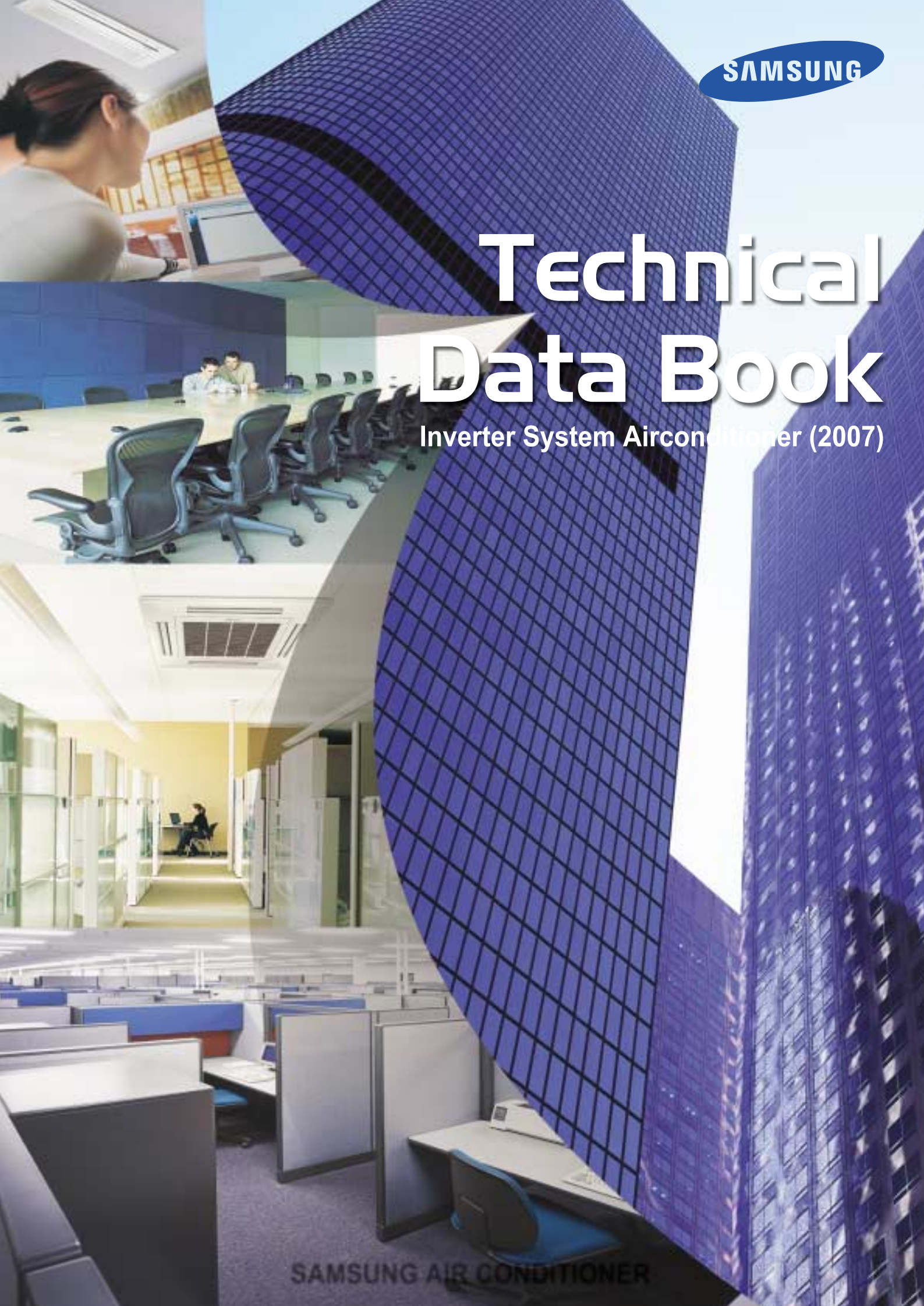
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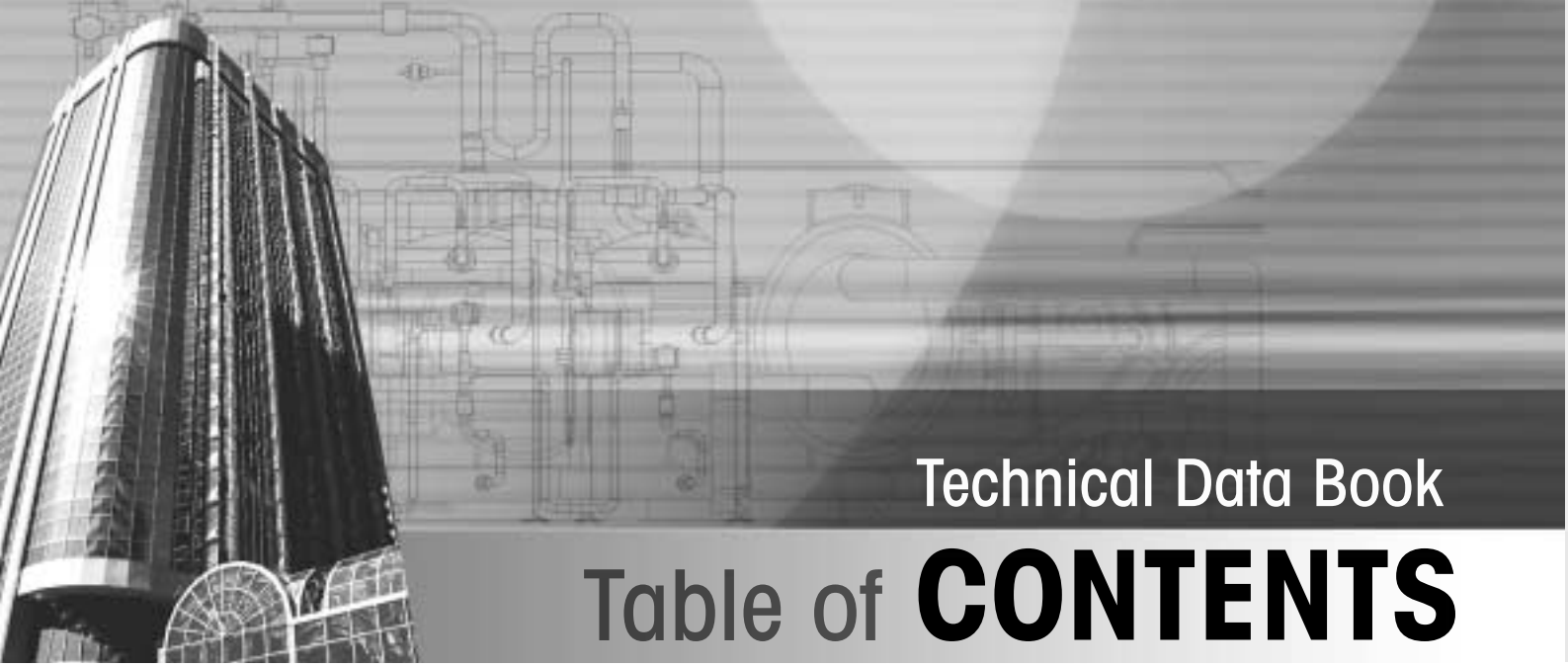
Data Book
Inverter System Airconditioner (2007)
SAMSUNG AIR CONDITIONER



