K 10K	5% 5% 5%	1/16 1/16 1/16	C C C	HIC HIC HIC HIC	B	12	1005									

記号	28 / 20	1.00		**	22	22	40.02	
Symbol C128	定省 / tar 変量 (aF)	16 25 25	41	1	-	Ľ	ŧ.	H¢ Inserie
C158	0.1	16	C	C		B	55	1005 1608 1608
C129 C130	0.1	25	č	č	EIC.	B	59	1608
C191	0.1	25	C	C	EIC	В	63	1608
C201 C202	0.1	16 16	С	С	11C	٨	55	1005
C202	0.1	16	C			٨	55	1005
C202 C203 C204		50	r c	C C	110	K		1005
		25 50	¢ c c	C	EIC EIC EIC	B	54	1005
C206	470 p	50	С	С	EIC EIC	B	60	1605
C207	470p 470p 0.1	3U 16	C C C	C	110	A	55	1005
C210	0.1	16	č	C	EIC.	B	55	1005
C205 C206 C207 C209 C210 C211	0.047	25	C	С	EIC.	В	54	1005 1005 1005 1005 1005 1005
C215			С	С	EIC	A		1005
C216	0,1	16 16	C C C	C C	1BIC	A	55	1005
C217	0.1	16	C	C	EIC.	٨	55	1005 1005 1005
C220	0,01	25	с	С	EIC			1005
C222	1000p 0.1 0.1	6	e C	e	81C	K	6	1005 1005
C224	0.1	16	C	C	EIC	B	55	1005
C231	0.1	16	C	C	EIC.	В	55	1005
		16	С	C	110	В		
C235	0.1	16	C		EIC	B	55	1005
C236	0.1	16	С	C	EIC	В	55	1005
C237	0.1	16 16	C	C	110	B	55	1005
C239	0.1	16	С	С	#IC	B	55	1005
C234 C235 C236 C237 C238 C239 C239 C240	0.1		Ċ	C	EIC.	В	55	1005 1005 1005 1005 1005 1005 1005
C241	0.1	16	C	С	EIC.	B	55	1005
C251	2200p 0.068	50	C C	С	BIC	В	61	C88 1608
C251 C252	0.068	25	С	C	IIC	A	61 62	1608
C271	0.1	16	С	С	81C	٨	55	1005
C281 C282	0.1	16	C	C	EIC EIC	A	55	1005
C283	0.1	16	C	C	EIC.	B	55 57	1005
C285	0.1		С		EIC	в		
0285			G			в		1005
C291	0.1	25	С	С	11C	٨	59	1608
C292	0.047	25	C	C	EIC.	٨	54	1005
C294			e	e	EIC.	K		1005
	0.000		С	С	BIC		0.5	28
C321 C324	0.033 100p	5U 50	C		EIC	B	00 76	1608
C504 C505	100p	50	C	C	11C	B	76	1005
C505	100p	50 50 50	C	C	BIC	B	76	CHE 5 CHE 5 CHE 5 CHE 5
C508 C509	0,1 220p	16 50	C	1 C	EIC EIC	B	55 67	1005
							Ľ	
C652	\geq	58	¢	P	EIC.	٨	P	1005
C702 C703	0, 33	25	C	с	81C	В	74	2 25
	0.33 2200p	50	С	Č	T IC	B	75	1005
C704	1000p	50	C	C	IIC	۱A.	68	18as
C706	0.1	16	С	c	EIC.	В	55	1005
C711 C712		50 50	C	C	EIC EIC	A A A A	73	120.8
C713	100p	50	č	č	EIC.	Â	73	1608
C714	11000	50	C	С	IIC.	A	73	ille
C715 C716	100p	50 50 50 50 50	C C	C .	EIC EIC	A	73	
C717	100,	Z	ø	ĕ	EIC.		Ż	2125
C718	\sim	Z	Ż	e	EIC EIC	R	17	
0721	10	25	D	C	EIC	٨	72	IR IR IR 1608 1608 1608
C722	10	25	D	l c	late	A	72	WR.
C723 C724	10	25 25 25	D	C	EIC EIC	A	72	12
C724 C725	0.1	25 25	C	C	EIC EIC	٨	63	1668
C726	0.1	25	C	C	EIC	A	63	1608
							70	
C737 C738 C739	100p 100p	50 50	C	C	EIC	B	73 73	1608
C739	1009	50 50	С	C	EIC	B	73	1608 1608 1608
C740	100p	50 50	C	C C	EIC EIC	A	73	1608
C741 C742	100p 100p	50 50	C	C	EIC	A A	73	1608
C762	0.01	25	С	С	EIC.	A	170	1005
C762 C764			e	e	EIC.	A		l

 C762
 0.0126
 C init A 170%

 C764
 2812
 8114
 A issa

 C801
 0.022
 812
 614
 A issa

 C8010
 0.022
 50
 C it A 60%
 C 600%
 C 600%

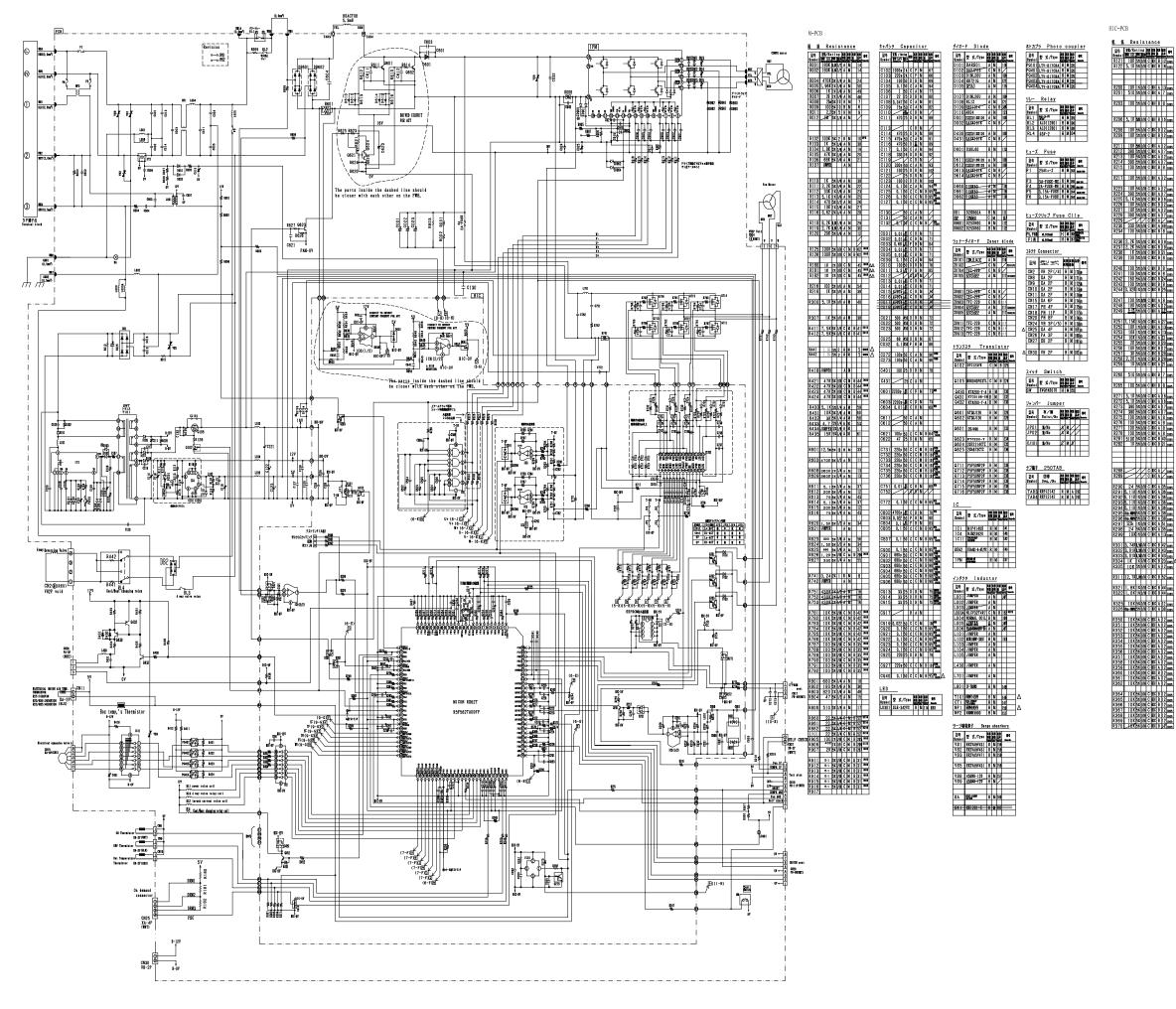
 C8008
 479
 50
 C it H 4 66%
 C 600%
 C 931
 0.116
 C it H 4 66%

 C931
 0.116
 C it B 55
 166
 A 55
 168
 C 932
 0.116
 C it B 55
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記号 Symbol	型 式/Type	大臣 利道	支援	X.E.		
	KDS181-RTK/P	C	EIC	R	79	-
	KDS181-RTK/P	C	EIC		79	
	KDS184-RTK/P	Ċ	EIC		82	F
	KDS184-RTK/P	Ċ	EIC	B	82	t
	KDS181-RTK/P	Ċ	EIC	B	79	
D273	1SS352TPH3F	C	EIC	B	85	
D291	KDS226-RTK/P	С	EIC	A	83	F
D310	KDS226-RTK/P	С	EIC	в	83	F
D321	KDS184-RTK/P	С	EIC	В	82	
D322	KDS181-RTK/P	С	EIC	A	79	
D451	BAV70	С	EIC	B	78	Γ
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D701		R	EIC	18	∇	1
D702				Lø	\mathbb{Z}	
D703		¢	EIC		\mathbb{Z}	
D704		R	EIC	R	\square	Г
D705		R	EIC		∇	Γ
D706		¢	EIC	R	Z	
	D1FK60		EIC		84	
	D1FK60		EIC		84	
D713	D1FK60	С	EIC	A	84	
		_				-
	155355VN			В		-
	1SS355VN		EIC		80	-
	1SS355VW		EIC		80	-
	188355VN		EIC.		80	⊢
	155355VN		EIC		80	⊢
D126	155355VN	C	1510	A	RN	-
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D720	155355VN			H		+
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D735	155355VM	e	Int	॑₿	80	\vdash
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D761	KDS226-RTK/P	C	FIC	A	83	t
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D801	KDS226-RTK/P	С	EIC	A	83	F
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<u>ツェナーダイオード</u>Zener diode <u>288</u> <u>57850</u> 型 式/Type 第二日 第二日 第二日 20701 2月1日 2月1日 20703 2月1日 2月1日 20703 2月1日 2月1日

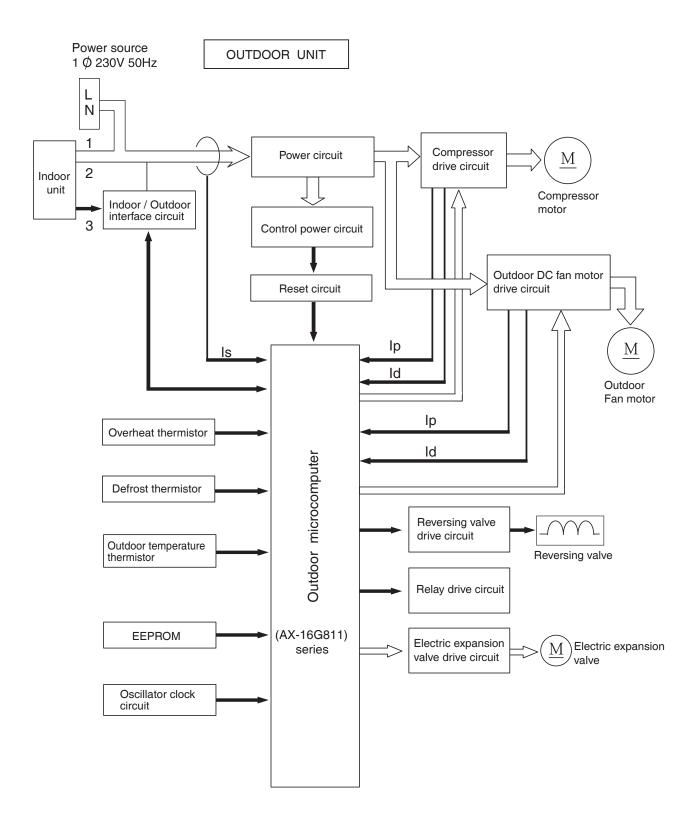
<u>2第7 Oscillator</u>
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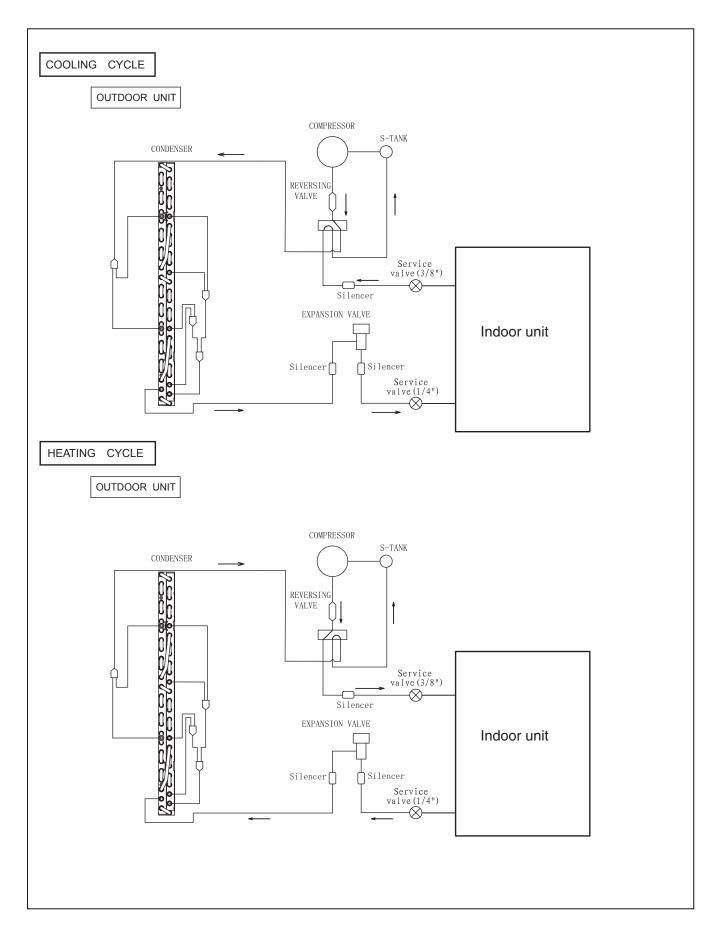
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105226-111/2	C HC A 83
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MODEL RAC-18/25/35/42/50WPD



