



DVM PLUS IV

III. VENTILATION

1	ERV PLUS	157
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Energy Recovery Ventilation



1 ERV PLUS

(RHF***KHEA)

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Optional Accessories

Individual
Controllers



MWR-WE10

Humidifier



MVO-VA500100
MVO-VA100100

S-Plasma ion kit



MSD-EAN1

CO₂ sensor



MOS-C1

1-1. Specifications

1) Technical specifications

*Refer to following capacities when using the product with outdoor unit: RHF050KHEA : 3.6kW , RHF100KHEA : 7.1 kW

Model					RHF050KHEA	RHF100KHEA	
Power Supply				Ø, #, V, Hz	1, 2, 220~240, 50	1, 2, 220~240, 50	
Performance	Temp. Exchange Efficiency	Cooling	Turbo	-	70	70	
			high	-	70	70	
			low	-	74	74	
		Heating	Turbo	-	75	75	
			high	-	75	75	
			low	-	79	79	
	Effective Enthalpy Exchange Efficiency	Cooling	Turbo	-	60	62	
			high	-	60	62	
			low	-	66	68	
		Heating	Turbo	-	73	75	
			high	-	73	75	
			low	-	79	81	
Outside Air Processing Capacity		Cooling *1) (DX Coil/Element)	-	5.1(3.6/1.5)	11.5(7.1/3.4)		
		Heating *2) (DX Coil/Element)	-	6.5(4.0/2.5)	13.2(8.0/5.2)		
Fan	Airflow rate		Turbo/High/Low(UL)	CMH	500/500/360	1000/1000/690	
				CFM	294/294/211	588/588/406	
	External Static pressure		Turbo/High/Low	mmAq	16.3/10.2/8.7	15.3/9.2/7.6	
				Pa	160/100/85	150/90/75	
	Motor		Type	-	BLDC	BLDC	
			Output	W	180	70	
			Number of unit	EA	2	2	
Power	Power Input		Turbo	W	220	510	
					high	140	350
					low	90	235
	Current Input		Turbo	A	1.70	3.70	
					high	1.00	2.40
					low	0.60	1.60
Option Code				-	015617152380	0156171C2373	
Piping Connections	Liquid Pipe			Ø, mm	6.35	6.35	
				Ø, inch	1/4	1/4	
	Gas Pipe			Ø, mm	12.7	12.7	
				Ø, inch	1/2	1/2	
	Drain Pipe			Ø, mm	VP25 (OD32, ID25)	VP25 (OD32, ID25)	
				Ø, inch	VP25 (OD 1-1/4", ID 1")	VP25 (OD 1-1/4", ID 1")	
	Water Supply			Ø, mm	12.7	12.7	
Ø, inch				1/2	1/2		
Field Wiring	Power Source Wire			mm ²	1.5/2.5	1.5/2.5	
	Transmission Cable			mm ²	0.75 / 1.5	0.75 / 1.5	
Refrigerant	Type		-	-	R410A	R410A	
	Control Method		-	-	EEV	EEV	
Sound Pressure	Sound Level*4)		Turbo / High / Low	dBA	38.5/36/32	40.5/38/35	
Dimensions	Net Weight			kg	61.0	90.0	
	Shipping Weight			kg	75.2	107.5	
	Net Dimensions (W×H×D)			mm	1,553 x 270 x 1,000	1,763 x 340 x 1,135	
	Shipping Dimensions (W×H×D)			mm	1,847 x 349 x 1,300	2,027 x 428 x 1,424	
	Supply/Return/Exhaust/Outside Duct Flange (Ø)			mm	200	250	
Accessory	Air Filter			-	High Efficiency Filter(PP)	High Efficiency Filter(PP)	
Optional Accessory	Humidifier*3)		Type	-	Natural Evaporating Type	Natural Evaporating Type	
			Qty	EA	1	1	
			Amount	kg/h	2.7	5.4	
			Pressure Feed Water	MPa	0.02~0.49	0.02~0.49	
	S-Plasma ion kit			-	MSD-EAN1	MSD-EAN1	
	CO ₂ sensor			-	MOS-C1	MOS-C1	
	Humidity Sensor			-	Option	Option	
Ambient Condition	Around Unit			-	0~40°C DB, 80%RH or less	0~40°C DB, 80%RH or less	
	OA *5)			-	-15~40°C DB, 80%RH or less	-15~40°C DB, 80%RH or less	
	RA *5)			-	0~40°C DB, 80%RH or less	0~40°C DB, 80%RH or less	

* Specifications may be subject to change without prior notice for product improvement.