Technical Data Book

Table of CONTENTS

Chapter 01 Model Identification

Chapter 02 Specifications

Chapter 03 Installations

Chapter 04

Operation Logic

Chapter 05

System Diagram

Chapter 06

Performance Data

Chapter 07

Troubleshooting

Technical Data Book

01 Model Identification

1. New Built-in Type

1-1. Nomenclature

Model Name

K	H	0	3	5	E	A	V			/			
①	②		③		④	⑤		⑦	⑧		Buyer code		

① Product Type (I)

Indoor Unit & Outdoor Unit	Cassette	1-Way	K
		2-Way	G
		4-Way	C
		Mini 4-Way	T
	Duct	Slim	E
		MSP	D
	Ceiling	-	F
	Console	-	N
	PAC	-	P
	Split	-	W
Universal Outdoor Unit (DPM)			U

② Mode

C/O (Cooling Only)	C
H/P (Heat Pump)	H
H/P+Heater	E
C/O+Heater	G
C/O+Hydronic	N

③ Capacity

BTU	kW X 10
9K	26
12K	35
14K	40
18K	52
21K	60
24K	70
28K	82
32K	94
36K	105
44K	128
48K	140
60K	175
72K	210
80K	230
96K	280

④ Power Supply

Normal	N	H
115V, 60Hz	A	-
220V, 60Hz	B	TB
208~230V, 60Hz	C	-
200~220V, 50Hz	D	-
220~240V, 50Hz	E	TE
220V, 60Hz, 3ø	F	TF
380~415V, 50Hz, 3ø	G	TG
127V, 50Hz	H	-
220~240V, 50/60Hz, 1ø	M	-
380V, 60Hz, 3ø	H	-
Inverter 1ø	V	
Inverter 3ø	W	

⑤ Refrigerant

R-22	Z
R407C	C
R410A	A

Product Type (II)