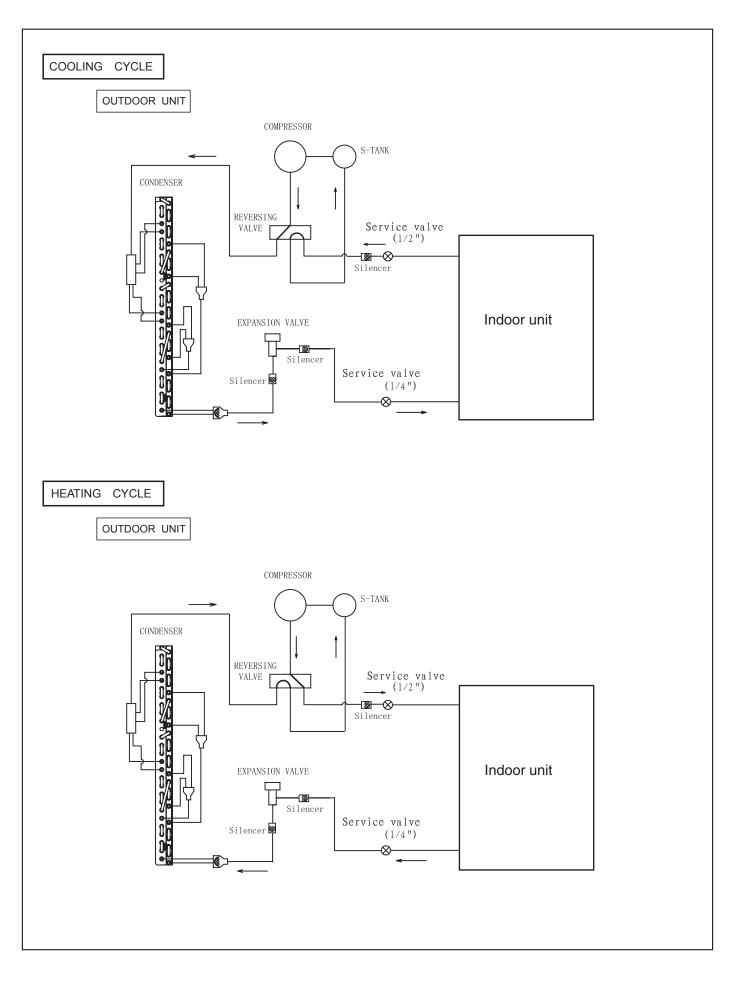
REFRIGERATING CYCLE DIAGRAM

MODEL RAC-18/25/35WPD



REFRIGERATING CYCLE DIAGRAM

MODEL RAC-42/50WPD



Procedure for Disassembly and Reassembly

OUTDOOR UNIT MODEL RAC-18/25/35WPD 1. Electrical parts

- (1)Remove the service value cover lock screws and lower the cover to remove it.
- (2) Remove the top cover lock screw and raise the cover to remove it.

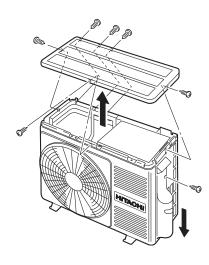


Fig. 1

(3) Remove the electrical box lock screw.(4) Remove the terminal cover lock screw.

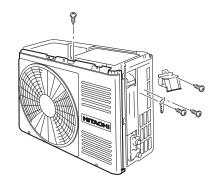


Fig. 2

(5) Remove each connector and earth cable from the lead wire. Then, remove the electrical box.

OUTDOOR UNIT MODEL RAC-42/50WPD 1. Electrical parts

- (1)Remove the service value cover lock screws and lower the cover to remove it.
- (2) Remove the top cover lock screw and raise the cover to remove it.

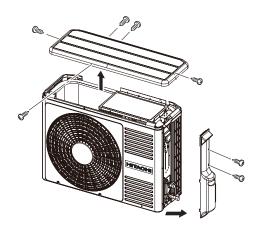


Fig. 3

(3) Remove the electrical box lock screw.(4) Remove the terminal cover lock screw.

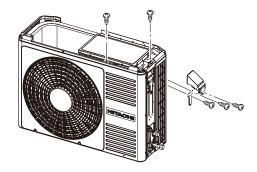


Fig. 4

(5) Remove each connector and earth cable from the lead wire. Then, remove the electrical box.

DESCRIPTION OF MAIN CIRCUIT OPERATION

MODEL RAC-18/25/35WPD

1. Power Circuit

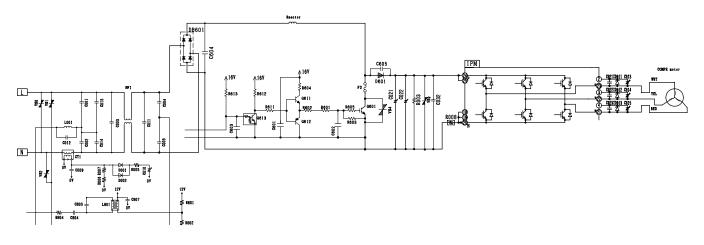


Fig 1-1

% This circuit full-wave rectifies 230VAC applied between terminals L and N and boosts it to a required voltage with the IPM to create a DC voltage.

The voltage become 300-330V when the compressor is operated.

- 💥 Main parts
- (1) Intelligence Power Module (IPM)A module that constitute by an inverter part.
- (2) Diode Stack (DB601)These rectify the 230VAC from terminal L and N to a DC power supply.
- (3) Smoothing capacitors (C021-C022,375 μ F ,420V)
- (4) IGBT to improve efficiency (Q601)

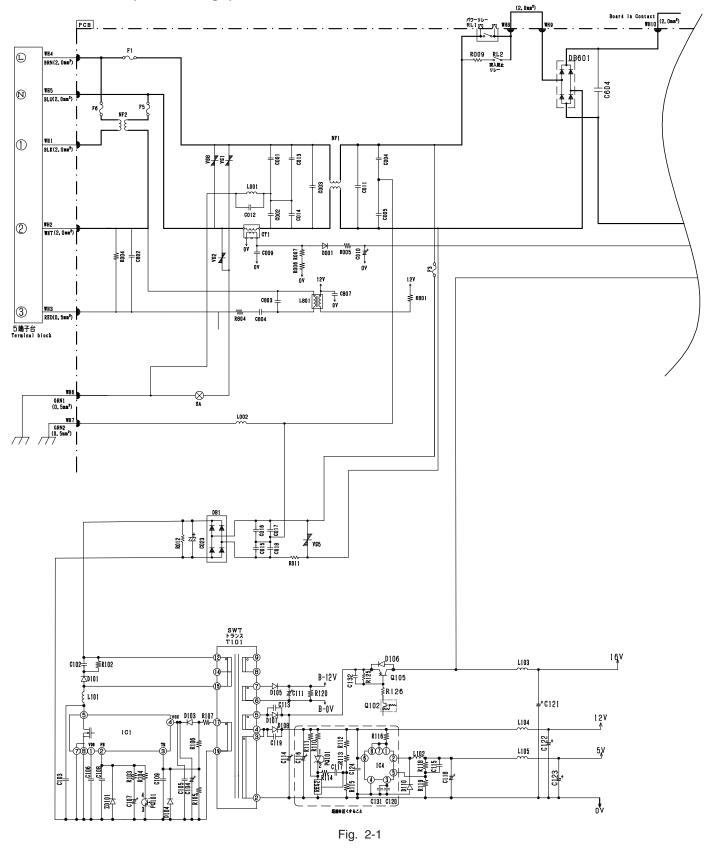
<Reference>

In case of Intelligence Power Module malfunction or connection failure immediately after compressor starts, its may stop due to error of [abnormal low speed], [switching failure],[Ip stop] and others.

<Reference>

- If diode stack (DB601) are faulty, DC voltage may not be generated and the compressor may not operate at all. Also be aware that the 15A fuse might have blown.
- X This smoothes (averages) the voltage rectified by the diode stack.
- ※ It will improve the efficiency during compressor load become heavy when current flow thru the chopper period of Q601.

2. Power circuit (Low voltage)



• The 230V AC voltage is rectified to DC voltage (B-12V,16V,12V,5V) pass through switching control IC (ICI), switching transformer.

- (1) B-12V Power supply for electrical expansion valve.
- (2) 16V Power supply for IPM driver circuit of compressor and fan motor, IGBT action.
- (3) 12V Power supply for 4 way valve relay, power relay, inrush current relay, motor current amplification,
- (4) 5V Power supply for microcomputer, peripheral circuits.

Main parts

(1) C001,C002,C003,C004,C005,C011,C013,C014, NF1

These absorb electrical noise generated during operation of compressor and also absorb external noise entering from power line to protect electronic parts.

- (2) Surge Absorber, Varistor1,2,5,8.These absorbs external power surge.
- (2) IC4

DC/DC convertor IC (DC12V - DC5V).

3. P.W.B. for power circuit

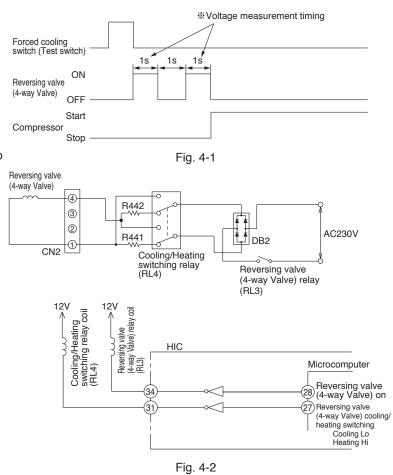
Voltage specification of power circuit as shown in below table. $\langle {\rm Checking \ point} \rangle$

Output	Spec	Main Ioad	Measuring point	Example of possible failure mode.
5V 0/P	5 ±0. 4V	Micon, Thermistor	Tester⊕ : L105 (JUMPER) Tester⊖ : D110 (EARTH)	Outdoor not operate, no blinking indication
12V 0/P	12 ±0.5V	Micon, IC2,3,4 Relay circuit	Tester⊕ : L104 (JUMPER) Tester⊖ : D110 (EARTH)	Outdoor not operate, no blinking indication
16V 0/P	$15.5^{+1.5V}_{-1.0V}$	IPM for Comp IPM for DC fan	Tester⊕ : L103 (JUMPER) Tester⊖ : D110 (EARTH)	Stop : LD301 3,4 or 12 times blinking
B-12V O/P	13 ^{+2.5V} -1.0V	Expansion valve	Tester⊕ : R120(B-12V) Tester⊖ : R120(B-0V)	Stop : LD301 5 times blinking

X Power circuit for PWB can consider normal if the result is satisfied with above specification.

4. Reversing valve (4-way valve) control circuit

- This model is equipped with a reversing valve (4-way Valve).
- The reversing valve (4-way Valve) "slides" the valve in the specified direction for each operating mode and switches the route of refrigerant and holds the route with a built-in permanent magnet.
- According to an operation command from the indoor unit microcomputer, the reversing valve (4-way Valve) control circuit applies current to the reversing valve (4-way Valve) coil in the specified direction, for each operating mode and slides the valve.
- Just before the compressor starts operation, the current is applied twice at the interval of 1 sec as shown in Fig. 4-1.
- During forced cooling operation, just after the forced cooling switch turns on, the current is applied twice at the interval of 1 sec as shown in Fig. 4-1.
- When the operation stops, the position of the valve before the stop is held.



• Before checking the application of current to the reversing valve (4-way Valve), disconnect the connector (CN2) and measure the resistance of both ends of the connector, to see if it is $[2500\Omega \pm 10\%]$. Only when the resistance is normal, check the application of current using the following procedures.