*1) Nominal cooling capacities are based on;

- Indoor temperature : 27°C DB, 19°C WB - Outdoor temperature : 35°C DB, 24°C WB, Equivalent refrigerant piping : 7.5m, Level differences : 0m

*2) Nominal heating capacities are based on;

- Indoor temperature : 20°C DB, 15°C WB

- Outdoor temperature : 7°C DB, 6°C WB, Equivalent refrigerant piping : 7.5m, Level differences : 0m

*3) Humidifying capacity is based on;

- Indoor temperature : 20°C DB, 15°C WB

- Outdoor temperature : 7°C DB, 6°C WB, Equivalent refrigerant piping : 7.5m, Level differences : 0m

*4) Sound pressure was acquired in a dead room. Thus actual noise level may be different depending on the installation conditions.

*5) OA: fresh air from outdoor. RA: return air from room.

1-2. Capacity tables

1) Cooling

TC : Total Capacity(kW), SHC : Sensible Heat Capacity(kW)

Model	Outdoor temperature (°C)		Indoor temperature													
			20 (°C, DB)		23 (°C, DB)		26 (°C, DB)		27 (°C, DB)		28 (°C, DB)		30 (°C, DB)		32 (°C, DB)	
	DB	WB	14 (°C, WB)		16 (°C, WB)		18 (°C, WB)		19 (°C, WB)		20 (°C, WB)		22 (°C, WB)		24 (°C, WB)	
500	10	4	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.3	2.7
	12	5.5	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.3	2.7
	14	7	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.3	2.7
	16	8.5	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.3	2.7
	18	10.5	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.3	2.7
	20	12	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	21	14	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	23	15	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	25	16	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	27	18	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	29	19	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	31	22	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	35	24	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	4.0	2.8	4.2	2.6
	37	26	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	3.9	2.7	4.2	2.6
	39	28	2.5	2.2	2.9	2.5	3.4	2.7	3.6	2.8	3.7	2.8	3.9	2.7	4.1	2.5
1000	42	29	2.5	2.2	2.9	2.5	3.4	2.7	3.5	2.7	3.6	2.6	3.7	2.6	3.9	2.4
	44	30	2.5	2.2	2.9	2.5	3.2	2.6	3.4	2.6	3.5	2.5	3.5	2.5	3.6	2.3
	10	4	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	8.0	5.7	8.5	5.4
	12	5.5	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.5	5.4
	14	7	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.5	5.4
	16	8.5	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	18	10.5	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	20	12	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	21	14	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	23	15	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	25	16	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	27	18	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	29	19	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	31	22	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	35	24	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.4	5.6	7.9	5.6	8.4	5.3
	37	26	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.3	5.5	7.8	5.5	8.2	5.2
	39	28	4.9	4.3	5.8	5.0	6.7	5.2	7.1	5.4	7.3	5.5	7.7	5.4	8.1	5.1
	42	29	4.9	4.3	5.8	5.0	6.7	5.2	6.9	5.3	7.0	5.4	7.3	5.3	7.6	4.9
	44	30	4.9	4.3	5.8	5.0	6.3	5.0	6.7	5.2	6.8	5.3	7.0	5.2	7.1	4.7