Normal	Indoor	A
	Outdoor	X
Universal (DPM)	Indoor	M
	Outdoor	M
Inverter		V

⑦ Version

⑧ Plant

SEC	None
SSEC	C
TSE	T
SGEC	G

02 Specifications

1. Specifications

2. Dimensions

1. Specifications

1-1. 1 way cassette

MODEL		INDOOR UNIT		KH026EAV	KH035EAV
		OUTDOOR UNIT		UH026EAV	UH035EAV
Capacity		Cooling	Watts	980~2,600~3,500	980~3,500~4,100
		Heating	Watts	950~3,300~5,000	950~4,000~5,800
Power Input		Cooling	Watts	695	1,090
		Heating	Watts	915	1,170
EER		Cooling	W/W	3.74 A	3.21 A
		Heating	W/W	3.61 A	3.41 B
Running Current		Cooling	Amps	3.30	5.1
		Heating	Amps	4.30	5.6
Piping Connection		Liquid	mm	6.35	6.35
		Gas	mm	9.52	9.52
Power Supply			ø/V/Hz	1/220~240/50	1/220~240/50
INDOOR UNIT					
Indoor Unit MODEL No.				KH026EAV	KH035EAV
Panel MODEL No.				P1SMA	P1SMA
Fan & Motor			Type	Crossflow fan	Crossflow fan
Air Circulation		High	CMM	7.0/8.0	7.5/8.5
		Middle	CMM	5.5/6.0	6.0/6.5
		Low	CMM	4.0/4.5	4.0/4.5
Dehumidification			kg/hr	1.4	1.5
Set	Dimension(Net)	WxHxD	mm	970x180x390	970x180x390
	Dimension(Gross)	WxHxD	mm	1,168x302x467	1,168x302x467
	Weight(Net/Gross)		kg	15/18	15/18
Panel	Dimension(Net)	WxHxD	mm	1,180x20x460	1,180x20x460
	Dimension(Gross)	WxHxD	mm	1,259x144x539	1,259x144x539
	Weight(Net/Gross)		kg	3.5/6.2	3.5/6.2
Sound Pressure Level			dB(A)	30/27	32/28
OUTDOOR UNIT					
Outdoor Unit MODEL No.				UH026EAV	UH035EAV
Compressor		Model		G4C090LU2ER	G4C090LU2ER
		Oil Type/Quantity(cc)		POE/320	POE/320
Fan & Motor		Type	Type	Propeller	Propeller
		Input	W	30	40
Air Circulation			CMM	27	32

MODEL	INDOOR UNIT		KH026EAV	KH035EAV
	OUTDOOR UNIT		UH026EAV	UH035EAV
Refrigerant Charge		Type	R410A	R410A
		g	1,000	1,000
Dimension(Net)	WxHxD	mm	790x548x285	790x548x285
Dimension(Gross)	WxHxD	mm	926x600x382	926x600x382
Weight(Net/Gross)		kg	35.5/38	35.5/38
Sound Pressure Level		dB(A)	47	47
Temperature Range	Cooling	°C	-5~46	-5~46
	Heating	°C	-10~24	-10~24
Max./Min. Refrigerant Piping Length		m	20/1	20/1
Maximum Height Difference		m	10	10
Connection of Power Supply			Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	1,000	1,000
Chargeless		m	15.0	15.0
Additional Required Gas		g/m	15	15
FEATURES				
Auto Change Over			●	●
Auto Restart			●	●

Note

1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
3. Product specifications in this publication can be changed without a prior notice.
   Because there is always an ongoing improvement on our products.