If the resistance is abnormal, it is caused by either; breakage of a lead wire, or failure of the reversing valve (4-way Valve).

• The voltage, when measured by a tester during the application of current to the reversing valve (4-way Valve) (when the voltage is measured)

Switches the indoor unit to the "Ion Mist operation and air cleaning operation", and keep pressing the "Test switch" of the outdoor unit electrical part from 1 sec to below 5 sec (while the self-diagnosis lamp LED301 is on). Afterwards, when the "Test switch" is released, the application of current starts after 1 sec elapses. (Forced cooling operation)

(Operating mode	Cooling operation (including forced cooling operation)	(Reference) Heating operation
	er and CN2 terminal ection point	\oplus terminal of tester to CN2 pin (4) \ominus terminal of tester to CN2 pin (1)	\oplus terminal of tester to CN2 pin \bigcirc terminal of tester to CN2 pin $④$
of testers	Analog tester	The tester indicates about 80 VDC and returns to 0 V, and indicates about 80 VDC again.	The tester indicates about 160 VDC and returns to 0 V, and indicates about 160 VDC again.
Types of	Digital tester	The tester indicates a large value for an instant and returns to 0 V, and indicates a large value again.	The tester indicates a large value for an instant and returns to 0 V, and indicates a large value again.

※In each operating mode, if the tester is reverse-connected to the CN2 terminal, the tester indicates a value on the – (negative) side.

• At the voltage measurement timing, when the voltage is measured with a tester, if the tester indicates the values as shown in the table above, the circuit is functioning normally. (Each tester indicates values differently. Since it is often difficult to read the values of a digital tester, it is recommended to measure voltage with an analog tester.)

*Since the current is applied only twice in 1 sec, if the timing is missed, correct operations cannot be measured.

- % If the main body of the reversing valve (4-way Valve) is functioning normally, it clicks twice synchronously with the voltage measurement timing.
- If this sound is heard, the reversing valve (4-way Valve) is functioning normally.

% If the checking of the application of current becomes abnormal, it is a failure of an electrical part.

5. Temperature Detection Circuit

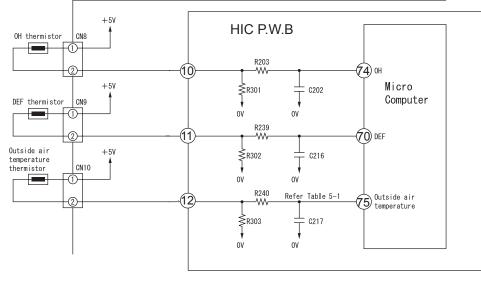


Fig. 5-1

- OH thermistor circuit detect the temperature at the surface of compressor head, DEF thermistor circuit detect the defrosting operation temperature.
- A thermistor is a negative resistor element which has characteristics that the higher(lower) the temperature, the lower(higher) the resistance.
- When the compressor is heated, the resistance of the OH thermistor becomes low and \oplus 5V is divided by OH thermistor and R301 and the voltage at pin 74 of microcomputer.
- Compare the voltage at microcomputer pin (74) and setting value stored inside. If the value exceed the set value, microcomputer will judge that the compressor is overheated and stop the operation.
- When frost is formed on the outdoor heat exchanger, the temperature at the exchanger drops abruptly. Therefore the resistance of the DEF thermistor becomes high and the voltage at pin 70 of micro computer drops. If this voltage becomes lower than the set value stored inside, microcomputer will enter the defrost control.
- During defrost operation, the microcomputer will transfer the defrosting condition command to indoor unit via SDO pin of interface of IF transmission output.
- The microcomputer read the outdoor temperature by Outside Air thermistor and transfer it to the indoor unit, thus controlling the compressor rotation speed according to the set value in the EEPROM of indoor unit and switching the operation mode (outdoor fan on/off etc.) to DRY mode.

Below table show the typical values of outdoor temperature in relation to the voltage.

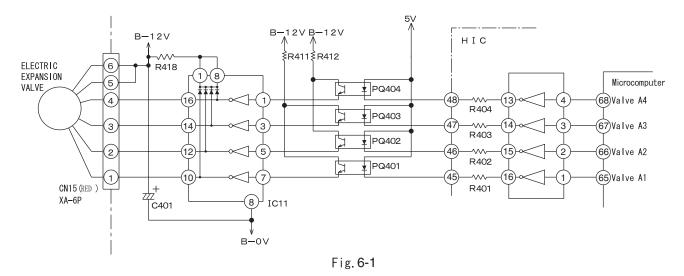
Table 5-1						
Outside Air Temperature (°C)	-10	0	10	20	30	40
Voltage at both side of R3O3 (V)	1.19	1.69	2. 23	2. 75	3.22	3. 62

<Reference>

When the thermistor is open open condition or disconnect, microcomputer pin 707273 are approx.0V; When thermistor is shorted, they are approx.5V and LD301 will blink 7 times.

However, an error is detected when only the OH thermistor is shorted and will enter blinking mode after 12 minutes start the compressor operation.

6. Electric expansion valve circuit



- The electric expansion value is driven by DC12V. Power is supplied to 1 or 2 phases of 4-phase winding to switch magnetic pole of winding in order to control the opening degree.
- Relationship between power switching direction of phase and open/close direction is shown below. When power is supplied, voltages at pins ④ to ① of CN15 are about 0.9V and 12V when no power is supplied. When power is reset, initial operation is performed for 10 or 20 seconds.During initial operation, measure all voltages at pin ④ to ① of CN15 by using a multimeter. If there is any pin with voltage that has not changed from 0.9V or 12V, expansion valve or microcomputer is broken.
- Fig. 6-2 shows logic waveform when expansion valve is operating.

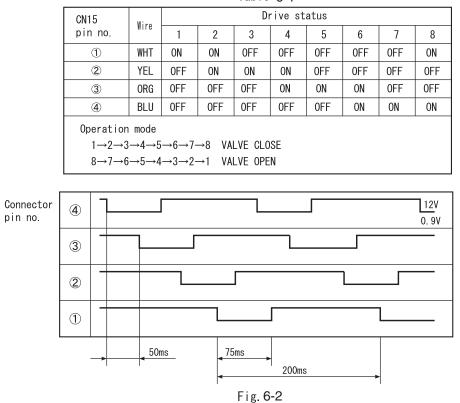
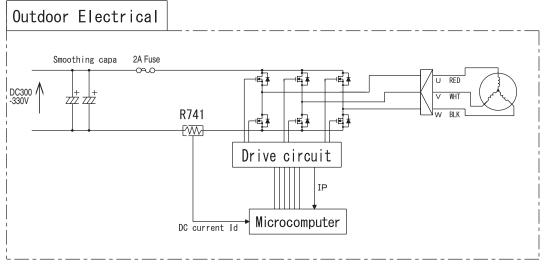


Table 6-1

With expansion valve control, opening degree is adjusted to stabilize target temperature by detecting compressor head temperature. The period of control is about once per 20 seconds and output a few pulse.

7. Outdoor DC fan motor control circuit

• This model is built with DC fan motor control circuit inside outdoor electrical unit.





This DC fan motor is control by outdoor microcomputer that follow the operating instruction received from indoor microcomputer. The DC current that flow from R741 will presume actual operation speed and control the rotation to follow the operating instruction. Based on this DC current it will detect a over current and other fan motor failure.

(1) Fan motor speed controller during starting

Due to the interference of strong wind etc., operation movement is changed based on fan direction and rotation speed as shown below during starting of operation. In addition, the fair wind is define as wind that blow to outside direction using Mouth Ring part.

At strong and contrary wind ... The rotational speed is not controlled as to protect the equipment

and fan will rotate reversely depend on the wind. Automatically

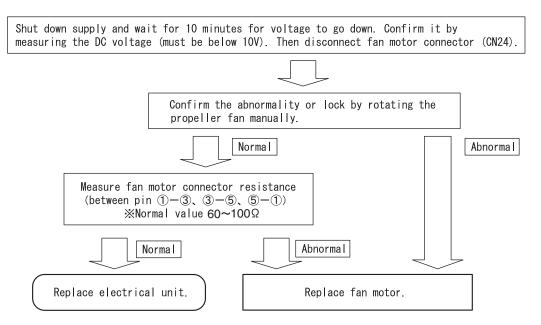
	start when wind condition become weak.
At contrary wind	The rotational speed is controlled in fair wind direction after it
	slowly reduce the speed and finally stop.
At fair wind	The rotational speed is controlled as it is.
At strong fair wind	The rotational speed is not controlled as to protect the equipment
	and fan will rotate reversely depend on the wind. Automatically
	start when wind condition become weak.

(2) Fan motor speed controller during unit operating

There is a case where fan rpm is reducing during rotating caused by interference of strong wind If this condition continue in long period, fan will stop rotating. (LD301 : 11 times blinking) The unit will restart according to control as per during start (1).

- (3) Method of confirming self diagnosis LD301 lamp : 12 times blinking If the unit stop and LD301 on the pwb blinking 12 times [fan lock stop is detected], follow below steps to confirm it.
 - Fan lock stop is detected when something has disturb the fan rotation by inserting material into propeller fan or ice has growing inside outdoor unit caused by snow. Remove it if found something is bloking the fan.
 - 2. Confirmed that CN24 connector is securely inserted. Fan lock stop is detected also when connector is not properly inserted. Please securely insert if found any disconnection.
 - 3. Fan lock stop also can be detected where strong wind blown surrounding the unit. Please confirm after restart the unit. (It may take few minutes to operate the compressor) It is not a malfunction of electrical unit or fan motor if the unit run continuesly after restart the unit.
 - 4. Check fan motor condition as below procedure.

[Checking Fan Motor] procedure



5. Reconnect again fan motor connector (CN24).

%Please confirm above checking procedure if found 2A fuse blown.

If fan motor is broken, replace both electrical unit and fan motor.

Caution

*Beware of electric shock due to high voltage when conducting an operation check. Power supply for DC fan motor and compressor is common (DC300-330V).

MODEL RAC-42/50WPD

1. Power Circuit

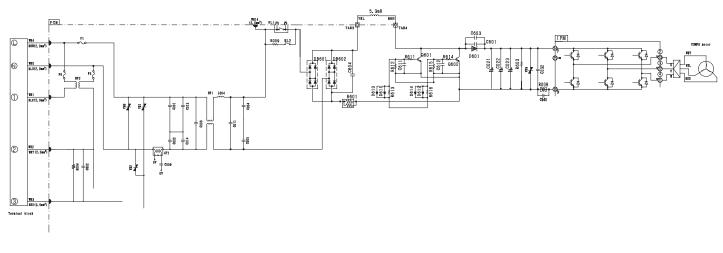


Fig 1-1

% This circuit full-wave rectifies 230VAC applied between terminals L and N and boosts it to a required voltage with the IPM to create a DC voltage.

The voltage become 300-330V when the compressor is operated.

- ※ Importance component
- (1) Intelligence Power Module (IPM)A module that constitute by an inverter part.
- (2) Diode Stack (DB601, DB602)These rectify the 230VAC from terminal L and N to a DC power supply.

<Reference>

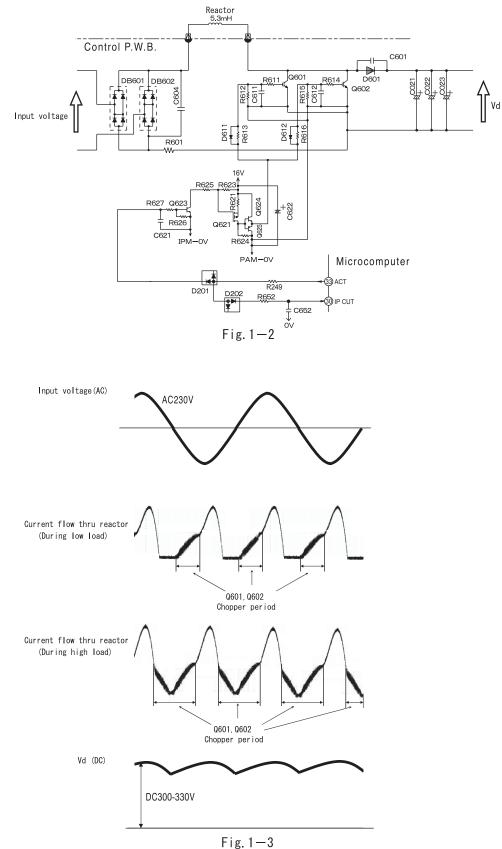
In case of Intelligence Power Module malfunction or connection failure immediately after compressor starts, its may stop due to error of [abnormal low speed], [switching failure],[Ip stop] and others.

<Reference>

If diode stack (DB601,DB602) are faulty, DC voltage may not be generated and the compressor may not operate at all. Also be aware that the 25A fuse might have blown.