2) Heating

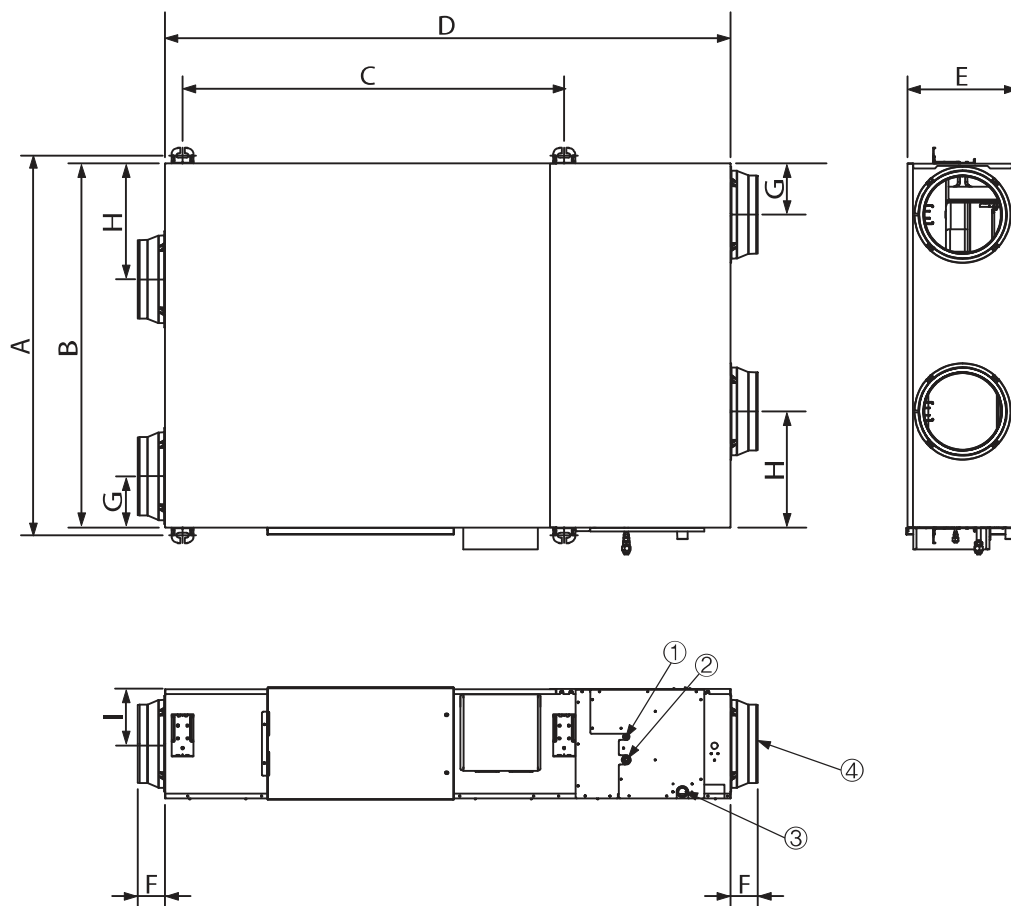
TC : Total Capacity(kW)

Model	Outdoor temperature (°C)		Indoor temperature (°C, DB)				
			16.0	18.0	20.0	22.0	24.0
	DB	WB	TC kW	TC kW	TC kW	TC kW	TC kW
500	-20	-21	-	-	-	-	-
	-17	-18	-	-	-	-	-
	-15	-16	-	-	-	-	-
	-12	-13	-	-	-	-	-
	-10	-11	2.9	2.9	2.9	2.8	2.8
	-7	-8	3.1	3.1	3.0	3.0	2.9
	-5	-6	3.3	3.2	3.2	3.1	3.0
	-3	-4	3.4	3.4	3.3	3.2	3.1
	0	-1	3.6	3.6	3.5	3.4	3.2
	3	2.2	3.8	3.7	3.7	3.5	3.4
	5	4.1	3.9	3.9	3.8	3.6	3.4
	7	6	4.1	4.1	4.0	3.7	3.4
	9	7.9	4.2	4.1	4.0	3.7	3.4
	11	9.8	4.4	4.2	4.0	3.7	3.4
	13	12	4.5	4.2	4.0	3.7	3.4
	15	14	4.6	4.3	4.0	3.7	3.4
1000	-20	-21	-	-	-	-	-
	-17	-18	-	-	-	-	-
	-15	-16	-	-	-	-	-
	-12	-13	-	-	-	-	-
	-10	-11	5.9	5.8	5.7	5.6	5.6
	-7	-8	6.2	6.1	6.0	5.9	5.8
	-5	-6	6.5	6.5	6.4	6.2	6.0
	-3	-4	6.9	6.8	6.7	6.4	6.2
	0	-1	7.2	7.1	7.0	6.7	6.4
	3	2.2	7.6	7.5	7.3	7.1	6.8
	5	4.1	7.9	7.8	7.7	7.2	6.8
	7	6	8.2	8.1	8.0	7.4	6.8
	9	7.9	8.5	8.2	8.0	7.4	6.8
	11	9.8	8.7	8.4	8.0	7.4	6.8
	13	12	9.0	8.5	8.0	7.4	6.8
	15	14	9.2	8.6	8.0	7.4	6.8