1. Specifications

1-2. 4 way cassette

MODEL		INDOOR UNIT		CH070EAV	CH105EAV	CH140EAV
		OUTDOOR UNIT		UH070EAV	UH105GAV	UH140GAV
Capacity		Cooling	Watts	2,100~7,100~8,000	3,200~10,500~12,000	3,800~14,000~15,400
		Heating	Watts	2,000~8,000~10,500	2,600~11,200~15,500	3,450~16,000~19,500
Power Input		Cooling	Watts	2,210	3,270	4,650
		Heating	Watts	2,490	3,100	4,690
EER		Cooling	W/W	3.21 A	3.21 A	3.01 B
		Heating	W/W	3.21 C	3.61 A	3.41 B
Running Current		Cooling	Amps	10	5.0	7.2
		Heating	Amps	11	5.0	7.3
Piping Connection		Liquid	mm	6.35	9.52	9.52
		Gas	mm	15.88	15.88	19.05
Power Supply			ø/V/Hz	1/220~240/50	3/380~415/50	3/380~415/50
INDOOR UNIT						
Indoor Unit MODEL No.				CH070EAV	CH105EAV	CH140EAV
Panel MODEL No.				P4NMA	P4SMA	P4SMA
Fan & Motor			Type	Turbo Fan	Turbo Fan	Turbo Fan
Air Circulation		High	CMM	15.6/17.2	22.2/25.7	24.93/30.33
		Middle	CMM	14.9/15.7	18.1/21.3	22.29/27.70
		Low	CMM	13.7/14.4	14.4/17.2	19.87/24.63
Dehumidification			kg/hr	2.7	4.76	5.61
Set	Dimension(Net)	WxHxD	mm	840X230X840	840X298X840	840X298X840
	Dimension(Gross)	WxHxD	mm	939X324X923	925X360X925	925X360X925
	Weight(Net/Gross)		kg	27/31	29/35	29/35
Panel	Dimension(Net)	WxHxD	mm	950X48X950	950X35X950	950X35X950
	Dimension(Gross)	WxHxD	mm	1,046X100X1,046	1,042X103X1,042	1,042X103X1,042
	Weight(Net/Gross)		kg	4.9/7.6	7/10.3	7/10.3
Sound Pressure Level			dB(A)	36/30	40/33	45/38
OUTDOOR UNIT						
Outdoor Unit MODEL No.				UH070EAV	UH105GAV	UH140GAV
Compressor		Model		G8T260FU1EW	G5T360FUBEK	G5T450FUBEX
		Oil Type/Quantity(cc)		POE/700	POE/1,100	POE/1,100
Fan & Motor		Type	Type	Propeller	Propeller x 2	Propeller x 2
		Input	W	100	130+130	130+130
Air Circulation			CMM	50	110	110

MODEL	INDOOR UNIT		CH070EAV	CH105EAV	CH140EAV
	OUTDOOR UNIT		UH070EAV	UH105GAV	UH140GAV
Refrigerant Charge		Type	R410A	R410A	R410A
		g	1,900	2,800	2,800
Dimension(Net)	WxHxD	mm	880X798X310	930X1,135X375	930X1,135X375
Dimension(Gross)	WxHxD	mm	1,038X861X413	1,060X1,268X487	1,060X1,268X487
Weight(Net/Gross)		kg	57/63	95/102	98/105
Sound Pressure Level		dB(A)	52	56	59
Temperature Range	Cooling	°C	-5 to 46	-15 to 50	-15 to 50
	Heating	°C	-10 to 24	-20 to 24	-20 to 24
Max./Min. Refrigerant Piping Length		m	30/1	75/1	75/1
Maximum Height Difference		m	15	30	30
Connection of Power Supply			Outdoor	Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	1,900	2,800	2,800
Chargeless		m	7.5	7.5	7.5
Additional Required Gas		g/m	10	40	40
FEATURES					
Auto Change Over			●	●	●
Auto Restart			●	●	●

Note

1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
3. Product specifications in this publication can be changed without a prior notice.
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1. Specifications

1-3. Mini 4 way cassette

MODEL	INDOOR UNIT		TH026EAV	TH035EAV	TH052EAV	TH060EAV
	OUTDOOR UNIT		UH026EAV	UH035EAV	UH052EAV	UH060EAV
Capacity	Cooling	Watts	990~2,600~3,500	990~3,500~4,200	1,600~4,700~6,000	1,800~5,800~6,500
	Heating	Watts	980~3,300~5,000	980~4,000~5,500	1,300~5,500~9,000	1,800~7,000~10,000
Power Input	Cooling	Watts	710	1,090	1,510	1,930
	Heating	Watts	885	1,105	1,660	2,180
EER	Cooling	W/W	3.66 A	3.21 A	3.11 B	3.01 B
	Heating	W/W	3.73 A	3.61 A	3.31 C	3.21 C
Running Current	Cooling	Amps	3.40	5.1	7	8.8
	Heating	Amps	4.20	5.20	8	10.5
Piping Connection	Liquid	mm	6.35	6.35	6.35	6.35
	Gas	mm	9.52	9.52	12.70	15.88
Power Supply		ø/V/Hz	1/220~240/50	1/220~240/50	1/220~240/50	1/220~240/50
INDOOR UNIT						
Indoor Unit MODEL No.			TH026EAV	TH035EAV	TH052EAV	TH060EAV
Panel MODEL No.			PMSMA	PMSMA	PMSMA	PMSMA
Fan & Motor		Type	Turbo Fan	Turbo Fan	Turbo Fan	Turbo Fan
Air Circulation	High	CMM	10.0/11.0	11.0/12.0	12.2/12.9	12.4/13.6
	Middle	CMM	8.5/9.5	9.0/10.0	11.0/11.7	11.8/12.9
	Low	CMM	7.5/8.0	7.5/8.0	10.0/10.7	10.7/11.9
Dehumidification		kg/hr	1.4	1.5	1.7	2.0
Set Dimension(Net)	WxHxD	mm	575x260x575	575x260x575	575x260x575	575x260x575
Set Dimension(Gross)	WxHxD	mm	660x310x635	600x310x635	660x310x635	660x310x635
Set Weight(Net/Gross)		kg	17/20	17/20	17/20	17/20
Panel Dimension(Net)	WxHxD	mm	670x35x670	670x35x670	670x35x670	670x35x670
Panel Dimension(Gross)	WxHxD	mm	717x93x717	717x93x717	717x93x717	717x93x717
Panel Weight(Net/Gross)		kg	2.6/4.2	2.6/4.2	2.6/4.2	2.6/4.2
Sound Pressure Level		dB(A)	30/25	34/27	41/33	41/33
OUTDOOR UNIT						
Outdoor Unit MODEL No.			UH026EAV	UH035EAV	UH052EAV	UH060EAV
Compressor	Model		G4C090LU2ER	G4C090LU2ER	G8T200FU1EW	G8T260FU1EW
	Oil Type/Quantity(cc)		POE/320	POE/320	POE/700	POE/700
Fan & Motor	Type	Type	Propeller	Propeller	Propeller	Propeller
	Input	W	30	40	100	100
Air Circulation		CMM	27	32	43	50