(3) Smoothing capacitors (C021-C023,500 μ F,450V)

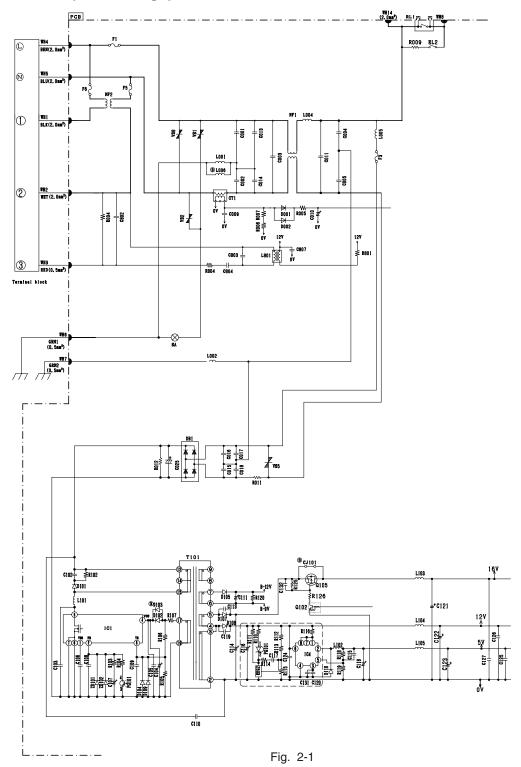
This smoothes (averages) the voltage rectified by the diode stack.



(4) IGBT to improve efficiency (Q601,Q602)

It will improve the efficiency during compressor load become heavy when current flow thru the chopper period of Q601, Q602.

2. Power circuit (Low voltage)



- The 230V AC voltage is rectified to DC voltage (B-12V,16V,12V,5V) pass through switching control IC (ICI), switching transformer.
 - (1) B-12V Power supply for electrical expansion valve.
 - (2) 16V Power supply for IPM driver circuit of compressor and fan motor, IGBT action.
 - (3) 12V Power supply for 4 way valve relay, power relay, inrush current relay,motor current amplification,
 - (4) 5V Power supply for microcomputer, peripheral circuits.

Main parts

(1) C001,C002,C003,C004,C005,C011,C013,C014, NF1

These absorb electrical noise generated during operation of compressor and also absorb external noise entering from power line to protect electronic parts.

- (2) Surge Absorber, Varistor1,2,5,8. These absorbs external power surge.
- (2)

IC4 DC/DC convertor IC (DC12V → DC5V).

3. P.W.B. for power circuit

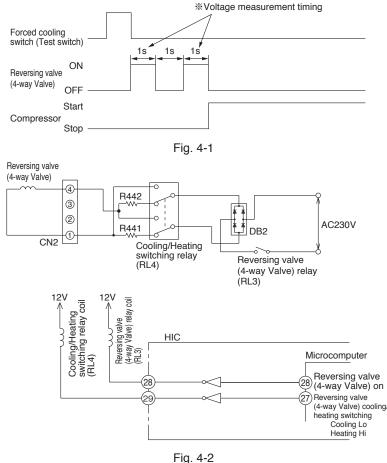
Voltage specification of power circuit as shown in below table. <Checking point>

	• • •			
Output	Spec	Main Ioad	Measuring point	Example of possible failure mode.
5V 0/P	5 ±0. 4V	Micon, Thermistor	Tester⊕ : L105 (JUMPER) Tester⊖ : D110 (EARTH)	Outdoor not operate, no blinking indication
12V 0/P	12 ^{±0.5V}	Micon, IC2,3,4 Relay circuit	Tester⊕ : L104 (JUMPER) Tester⊖ : D110 (EARTH)	Outdoor not operate, no blinking indication
16V 0/P	$15.5^{+1.5V}_{-1.0V}$	IPM for Comp IPM for DC fan	Tester⊕ : L103 (JUMPER) Tester⊝ : D110 (EARTH)	Stop : LD301 3,4 or 12 times blinking
B-12V O/P	13 ^{+2.5V} -1.0V	Expansion valve	Tester⊕ : R418(B-12V) Tester⊝ : C401("-")	Stop : LD301 5 times blinking

* Power circuit for P.W.B can consider normal if the result is satisfied with above specification.

4. Reversing valve (4-way valve) control circuit

- This model is equipped with a reversing valve (4-way Valve).
- The reversing valve (4-way Valve) "slides" the valve in the specified direction for each operating mode and switches the route of refrigerant and holds the route with a built-in permanent magnet.
- According to an operation command from the indoor unit microcomputer, the reversing valve (4-way Valve) control circuit applies current to the reversing valve (4-way Valve) coil in the specified direction, for each operating mode and slides the valve.
- Just before the compressor starts operation, the current is applied twice at the interval of 1 sec as shown in Fig. 4-1.
- During forced cooling operation, just after the forced cooling switch turns on, the current is applied twice at the interval of 1 sec as shown in Fig. 4-1.
- When the operation stops, the position of the valve before the stop is held.



• Before checking the application of current to the reversing valve (4-way Valve), disconnect the connector (CN2) and measure the resistance of both ends of the connector, to see if it is $[2500\Omega \pm 10\%]$. Only when the resistance is normal, check the application of current using the following procedures.

If the resistance is abnormal, it is caused by either; breakage of a lead wire, or failure of the reversing valve (4-way Valve).

• The voltage, when measured by a tester during the application of current to the reversing valve (4-way Valve) (when the voltage is measured)

*Switches the indoor unit to the "Ion Mist operation and air cleaning operation", and keep pressing the "Test switch" of the outdoor unit electrical part from 1 sec to below 5 sec (while the self-diagnosis lamp LED301 is on).

Afterwards, when the "Test switch" is released, the application of current starts after 1 sec elapses. (Forced cooling operation)

(Operating mode	Cooling operation (including forced cooling operation)	(Reference) Heating operation
	er and CN2 terminal ection point	\oplus terminal of tester to CN2 pin $\textcircled{4}$ \ominus terminal of tester to CN2 pin $\textcircled{1}$	\oplus terminal of tester to CN2 pin \bigcirc terminal of tester to CN2 pin $\textcircled{4}$
f testers	Analog tester	The tester indicates about 80 VDC and returns to 0 V, and indicates about 80 VDC again.	The tester indicates about 160 VDC and returns to 0 V, and indicates about 160 VDC again.
Types of	Digital tester	The tester indicates a large value for an instant and returns to 0 V, and indicates a large value again.	The tester indicates a large value for an instant and returns to 0 V, and indicates a large value again.

*In each operating mode, if the tester is reverse-connected to the CN2 terminal,

the tester indicates a value on the - (negative) side.

• At the voltage measurement timing, when the voltage is measured with a tester, if the tester indicates the values as shown in the table above, the circuit is functioning normally. (Each tester indicates values differently. Since it is often difficult to read the values of a digital tester, it is recommended to measure voltage with an analog tester.)

*Since the current is applied only twice in 1 sec, if the timing is missed, correct operations cannot be measured.

- %If the main body of the reversing valve (4-way Valve) is functioning normally, it clicks twice synchronously with the voltage measurement timing.
- If this sound is heard, the reversing valve (4-way Valve) is functioning normally.

% If the checking of the application of current becomes abnormal, it is a failure of an electrical part.

5. Temperature Detection Circuit

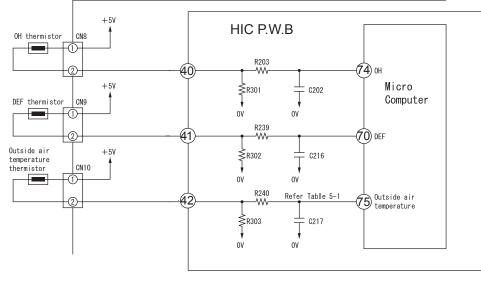


Fig. 5-1

- OH thermistor circuit detect the temperature at the surface of compressor head, DEF thermistor circuit detect the defrosting operation temperature.
- A thermistor is a negative resistor element which has characteristics that the higher(lower) the temperature, the lower(higher) the resistance.
- When the compressor is heated, the resistance of the OH thermistor becomes low and \oplus 5V is divided by OH thermistor and R301 and the voltage at pin 74 of microcomputer.
- Compare the voltage at microcomputer pin (74) and setting value stored inside. If the value exceed the set value, microcomputer will judge that the compressor is overheated and stop the operation.
- When frost is formed on the outdoor heat exchanger, the temperature at the exchanger drops abruptly. Therefore the resistance of the DEF thermistor becomes high and the voltage at pin 70 of micro computer drops. If this voltage becomes lower than the set value stored inside, microcomputer will enter the defrost control.
- During defrost operation, the microcomputer will transfer the defrosting condition command to indoor unit via SDO pin of interface of IF transmission output.
- The microcomputer read the outdoor temperature by Outside Air thermistor and transfer it to the indoor unit, thus controlling the compressor rotation speed according to the set value in the EEPROM of indoor unit and switching the operation mode (outdoor fan on/off etc.) to DRY mode.

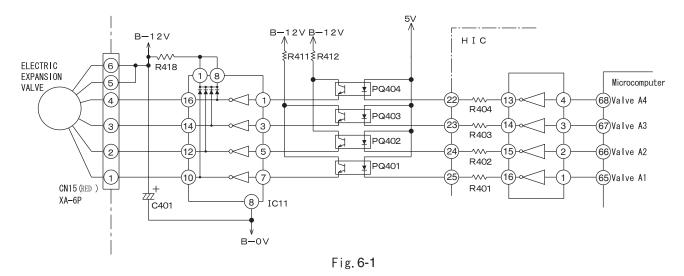
Below table show the typical values of outdoor temperature in relation to the voltage.

Table 5-1						
Outside Air Temperature (°C)	-10	0	10	20	30	40
Voltage at both side of R3O3 (V)	1.19	1.69	2. 23	2.75	3.22	3. 62

When the thermistor is open open condition or disconnect, microcomputer pin 707475 are approx.OV; When thermistor is shorted, they are approx.5V and LD301 will blink 7 times.

However, an error is detected when only the OH thermistor is shorted and will enter blinking mode after 12 minutes start the compressor operation.

6. Electric expansion valve circuit



- The electric expansion value is driven by DC12V. Power is supplied to 1 or 2 phases of 4-phase winding to switch magnetic pole of winding in order to control the opening degree.
- Relationship between power switching direction of phase and open/close direction is shown below. When power is supplied, voltages at pins ④ to ① of CN15 are about 0.9V and 12V when no power is supplied. When power is reset, initial operation is performed for 10 or 20 seconds.During initial operation, measure all voltages at pin ④ to ① of CN15 by using a multimeter. If there is any pin with voltage that has not changed from 0.9V or 12V, expansion valve or microcomputer is broken.
- Fig. 5-2 shows logic waveform when expansion valve is operating.

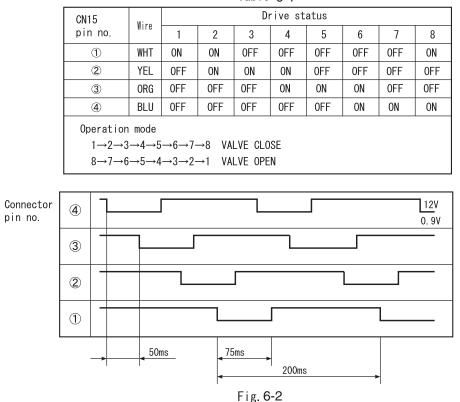
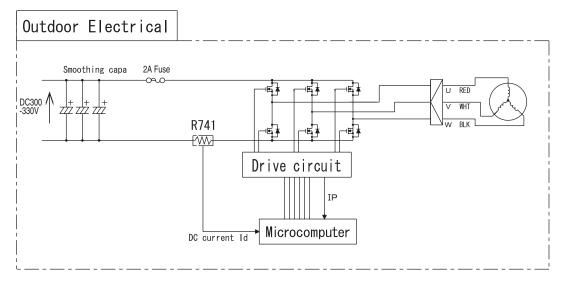


Table **6-1**

With expansion valve control, opening degree is adjusted to stabilize target temperature by detecting compressor head temperature. The period of control is about once per 20 seconds and output a few pulse.

7. Outdoor DC fan motor control circuit

• This model is built with DC fan motor control circuit inside outdoor electrical unit.





This DC fan motor is control by outdoor microcomputer that follow the operating instruction received from indoor microcomputer. The DC current that flow from R741 will presume actual operation speed and control the rotation to follow the operating instruction. Based on this DC current it will detect a over current and other fan motor failure.

(1) Fan motor speed controller during starting

Due to the interference of strong wind etc., operation movement is changed based on fan direction and rotation speed as shown below during starting of operation.

In addition, the fair wind is define as wind that blow to outside direction using Mouth Ring part. At strong and contrary wind ... The rotational speed is not controlled as to protect the equipment

and fan will rotate reversely depend on the wind. Automatically

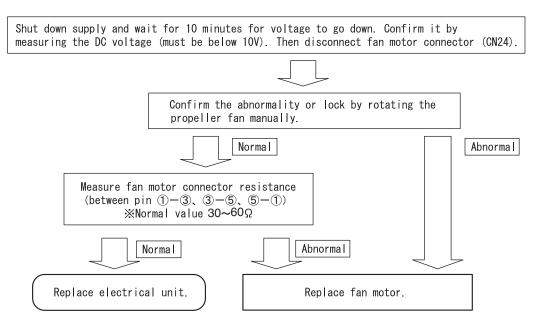
start when wind condition become weak.				
At contrary wind	The rotational speed is controlled in fair wind direction after it			
	slowly reduce the speed and finally stop.			
At fair wind	The rotational speed is controlled as it is.			
At strong fair wind	The rotational speed is not controlled as to protect the equipment			
	and fan will rotate reversely depend on the wind. Automatically			
	start when wind condition become weak.			