1-3. Dimensional drawing

1) RH050/100KHEA

Unit:mm

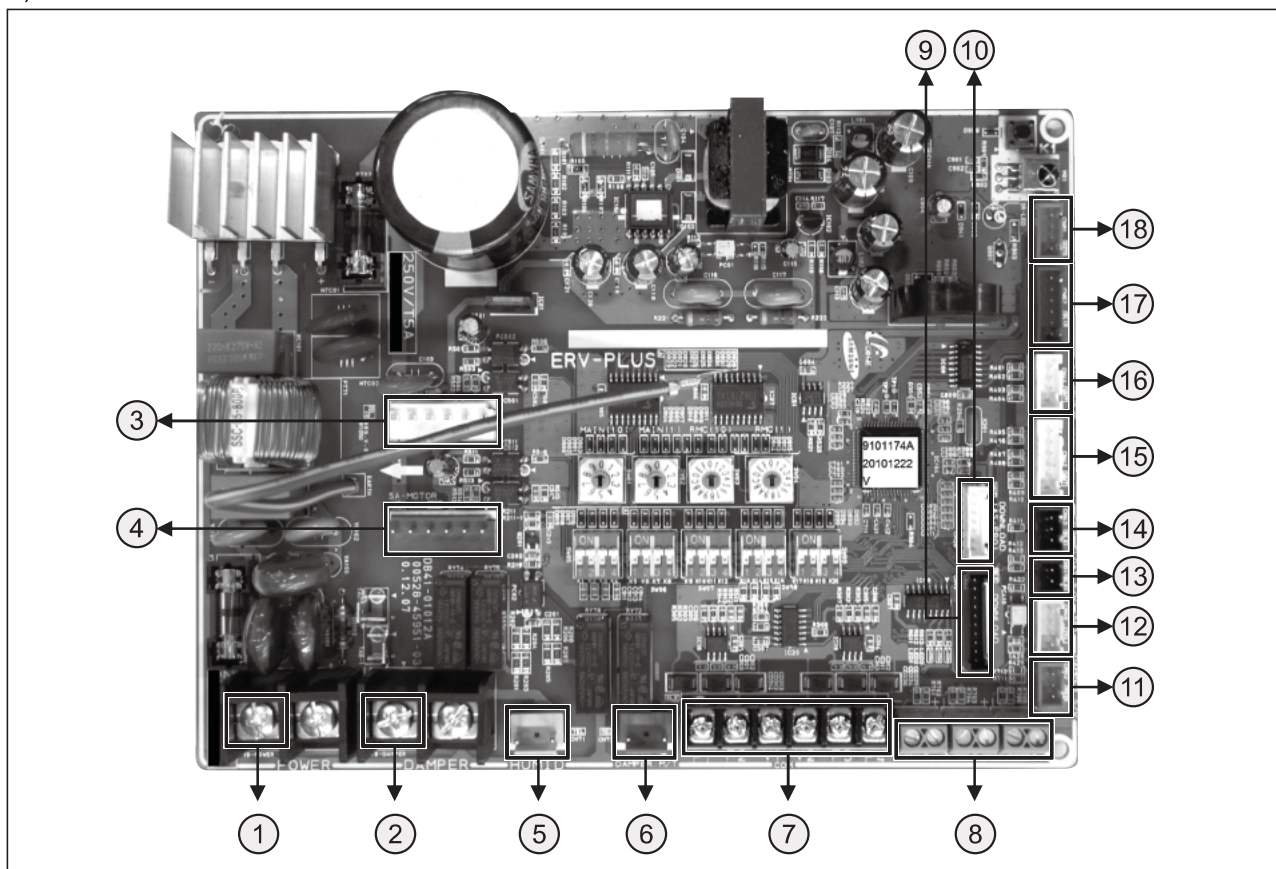


Model	A	B	C	D	E	F	G	H	I
RHF050KHEA	1036	1000	987	1553	270	99	130	253	135
RHF100KHEA	1183	1135	1189	1763	340	84	160	362	170