MODEL	INDOOR UNIT		TH026EAV	TH035EAV	TH052EAV	TH060EAV
	OUTDOOR UNIT		UH026EAV	UH035EAV	UH052EAV	UH060EAV
Refrigerant Charge		Type	R410A	R410A	R410A	R410A
		g	1,000	1,000	1,450	1,500
Dimension(Net)	WxHxD	mm	790x548x285	790x548x285	880x638x310	880x798x310
Dimension(Gross)	WxHxD	mm	938x610x382	938x610x382	1,023x704x413	1,038x861x406
Weight(Net/Gross)		kg	35.5/38	35.5/38	50/53	57/61
Sound Pressure Level		dB(A)	47	47	49	52
Temperature Range	Cooling	°C	-5~46	-5~46	-5~46	-5~46
	Heating	°C	-10~24	-10~24	-10~24	-10~24
Max./Min. Refrigerant Piping Length		m	20/1	20/1	30/1	30/1
Maximum Height Difference		m	10	10	15	15
Connection of Power Supply			Outdoor	Outdoor	Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	1,000	1,000	1,450	1,500
Chargeless		m	15.0	15.0	7.5	7.5
Additional Required Gas		g/m	15	15	20	15
FEATURES						
Auto Change Over			●	●	●	●
Auto Restart			●	●	●	●

Note

1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
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1. Specifications

1-4. Slim duct

MODEL	INDOOR UNIT		EH035EAV	EH052EAV	EH070EAV
	OUTDOOR UNIT		UH035EAV	UH052EAV	UH070EAV
Capacity	Cooling	Watts	980~3,500~4,200	1,700~5,000~6,000	2,200~7,100~8,000
	Heating	Watts	980~4,000~5,800	1,500~6,000~9,000	1,900~8,000~11,000
Power Input	Cooling	Watts	1,060	1,550	2,210
	Heating	Watts	1,080	1,660	2,150
EER	Cooling	W/W	3.30 A	3.23 A	3.21 A
	Heating	W/W	3.70 A	3.61 A	3.72 A
Running Current	Cooling	Amps	5.10	7.00	10.00
	Heating	Amps	5.20	7.50	10.00
Piping Connection	Liquid	mm	6.35	6.35	6.35
	Gas	mm	9.52	12.70	15.88
Power Supply		ø/V/Hz	1/220~240/50	1/220-240/50	1/220-240/50
INDOOR UNIT					
Indoor Unit MODEL No.			EH035EAV	EH052EAV	EH070EAV
Panel MODEL No.			-	-	-
Fan & Motor		Type	Sirocco Fan	Sirocco Fan	Sirocco Fan
Air Circulation	High	CMM	10.0/11.0	14.9/16.5	16.6/19.6
	Middle	CMM	8.0/9.0	13.8/15.3	16.1/18.9
	Low	CMM	6.5/7.0	12.2/14.1	15.6/17.9
External Static Pressure(Min./Nom./Max.)			0/2/4	0/2/4	0/2/4
Dehumidification		kg/hr	1.5	1.7	2.6
Set Dimension(Net)	WxHxD	mm	900x199x600	1,100x199x600	1,100x199x600
Set Dimension(Gross)	WxHxD	mm			
Set Weight(Net/Gross)		kg	26/31	31/39	31/39
Panel Dimension(Net)	WxHxD	mm	-	-	-
Panel Dimension(Gross)	WxHxD	mm	-	-	-
Panel Weight(Net/Gross)		kg	-	-	-
Sound Pressure Level		dB(A)	32/27	33/30	36/32
OUTDOOR UNIT					
Outdoor Unit MODEL No.			UH035EAV	UH052EAV	UH070EAV
Compressor	Model		G4C090LU2ER	G8T200FU1EW	G8T260FU1EW
	Oil Type/Quantity(cc)		POE/320	POE/700	POE/700
Fan & Motor	Type	Type	Propeller	Propeller	Propeller
	Input	W	40	100	100
Air Circulation		CMM	32	43	50