(2) Fan motor speed controller during unit operating

There is a case where fan rpm is reducing during rotating caused by interference of strong wind If this condition continue in long period, fan will stop rotating. (LD301 : 11 times blinking) The unit will restart according to control as per during start (1).

- (3) Method of confirming self diagnosis LD301 lamp : 12 times blinking If the unit stop and LD301 on the pwb blinking 12 times [fan lock stop is detected], follow below steps to confirm it.
 - Fan lock stop is detected when something has disturb the fan rotation by inserting material into propeller fan or ice has growing inside outdoor unit caused by snow. Remove it if found something is bloking the fan.
 - 2. Confirmed that CN24 connector is securely inserted. Fan lock stop is detected also when connector is not properly inserted. Please securely insert if found any disconnection.
 - 3. Fan lock stop also can be detected where strong wind blown surrounding the unit. Please confirm after restart the unit. (It may take few minutes to operate the compressor) It is not a malfunction of electrical unit or fan motor if the unit run continuesly after restart the unit.
 - 4. Check fan motor condition as below procedure.

[Checking Fan Motor] procedure



5. Reconnect again fan motor connector (CN24).

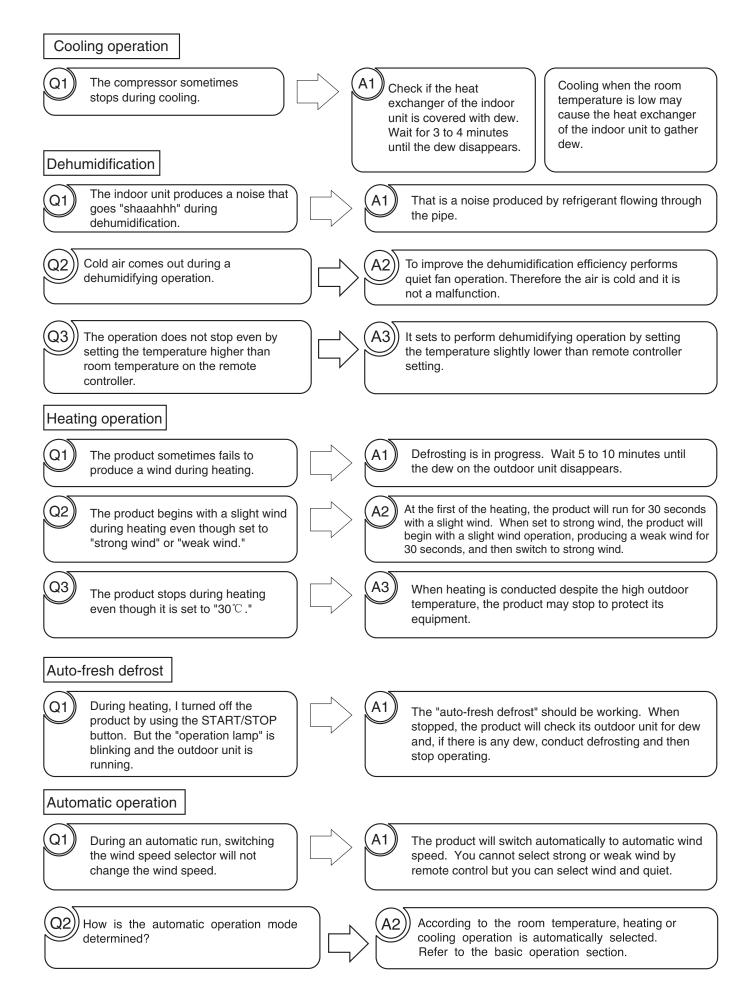
%Please confirm above checking procedure if found 2A fuse blown.

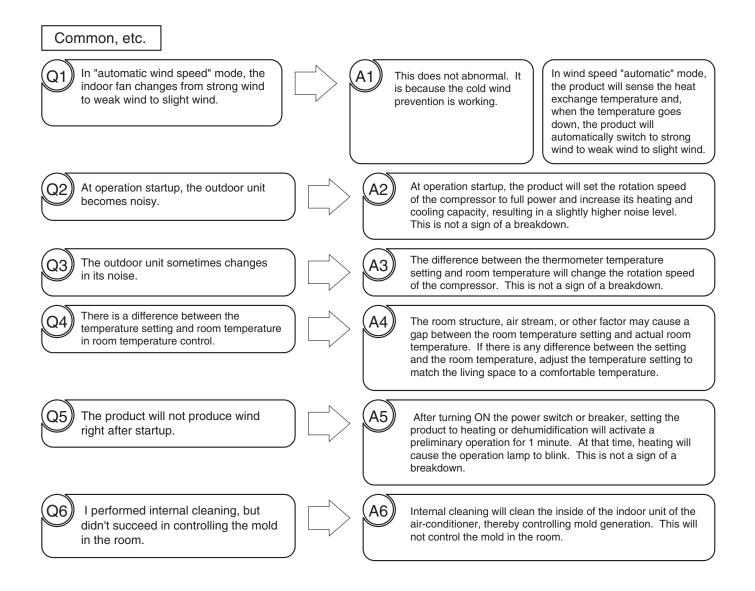
If fan motor is broken, replace both electrical unit and fan motor.

Caution

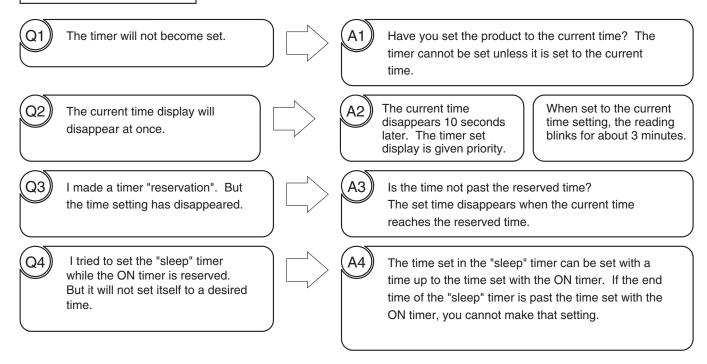
*Beware of electric shock due to high voltage when conducting an operation check. Power supply for DC fan motor and compressor is common (DC300-330V).

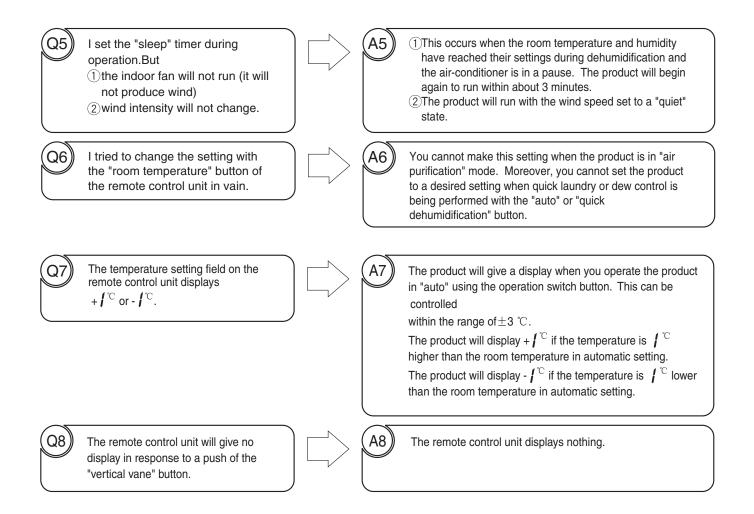
SERVICE CALL Q&A





Wireless remote control

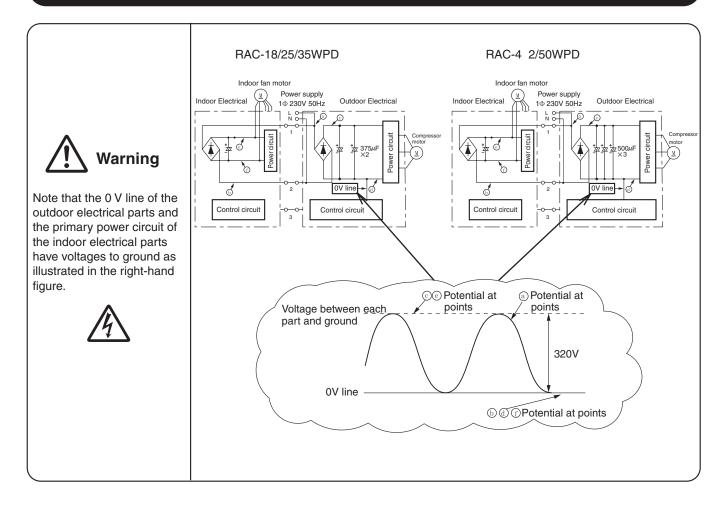


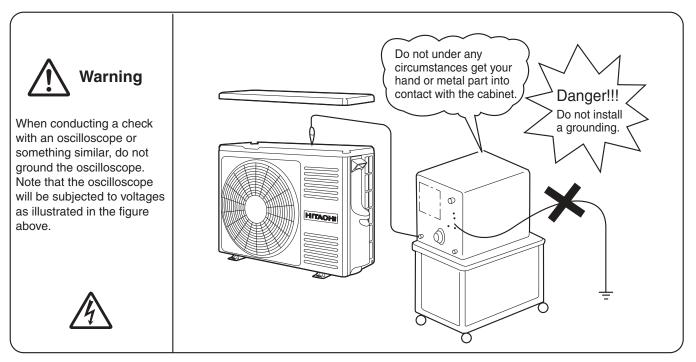


TROUBLE SHOOTING

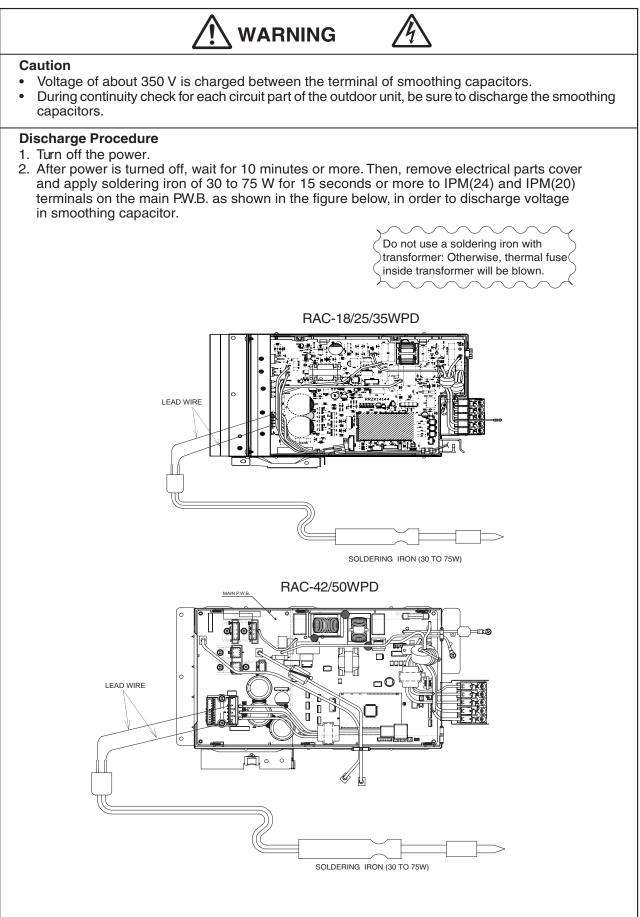
MODEL RAC-18/25/35/42/50WPD

Inspection instructions





DISCHARGE, PROCEDURE AND POWER SHUT OFF METHOD FOR POWER CIRCUIT



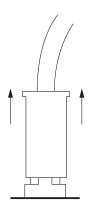
Other instructions

(1) Detaching and reattaching the receptacles for tab terminal

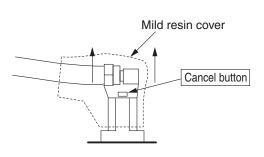
All the receptacles for connecting tab terminals are with a locking mechanism. Forcibly pulling any such receptacle without unlocking it will destroy it. Be on guard.

When reconnecting it, insert it securely all the way home.

· Receptacle types and how to unlock them



Vertical (with a resin case) Hold the resin case and pull it out.

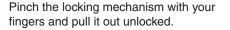


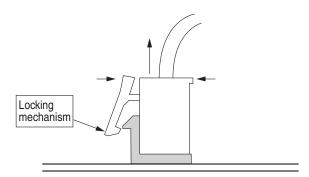
Horizontal (with a mild resin cover)

Hold the cancel button down on the mild resin cover while pulling it out.

(2) Detaching and reattaching the board connector

The product comes equipped with many board connectors provided with lock mechanism. Forcibly pulling any such part without unlocking it will destroy it. Be on guard. When reconnecting it, insert it securely all the way home.