No.	Name	Description	
		500CMH	1000CMH
①	Liquid pipe connection	Ø6.35 (1/4")	
②	Gas pipe connection	Ø12.70 (1/2")	
③	Drain pipe connection	VP25 (OD Ø32, ID Ø25)	
④	Nominal diameter for duct	RHF050KHEA	Ø200
		RHF100KHEA	Ø250

1-4. PCB connector lay-out

1) RH050/100KHEA



No.	CN #	COLOR	FUNCTION
①	-	-	Power Input(AC POWER)
②	-	-	Outside Damper
③	CN73	White	EA FAN MOTOR
④	CN74	Blue	SA FAN MOTOR
⑤	CN71	Yellow	Humidifying Sol Valve
⑥	CN72	Red	Internal Damper
⑦	-	-	Communication Terminal
⑧	-	-	External Point of Contact Control
⑨	CN10	Black	Download Part
⑩	CN20	White	Downbad Part
⑪	CN52	Red	Damper Switch
⑫	CN54	Yellow	SPi
⑬	CN51	Black	Float switch
⑭	CN43	Black	CO ₂ Sensor
⑮	CN42	White	EA/OA temp. sensor
⑯	CN41	White	Room temp. EVA in/out temp.
⑰	CN62	Blue	EEV
⑱	CN81	Red	External Monitor Output

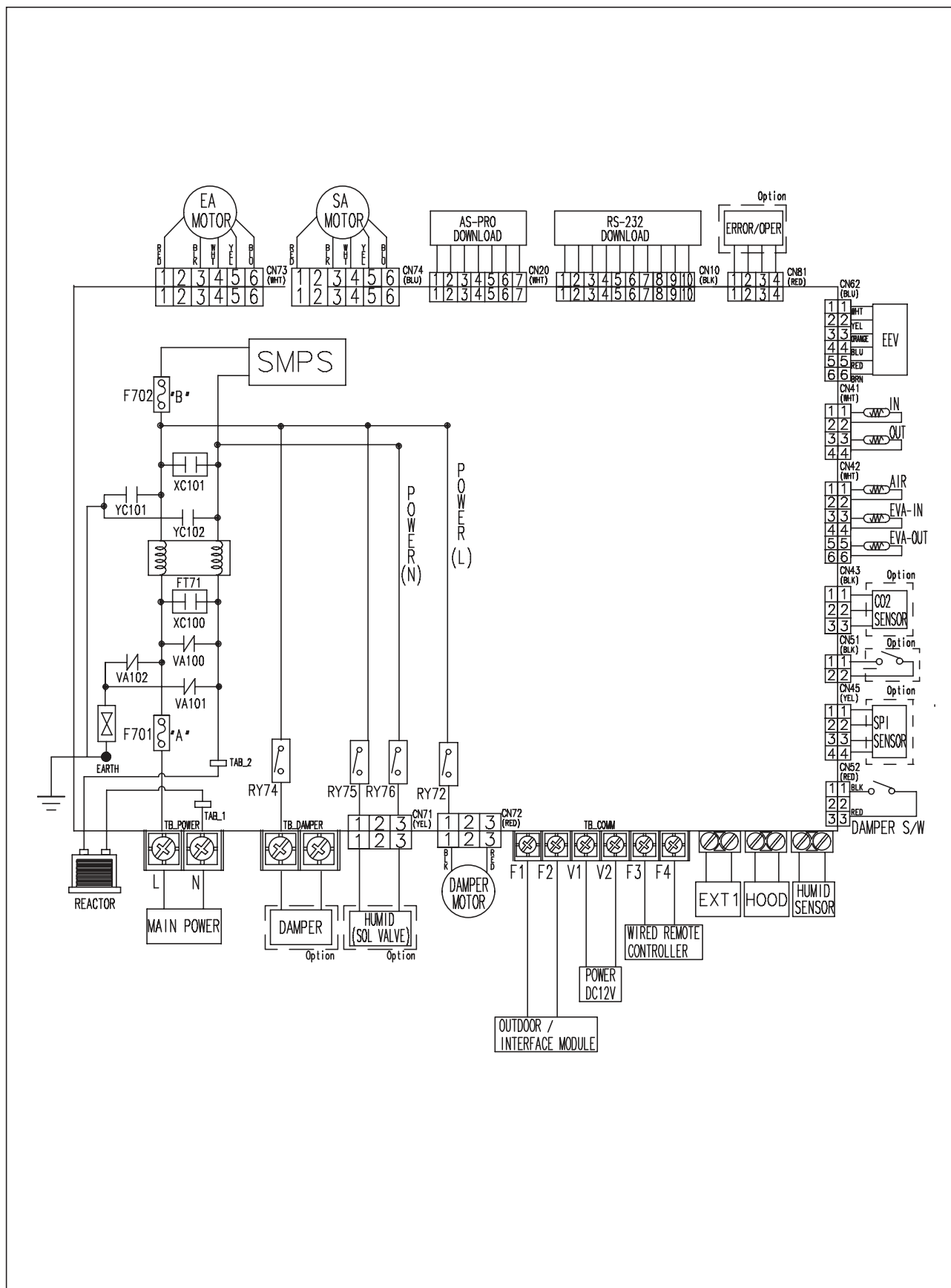
No.	S/W	FUNCTION	
A	 SW01 SW02	Main Address Setting (00~63)	
B	 SW03 SW04	SW03	SW04
		Address of Interface Module Channel 0~2	Group Address (RMC) for Centralized Control 0~F