MODEL	INDOOR UNIT		EH035EAV	EH052EAV	EH070EAV
	OUTDOOR UNIT		UH035EAV	UH052EAV	UH070EAV
Refrigerant Charge		Type	R410A	R410A	R410A
		g	1,000	1,450	1,900
Dimension(Net)	WxHxD	mm	790x548x285	880x638x310	880x798x310
Dimension(Gross)	WxHxD	mm	926x600x382	1,023x704x413	1,023x881x413
Weight(Net/Gross)		kg	35.5/38	50/54	57/61
Sound Pressure Level		dB(A)	47	49	52
Temperature Range	Cooling	°C	-5~46	-5~46	-5~46
	Heating	°C	-10~24	-10~24	-10~24
Max./Min. Refrigerant Piping Length		m	20/1	30/1	30/1
Maximum Height Difference		m	10	15	15
Connection of Power Supply			Outdoor	Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	1,000	1,450	1,900
Chargeless		m	15	7.5	7.5
Additional Required Gas		g/m	15	20	10
FEATURES					
Auto Change Over			●	●	●
Auto Restart			●	●	●

Note

1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
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1. Specifications

1-5. MSP duct

MODEL	INDOOR UNIT		DH105EAV	DH140EAV
	OUTDOOR UNIT		UH105GAV	UH140GAV
Capacity	Cooling	Watts	3,350~10,500~12,000	3,450~14,000~15,400
	Heating	Watts	2,600~11,200~15,500	3,750~16,000~19,500
Power Input	Cooling	Watts	3,270	4,650
	Heating	Watts	3,100	4,430
EER	Cooling	W/W	3.21 A	3.01 B
	Heating	W/W	3.61 A	3.61 A
Running Current	Cooling	Amps	5.0	7.4
	Heating	Amps	5.0	7.0
Piping Connection	Liquid	mm	9.52	9.52
	Gas	mm	15.88	19.05
Power Supply		ø/V/Hz	3/380~415/50	3/380~415/50
INDOOR UNIT				
Indoor Unit MODEL No.			DH105EAV	DH140EAV
Panel MODEL No.			-	-
Fan & Motor		Type	Sirocco Fan	Sirocco Fan
Air Circulation	High	CMM	27.5/28.1	35.61/36.78
	Middle	CMM	25.7/25.9	30.87/31.46
	Low	CMM	22.4/22.7	27.59/26.20
External Static Pressure(Min./Nom./Max.)			0/8/10	0/8/10
Dehumidification		kg/hr	3.8	5.12
Set Dimension(Net)	WxHxD	mm	1,150X320X480	1,200X360X650
Set Dimension(Gross)	WxHxD	mm	1,396X584X424	1,447X425X769
Set Weight(Net/Gross)		kg	39/46	55/60
Panel Dimension(Net)	WxHxD	mm	-	-
Panel Dimension(Gross)	WxHxD	mm	-	-
Panel Weight(Net/Gross)		kg	-	-
Sound Pressure Level		dB(A)	39/35	43/38
OUTDOOR UNIT				
Outdoor Unit MODEL No.			UH105GAV	UH140GAV
Compressor	Model		G5T360FUBEK	G5T450FUBEX
	Oil Type/Quantity(cc)		POE/1,100	POE/1,100
Fan & Motor	Type	Type	Propeller x 2	Propeller x 2
	Input	W	130+130	130+130
Air Circulation		CMM	110	110

MODEL	INDOOR UNIT		DH105EAV	DH140EAV
	OUTDOOR UNIT		UH105GAV	UH140GAV
Refrigerant Charge		Type	R410A	R410A
		g	2,800	2,800
Dimension(Net)	WxHxD	mm	930X1,135X375	930X1,135X375
Dimension(Gross)	WxHxD	mm	1,060X1,268X487	1,060X1,268X487
Weight(Net/Gross)		kg	95/102	98/105
Sound Pressure Level		dB(A)	56	59
Temperature Range	Cooling	°C	-15~50	-15~50
	Heating	°C	-20~24	-20~24
Max./Min. Refrigerant Piping Length		m	75/1	75/1
Maximum Height Difference		m	30	30
Connection of Power Supply			Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	2,800	2,800
Chargeless		m	7.5	7.5
Additional Required Gas		g/m	40	40
FEATURES				
Auto Change Over			●	●
Auto Restart			●	●

Note

1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
3. Product specifications in this publication can be changed without a prior notice.
   Because there is always an ongoing improvement on our products.