(3) Do not detach or reattach the connectors while energized

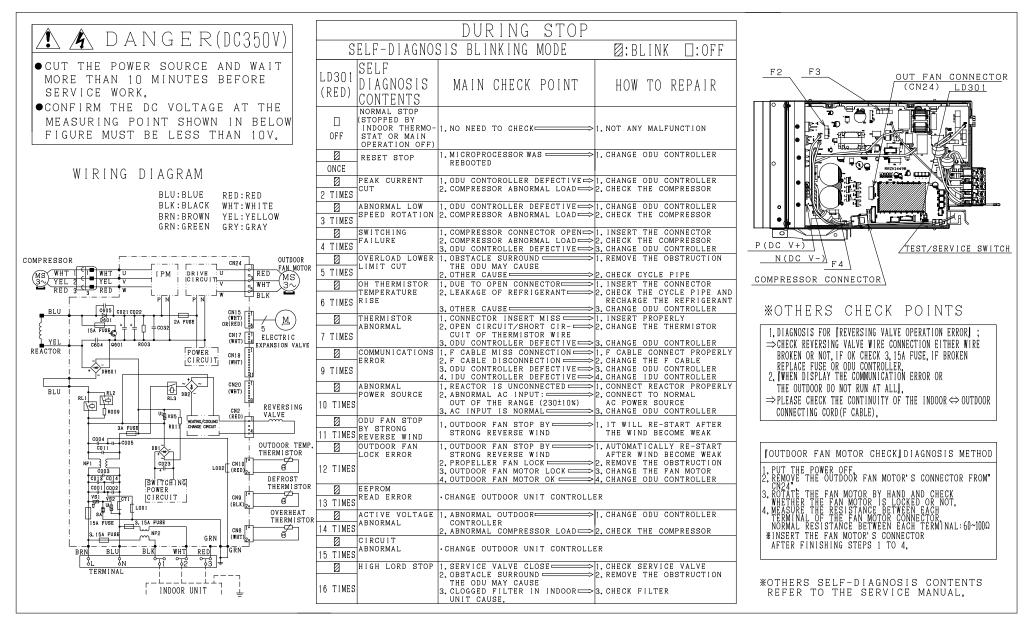
Do not under any circumstances detach or reattach the connectors while energized. That would destroy the board components and fan motor. For both the indoor and outdoor boards, ensure that the smoothing capacitor has discharged its electricity fully before you do your work.

N⁰	Function	Description
1	[Display on the outdoor unit side]	 The failure mode detected on the outdoor unit side is displayed by blinking the "LD301". Detecting a failure will stop the outdoor unit and keep blinking the LD301 until it is restarted. (The communication error will persist until the communication is reestablished.)
2	Self-diagnosis memory	 The failure modes detected on the indoor and outdoor unit sides are stored in the nonvolatile memory of the indoor unit and can be read later on. (The memory will remain even after power-off.) The failure modes detected on the outdoor unit side are written in memory every time any such mode occurs. The failure mode can therefore be detected on the indoor unit side without waiting for the retry frequency to reach the display of the indoor unit lamp. Moreover, the normal self-diagnosis display function which rarely occurs will store and display failure modes that do not end up displaying the indoor unit lamp. (Any such mode may be unable to be stored if indoor or outdoor communications is in a failure.) There is a function for deleting memory. Once you clear the memory and run the product for several days, you can read the failure modes and check them, thereby detecting the less frequent failure phenomena. Failure modes can be checked by both the blinking of the lamp of the indoor unit and the display of the remote control liquid crystal display.

**The "self-diagnosis function of the communication circuit" available in our conventional models is now incorporated as part of the normal self-diagnosis function. In the case of a failure in the communication circuit, you do not have to conduct a special operation and the operations can be automatically divided into 3 blinking operations and 12 blinking operations of the timer lamp. However, a strong external noise may have resulted in 12 times of blinking.