No.	S/W	FUNCTION	ON	OFF
C	K1	Remote sensor	No use	Use
	K2	Central control	No use	Use
	K3	-	-	-
	K4	Humidifier	No use	Use
	K5	Heating temperature compensation	2°C	5°C
	K6	Filter time	1000 hours	2000 hours
	K7, K8	-	-	-
	K9	EEV stop step in heating	Low	High
	K10	Priority of display on wired R/C	160	35/160
	K11	External control	No use	Use
	K12	State output	Output during operation	Output during thermo-on
	K13, K14	-	-	-
	K15	External damper	No use	Use
	K16	S-Plasma ion kit	No use	Use
	K17	CO ₂ sensor	No use	Use
	K18	Special EEV control skip in heating	No use	Use
	K19	Clean-up	Exhaustion air RPM fixed to RPM in Quiet mode	Supply air RPM fixed to RPM in Quiet mode
	K20	-	-	-

1 ERV PLUS

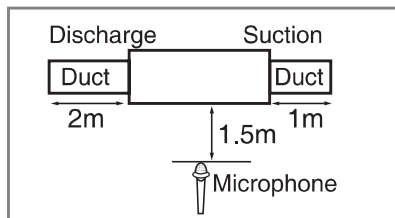
1-5. Electrical wiring diagram

1) RH050/100KHEA



1-6. Sound pressure level

1) Operation sound level

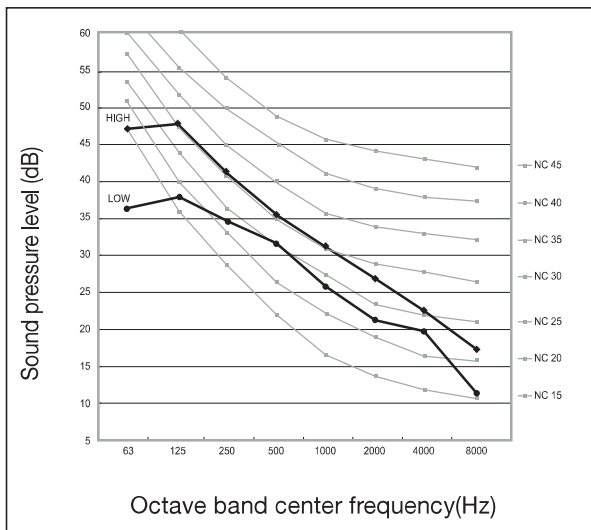


Unit : dB(A)