1. Specifications

1-6. Ceiling

MODEL		INDOOR UNIT		FH052EAV	FH070EAV
		OUTDOOR UNIT		UH052EAV	UH070EAV
Capacity		Cooling	Watts	1,700~5,000~6,000	2,000~7,100~8,000
		Heating	Watts	1,500~6,000~9,000	2,000~8,000~10,500
Power Input		Cooling	Watts	1,550	2,520
		Heating	Watts	1,760	2,840
EER		Cooling	W/W	3.23 A	2.81 C
		Heating	W/W	3.41 B	2.81 D
Running Current		Cooling	Amps	7.00	11.00
		Heating	Amps	8.20	12.50
Piping Connection		Liquid	mm	6.35	6.35
		Gas	mm	12.70	15.88
Power Supply			ø/V/Hz	1/220-240/50	1/220-240/50
INDOOR UNIT					
Indoor Unit MODEL No.				FH052EAV	FH070EAV
Panel MODEL No.				-	-
Fan & Motor			Type	Sirocco Fan	Sirocco Fan
Air Circulation		High	CMM	13.6/14.5	14.0/16.0
		Middle	CMM	12.5/13.2	13.5/15.2
		Low	CMM	11.4/11.7	12.3/12.5
Dehumidification			kg/hr	1.7	2.7
Set	Dimension(Net)	WxHxD	mm	1,000x200x650	1,000x200x650
	Dimension(Gross)	WxHxD	mm	1,074x294x726	1,074x294x726
	Weight(Net/Gross)		kg	22/26	22/26
Panel	Dimension(Net)	WxHxD	mm	-	-
	Dimension(Gross)	WxHxD	mm	-	-
	Weight(Net/Gross)		kg	-	-
Sound Pressure Level			dB(A)	38/32	41/36
OUTDOOR UNIT					
Outdoor Unit MODEL No.				UH052EAV	UH070EAV
Compressor		Model		G8T200FU1EW	G8T260FU1EW
		Oil Type/Quantity(cc)		POE/700	POE/700
Fan & Motor		Type	Type	Propeller	Propeller
		Input	W	100	100
Air Circulation			CMM	43	50

MODEL	INDOOR UNIT		FH052EAV	FH070EAV
	OUTDOOR UNIT		UH052EAV	UH070EAV
Refrigerant Charge		Type	R410A	R410A
		g	1,450	1,900
Dimension(Net)	WxHxD	mm	880x638x310	880x798x310
Dimension(Gross)	WxHxD	mm	1,023x704x413	1,023x881x413
Weight(Net/Gross)		kg	50/54	57/61
Sound Pressure Level		dB(A)	49	52
Temperature Range	Cooling	°C	-5~46	-5~46
	Heating	°C	-10~24	-10~24
Max./Min. Refrigerant Piping Length		m	30/1	30/1
Maximum Height Difference		m	15	15
Connection of Power Supply			Outdoor	Outdoor
Standard Amount of Refrigerant Charge		g	1,450	1,900
Chargeless		m	7.5	7.5
Additional Required Gas		g/m	20	10
FEATURES				
Auto Change Over			●	●
Auto Restart			●	●

Note

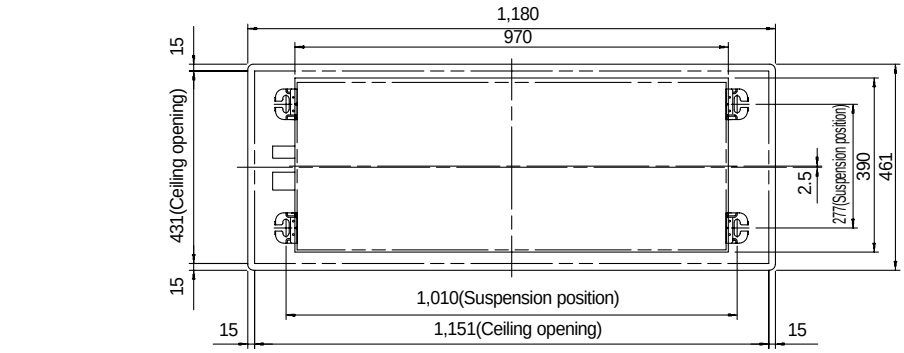
1. Capacities are based on the following conditions.
   Cooling : - Indoor Temperature 27°C DB/19°C WB
   - Outdoor Temperature 35°C DB/24°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
   Heating : - Indoor Temperature 20°C DB/15°C WB
   - Outdoor Temperature 7°C DB/6°C WB
   - Interconnecting Piping Length 7.5m
   - Level difference of Zero
2. Capacities are Net Capacities.
3. Product specifications in this publication can be changed without a prior notice.
   Because there is always an ongoing improvement on our products.