SELF-DIAGNOSIS LIGHTING MODE

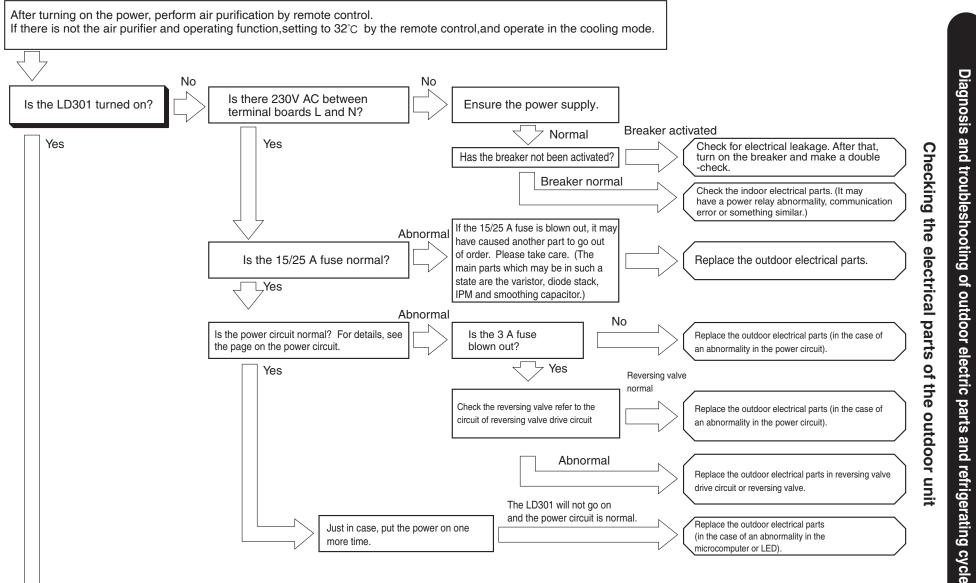
MODEL RAC-18/25/35WPD

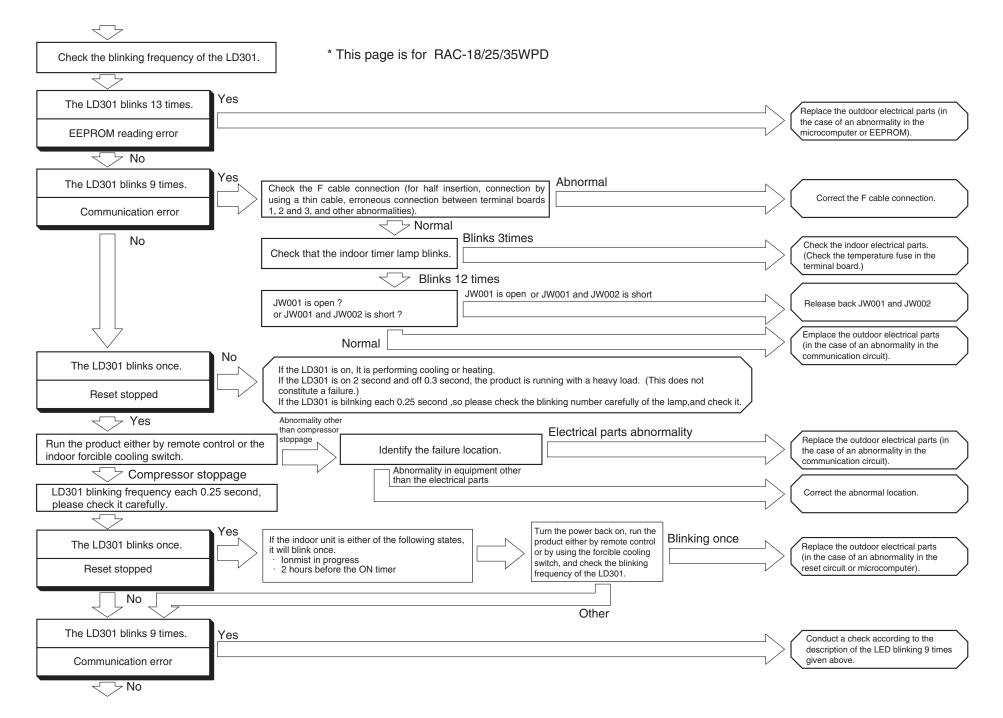


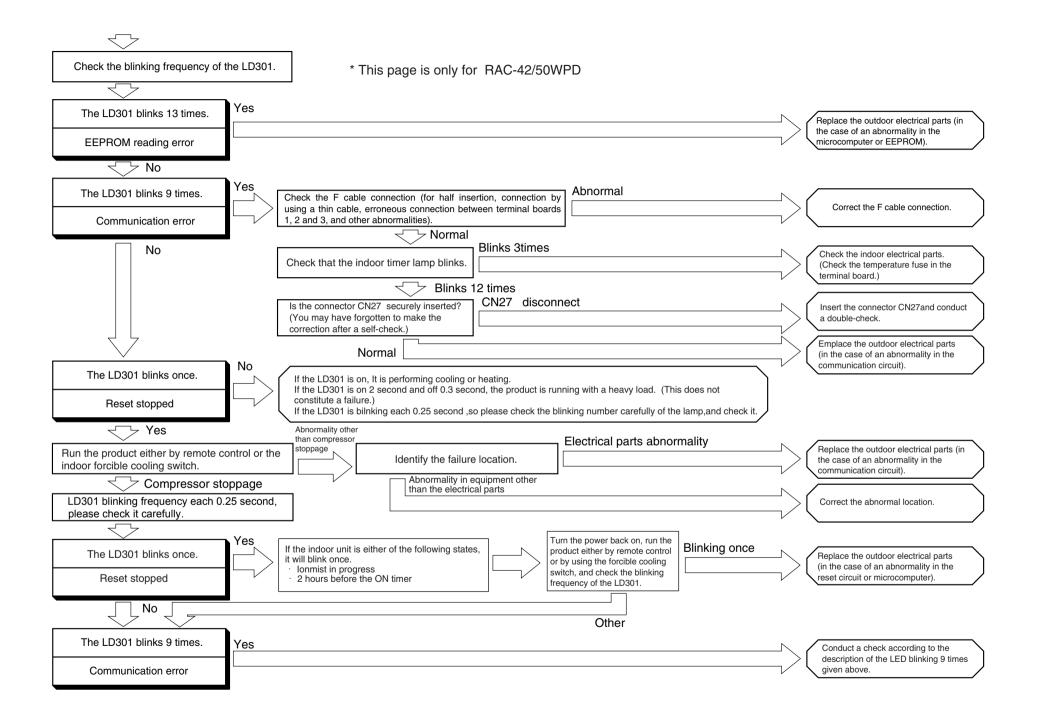
SELF-DIAGNOSIS LIGHTING MODE

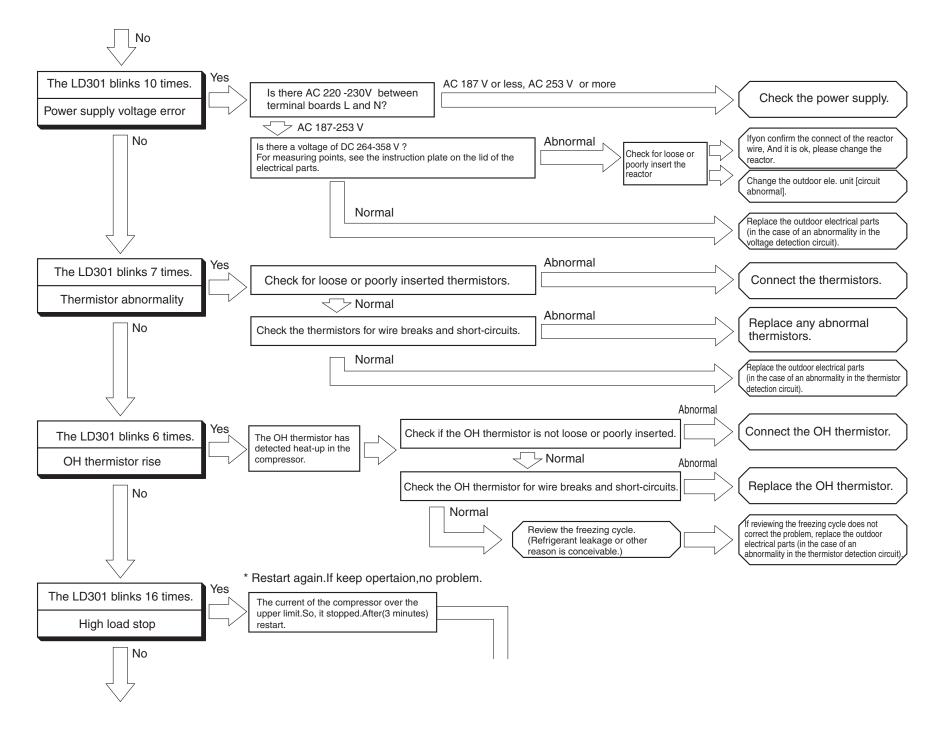
MODEL RAC-42/50WPD

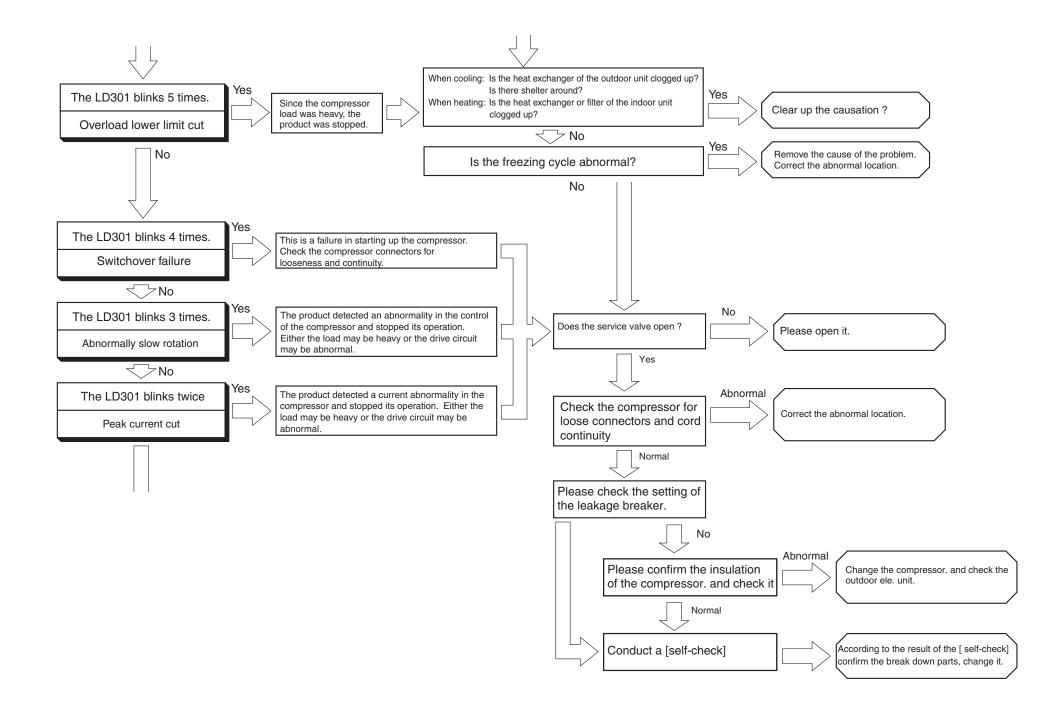
Image: Construct the power source and wait more than 10 minutes before service work. DC V+(1PM 24) Image: Construct the power source and wait service work. DC V+(1PM 24) Image: Construct the power source and wait service work. DC V+(1PM 24) Image: Construct the power source and wait service work. DC V+(1PM 24) Image: Construct the power source and wait service work. DC V-(1PM 20) Image: Construct the power source service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power service work. DC V-(1PM 20) Image: Construct the power s	R (GN24)
DURING STOP	WIRING DIAGRAM blu:blue red:red brn:brown yel:yellow blk:black wht:white grn:green gry:gray
SELF-DIAGNOSIS BLINKING MODE 🛛 : BLINK : OFF	
LD301 (RED) SELF DIAGNOSIS MAIN CHECK POINT HOW TO REPAIR CONTENTS	
INDOOR THERMO- 1. NO NEED TO CHECK OFF STAT OR MAIN OPERATION OFF) 1. NOT ANY MALFUNCTION	
Image: Constraint of the second sec	
☑ PEAK CURRENT 1. ODU CONTOROLLER DEFECTIVE⇒ 1. CHANGE ODU CONTROLLER 2 TIMES CUT 2. COMPRESSOR ABNORMAL LOAD⇒ 2. CHECK THE COMPRESSOR	
ABNORMAL LOW 1. ODU CONTROLLER DEFECTIVE ⇒ 1. CHANGE ODU CONTROLLER 3 TIMES SPEED ROTATION 2. COMPRESSOR ABNORMAL LOAD ⇒ 2. CHECK THE COMPRESSOR	
☑ SWITCHING 1. COMPRESSOR CONNECTOR OPEN⇒1. INSERT THE CONNECTOR 4 TIMES FAILURE 2. COMPRESSOR ABNORMAL LOAD⇒2. CHECK THE COMPRESSOR 3. ODU CONTROLLER 3. ODU CONTROLLER	CO13 CO14 GRY DEFROST
Image: Stress of the obstruction Image: Stress of the obstruction Stress of the obstruc	USI 1494 POWER USI 1492 CITI CIRCUIT USI 1492 <t< td=""></t<>
Image: Definition of the connector 1. Due to open connector 1. INSERT THE CONNECTOR 1. TEMPERATURE 2. LEAKAGE OF REFRIGERANT 2. CHECK THE CYCLE PIPE AND RECHARGE THE REFRIGERANT 6 TIMES RISE 3. OTHER CAUSE	s. 18. 1984 MP2 GRN GRN WHT RED BRN BLU BLU BLU BLU GRN
THERMISTOR 1. CONNECTOR INSERT MISS 1. INSERT PROPERLY ABNORMAL 2. OPEN CIRCUIT/SHORT CIR- 2. CHANGE THE THERMISTOR CUIT OF THERMISTOR WIRE	<u> </u>
Q TIMES 3. ODU CONTROLLER DEFECTIVE → 3. CHANGE ODU CONTROLLER	; INDOOR UNIT ; :
4. IDU CONTROLLER DEFECTIVE ⇒ 4. CHANGE IDU CONTROLLER ABNORMAL 1. REACTOR IS UNCONNECTED ⇒ 1. CONNECT REACTOR PROPERLY POWER SOURCE 2. ABNORMAL AC INPUT: ⇒ 2. CONNECT TO NORMAL IO TIMES OUT OF THE RANGE (230±10%)	[OUTDOOR FAN MOTOR CHECK]DIAGNOSIS METHOD I.PUT THE POWER OFF. 2. REMOVE THE OUTDOR FAN MOTOR'S CONNECTOR FROM CN24". 3. ROTATE THE FAN MOTOR BY HAND AND CHECK WHETHER THE FAN MOTOR IS LOCKED OR NOT. 4. MEASURE THE RESISTANCE BETWEEN EACH
Image: State Stop 3. AC INPUT IS NORMAL 3. CHANGE ODU CONTROLLER Image: Stop 1. OUTDOOR FAN STOP 1. IT WILL RE-START AFTER	WHETHER THE FAN MOTOR IS LOCKED OR NOT. 4. MEASURE THE RESISTANCE BETWEEN EACH TERMINAL OF THE FAN MOTOR CONNECTOR NORMAL RESISTANCE BETWEEN EACH TERMINAL 30~600
11 TIMES BY STRONG STRONG REVERSE WIND THE WIND BECOME WEAK Image: Durbook fan 1. OUTDOOR FAN STOP BY 1. AUTOMATICALLY RE-START LOCK ERROR STRONG REVERSE WIND AFTER WIND BECOME WEAK	*INSERT THE FAN MOTOR'S CONNECTOR
12 TIMES 2. PROPELLER FAN LOCK 2. REMOVE THE OBSTRUCTION 3. OUTDOOR FAN MOTOR LOCK 3. CHANGE THE FAN MOTOR 4. OUTDOOR FAN MOTOR VALUER 4. OUTDOOR FAN MOTOR VALUER	AFTER FINISHING STEPS 1 TO 4. #OTHERS CHECK POINTS
EFFROM 13 TIMES CHANGE OUTDOOR UNIT CONTROLLER	1. DIAGNOSIS FOR [REVERSING VALVE OPERATION ERROR] ; ⇒ CHECK REVERSING VALVE WIRE CONNECTION EITHER WIRE BROKEN OR NOT, IF OK CHECK 3, 15A FUSE, IF BROKEN REPLACE FUSE
☑ ACTIVE VOLTAGE 1. ABNORMAL OUTDOOR 1. CHANGE ODU CONTROLLER 14 TIMES ABNORMAL CONTROLLER 2. CHECK THE COMPRESSOR	OR ODU CONTROLLER. 2. [WHEN DISPLAY THE COMMUNICATION ERROR OR THE OUTDOOR DO NOT RUN AT ALL].
CIRCUIT ABNORMAL 15 TIMES	⇒ PLEASE CHECK THE CONTINUE OF THE INDOOR \Leftrightarrow OUTDOOR CONNECTING CORD (F CABLE).
	*OTHERS SELF-DIAGNOSIS CONTENTS REFER TO THE SERVICE MANUAL.

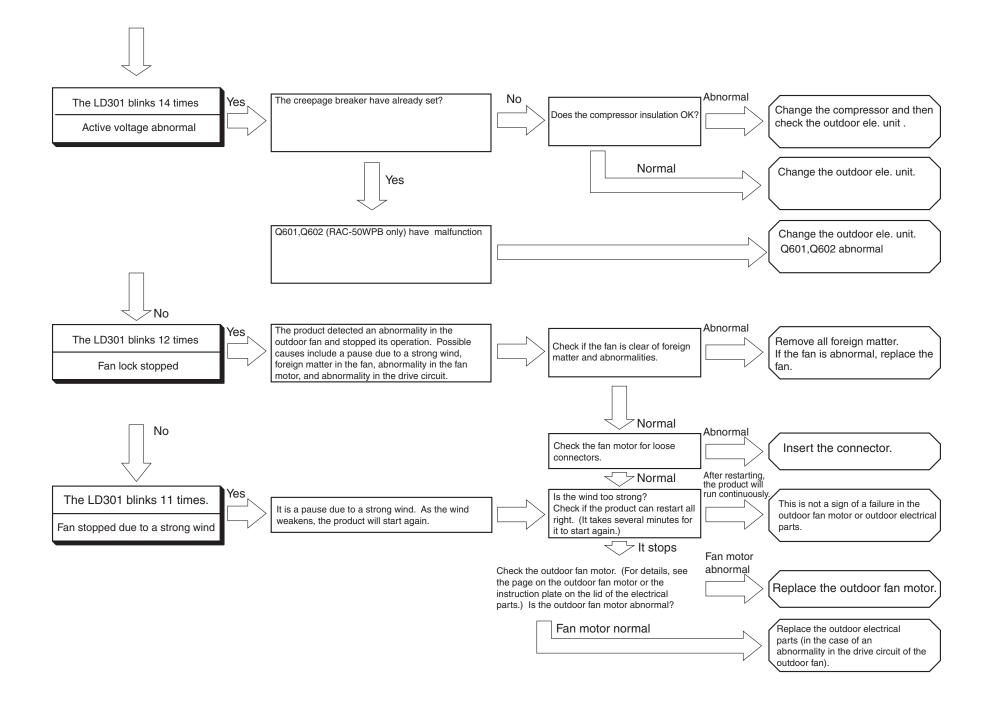








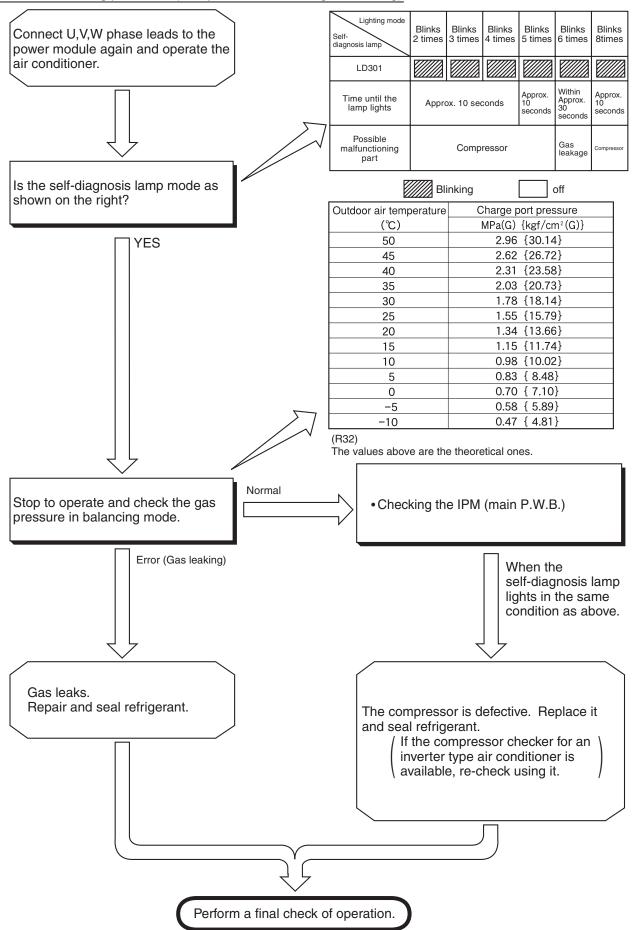




CHECKING THE REFRIGERATING CYCLE

(JUDGING BETWEEN GAS LEAKAGE AND COMPRESSOR DEFECTIVE)

1. Troubleshooting procedure (No operation, No heating, No cooling)



How to run the product with the outdoor unit test switch

If the indoor electrical parts is out of order and if you wish to run the outdoor unit

1. Turn on the outdoor terminal boards L and N (220-230 V AC).

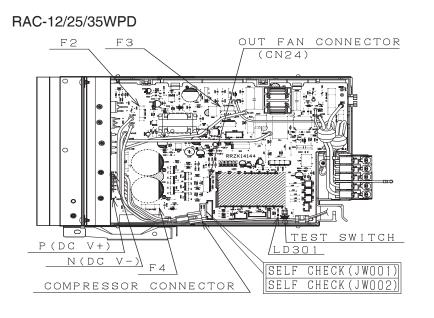
2. Confirm that the "LD301" blinks once from the terminal side of the outdoor unit. Afterwards (when about 30 sec elapses after the power turns on), confirm that the "LD301" changes to blinking 9 times (communication error).