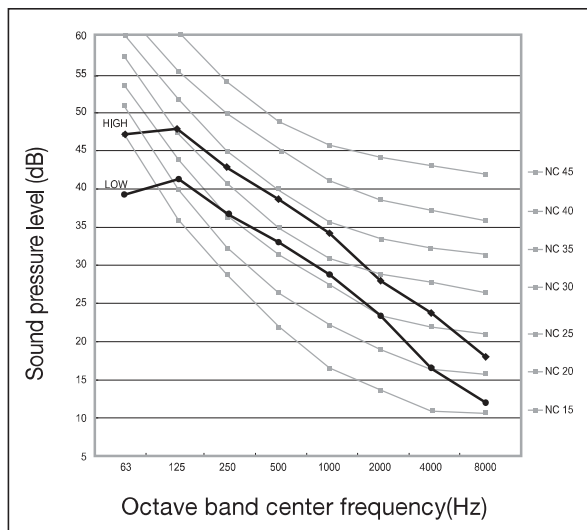
Model	Turbo	High	Low
RHF050KHEA	38,5	36.0	32.0
RHF100KHEA	40,5	38.0	35.0

2) NC curves

(1) RHF050KHEA

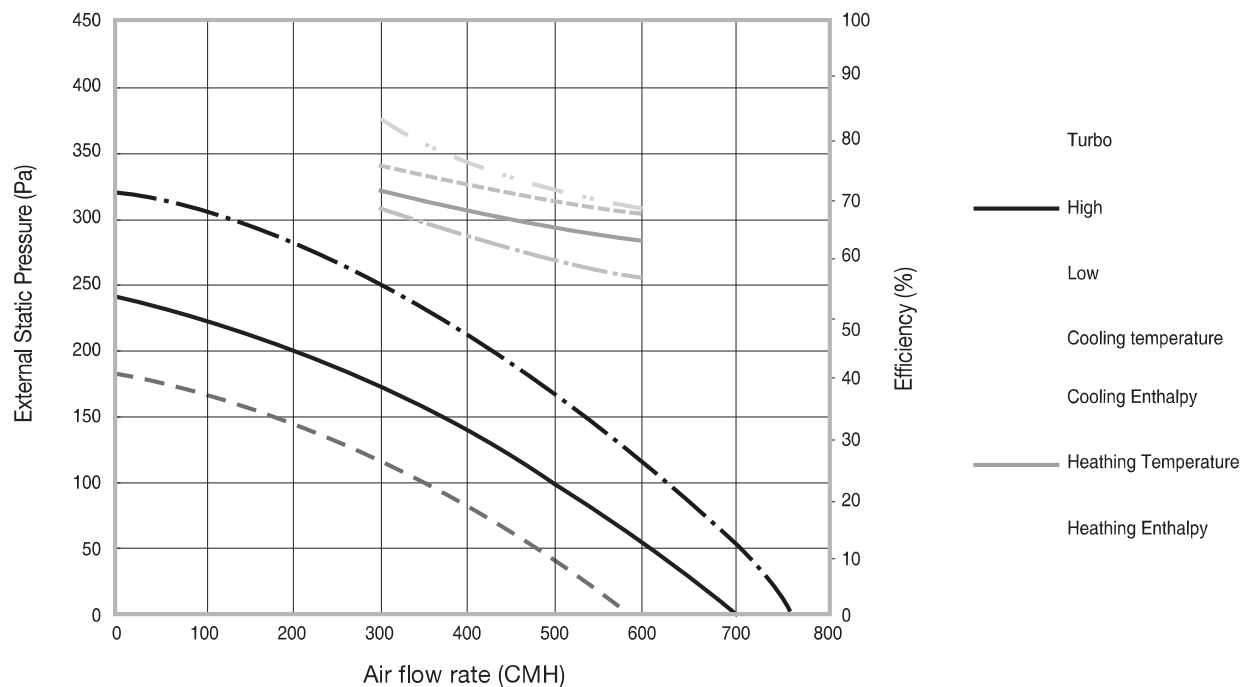


(2) RHF100KHEA



1-7. Recommended operation range

(1) RH050KHEA



(2) RH100KHEA