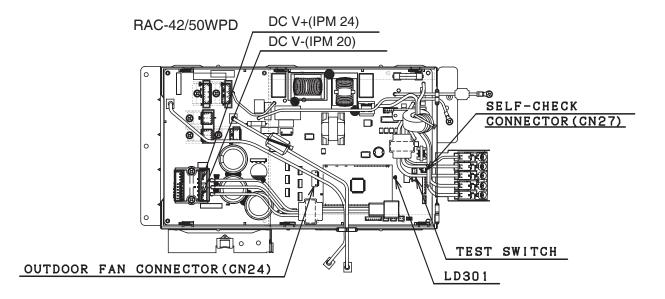
3. When the "LD301" is blinks 9 times, if you press the test switch, the "LD301" lights up.

If you release your finger from the test switch within 1 sec to 5 sec after pressing the switch, the forced cooling operation starts. %(If you press the test switch for 5 sec or longer, the self-check diagnosis starts. In this case, turn the power off and start the procedure from 1 again.)

%(For the initialization of the expansion valve, it may take 1 min until the operation starts.)

4. When you press the test switch again for 1 sec or longer, the unit stops the operation.



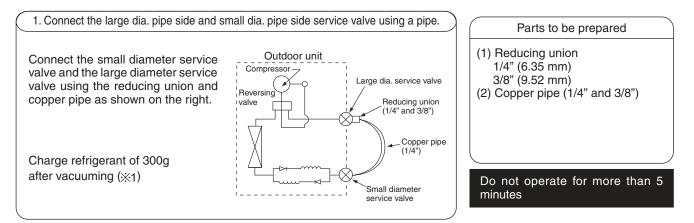


%Cautions

- 1. Applying power directly to the outdoor unit will cause a rush current to stress the outdoor unit. Therefore, if the indoor unit is not out of order, do not use the method descried in 2).
- 2. Before making the connections, be sure to turn off the breaker.
- 3. Do not under any circumstances run the product for more than 5 minutes.
- 4. Doing work with the compressor connector removed will cause the LD301 to blink 4 times. It will not start.
- 5. For another test run, turn off the breaker and turn it back on. (The test switch is accepted only once after power-on. After operation by remote control, it is not accepted.)
- 6. When the operation with the test switch is over, turn off the breaker and set the connectors back.

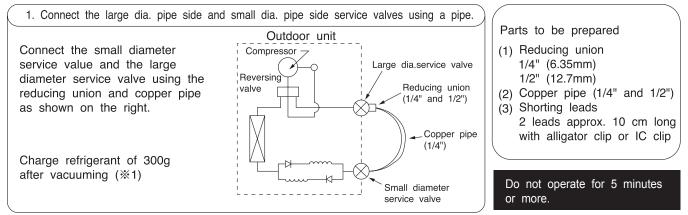
HOW TO OPERATE THE OUTDOOR UNIT INDEPENDENTLY

RAC-18/25/35WPD



The operation method is the same as "How to operate using the connector to servicing the outdoor unit". %1 The charging amount of 300g is equivalent to the load in normal operation.

RAC-42/50WPD



The operation method is the same as "How to operate using the connector to servicing the outdoor unit". %1 The charging amount of 300g is equivalent to the load in normal operation.

PARTS LIST AND DIAGRAM ک ک **OUTDOOR UNIT** ക MODEL: RAC-18WPD、RAC-25WPD、RAC-35WPD B -33 DE e ,32 F S. .38 \bigcirc .39 HTACH 10、 \circ **?**} P .30 É Ş $\overline{\mathbf{b}}$ \mathbf{O} φ Ď -15 Ð 48 -S

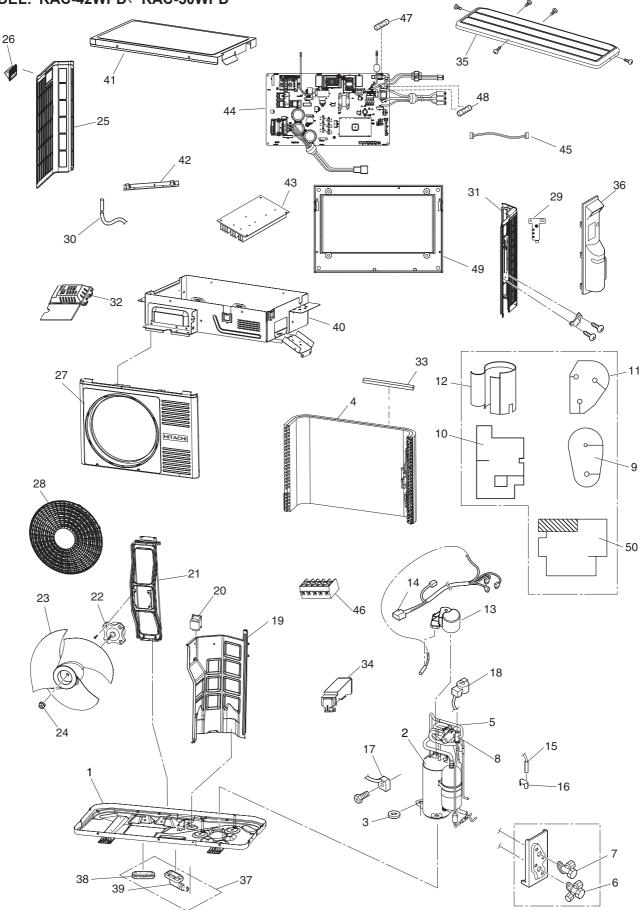
OUTDOOR UNIT

NO	JCH-WH PARTS NO	Q' TY/UNIT	PARTS NAME
1	HWRAC-35WPC A01	1	BASE
2	HWRAC-18WED A02	1	COMPRESSOR
3	HWRAC-25YH4 A04	3	PUSH NUT
4	HWRAC-18WPD A01	1	CONDENSER
5	HWRAC-18WPD A02	1	REVERSING VALVE
6	HWRAC-50WEA A06	1	2S-VALVE
7	HWRAC-10GH5 A03	1	3S-VALVE
8	HWRAC-SX10HAK A09	1	SOUND PROOF COVER ASSEMBLY
9	HWRAC-18WPD A03	1	ELECTRIC EXPANSION VALVE
10	HWRAC-25WXA A04	1	SOUND PROOF COVER ASSEMBLY
11	HWRAC-18WEB A07	1	O. L. R COVER
12	HWRAC-18WPD A04	1	SOUND PROOF COVER ASSEMBLY
13	HWRAC-18WED A06	1	CONNECTING CORD (COMP)
14	HWRAC-E10H2 A09	1	THERMISTOR (DEFROST)
15	HWRAC-25WX8 A02	1	THERMISTOR SUPPORT
16	HWRAC-25WXD A09	1	COIL (REVERSING VALVE)
17	HWRAC-50WED A07	1	COIL (EXPANSION VALVE)
18	HWRAC-18WPD A05	1	PARTITION
10	HWRAC-18WED A07	1	REACTOR 1
20	HWRAC-35WPB A05	1	SOUND PROOF COVER ASS' Y
20	HWRAC-14EH4 A08	1	FAN MOTOR SUPPORT
21	HWRAC-50WED A10	1	FAN MOTOR
23	HWRAC-18WED A09	1	PROPELLER FAN
23		1	NUT (PROPELLER. FAN)
24 25		1	
	HWRAC-25YH4 A25 HWRAC-25YH4 A26		SIDE COVER (L)
26		1	HANDLE
27	HWRAC-35WPC A08	1	FRONT COVER
28	HWRAC-E14H3 909	1	DISCHARGE GRILL
29	HWRAC-18WPD A06	1	SOUND PROOF COVER ASS' Y
30	HWRAC-18WPD A07	1	SOUND PROOF COVER ASS' Y
31	HWRAC-35WPC A09	1	ELECTRIC PARTS PLATE
32	HWRAC-18WPD A08	1	TERMINAL COVER
33	HWRAC-18WPD A09	1	FUSE (15A)
34	HWRAC-50WED A16	1	TERMINAL BOARD (5P)
35	HWRAC-25YHA5 A21	1	HEAT SINK (REGURATOR1)
	HWRAC-18WPD A10	1	P. W. B (CONTROL)
36	HWRAC-25WPD A01	1	P. W. B (CONTROL)
	HWRAC-35WPD A01	1	P. W. B (CONTROL)
37	HWRAC-35WPC A11	1	SUPPORT (P. W. B CONTROL)
38	HWRAC-18WPD A11	1	SOUND PROOF COVER ASS'Y
39	HWRAC-18WPD A12	1	SOUND PROOF COVER ASS'Y
40	HWRAC-25YH4 A48	1	BUSH ASSEMBLY
41	HWRAC-18WPD A13	1	ELECTRIC PARTS COVER
42	HWRAC-14EH4 A16	1	TOP COVER
43	HWRAC-18WPD A14	1	SERVICE VALVE COVER
44	HWRAC-E14H3 915	1	SIDE COVER (R)
45	HWRAC-14EH4 A15	1	COVER (OUT DOOR THERMISTOR)
46	HWRAC-E14H3 914	1	THERMISTOR (OUTDOOR TEMPERATURE)
47	HWRAC-25YH4 A50	1	DRAIN PIPE
48	HWRAC-25YH4 A49	1	BUSH
49	HWRAC-25WXD A11	2	FUSE (3. 15A)

PARTS LIST AND DIAGRAM

OUTDOOR UNIT

MODEL: RAC-42WPD RAC-50WPD



OUTDOOR UNIT

NO	JCH-WH PARTS NO	Q'TY/UNIT	PARTS NAME
1	HWRAC-50WPC A01	1	BASE
2	HWRAC-50WED A01	1	COMPRESSOR
3	HWRAC-50NX2 A04	3	PUSH NUT
4	HWRAC-50WEC A01	1	CONDENSER
5	HWRAC-42WPD A01	1	REVERSING VALVE
6	HWRAC-50WEA A05	1	SERVICE VALVE
7	HWRAC-50WEA A06	1	SERVICE VALVE
8	HWRAC-50WED A03	1	ELECTRIC EXPANSION VALVE
9	HWRAC-50WED A04	1	SOUND PROOF
10	HWRAC-50WPC A04	1	SOUND PROOF
11	HWRAC-50WEC A07	2	SOUND PROOF
12	HWRAC-42WPD A02	1	SOUND PROOF
13	HWRAC-25WXD A08	1	O. L. R COVER
13	HWRAC-50WEA A12	1	CONNECTING CORD (COMP)
14	HWRAC-50NX2 A16	1	THERMISTOR (DEFROST)
15	HWRAC-50NX2 A17	1	THERMISTOR (DEPROST)
17	HWRAC-25WXD A09	1	COIL (REVERSING VALVE)
18	HWRAC-50WED A07	1	COIL (EXPANSION VALVE)
19	HWRAC-50WED A08	1	PARTITION
20	HWRAC-50WED A09	1	REACTOR
21	HWRAC-50WEB A02	1	FAN MOTOR SUPPORT
22	HWRAC-42WPD A03	1	FAN MOTOR
23	HWRAC-50WEC A12	1	PROPELLER FAN
24	HWRAC-50NX2 A25	1	NUT (PROPELLER FAN)
25	HWRAC-50NX2 A26	1	SIDE COVER (L)
26	HWRAC-50NX2 A27	1	HANDLE
27	HWRAC-50WED A11	1	FRONT COVER
28	HWRAC-50WEC A14	1	DISCHARGE GRILL
29	HWRAC-50WEA A14	1	EARTH-PLATE
30	HWRAC-E14H3 914	1	THERMISTOR (OUTDOOR TEMPERATURE)
31	HWRAC-50WED A12	1	SIDE COVER (R)
32	HWRAC-18WSPA A24	1	TC-COVER
33	HWRAC-50WEC A15	1	H-SHEET
34	HWRAC-50WEC A16	1	TERMINAL COVER
35	HWRAC-SX18HAK A28	1	TOP COVER
36	HWRAC-50WED A13	1	SERVICE VALVE COVER
37	HWRAC-50NX2 A36	1	BUSH ASSEMBLY
38	HWRAC-50NX2 A37	2	BUSH
39	HWRAC-50NX2 A38	1	DRAIN PIPE
40	HWRAC-50WEC A17	1	ELECTRIC PARTS PLATE
41	HWRAC-50WED A14	1	ELECTRIC PARTS COVER
42	HWRAC-50WEB A07	2	SUPPORT2 (P. W. B.)
43	RAC-1F50KVY014	1	HEAT SINK
44	HWRAC-42WPD A04	1	P. W. B. (MAIN)
	HWRAC-50WPD A01	1	P. W. B. (MAIN)
45	HWRAC-50WEB A11	2	CORD (REACTOR)
46 47	HWRAC-50WED A16 HWRAC-50WED A17	1	TERMINAL BOARD (5P) FUSE (25A)
47	HWRAC-25WXD A11	2	FUSE (2.5A) FUSE (3.15A)
40	HWRAC-50WEB A13	1	SUPPORT1 (P. W. B.)
50	HWRAC-25WXD A04	1	SOUND PROOF
8			

HITACHI

RAC-18WPD RAC-25WPD RAC-35WPD RAC-42WPD RAC-50WPD

JCH-WH NO.0109E