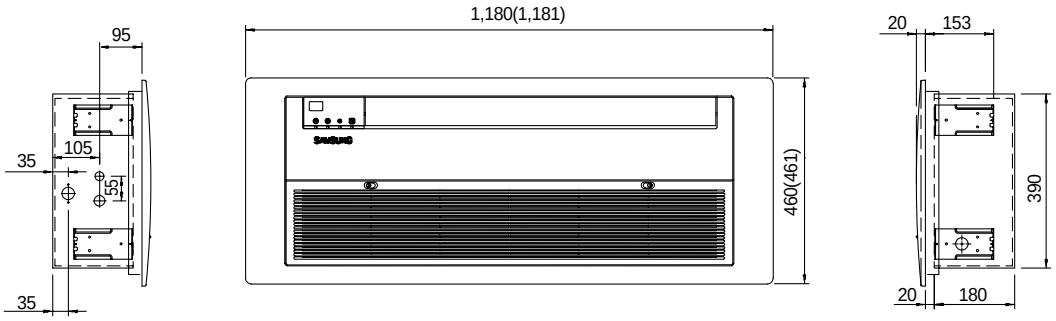
2. Dimensions

2-1. 1 way cassette

1) KH026EAV/KH035EAV

Unit : mm

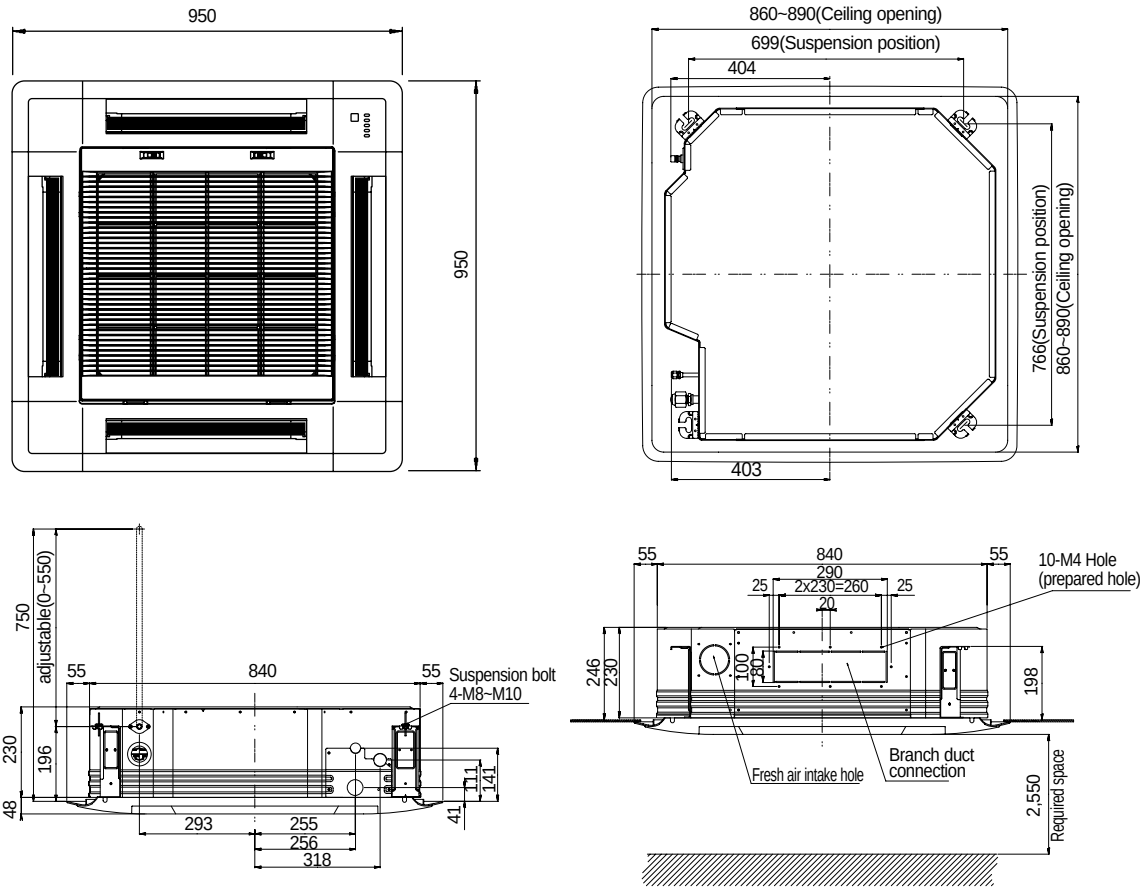




2-2. 4 way cassette

1) CH070EAV

Unit : mm

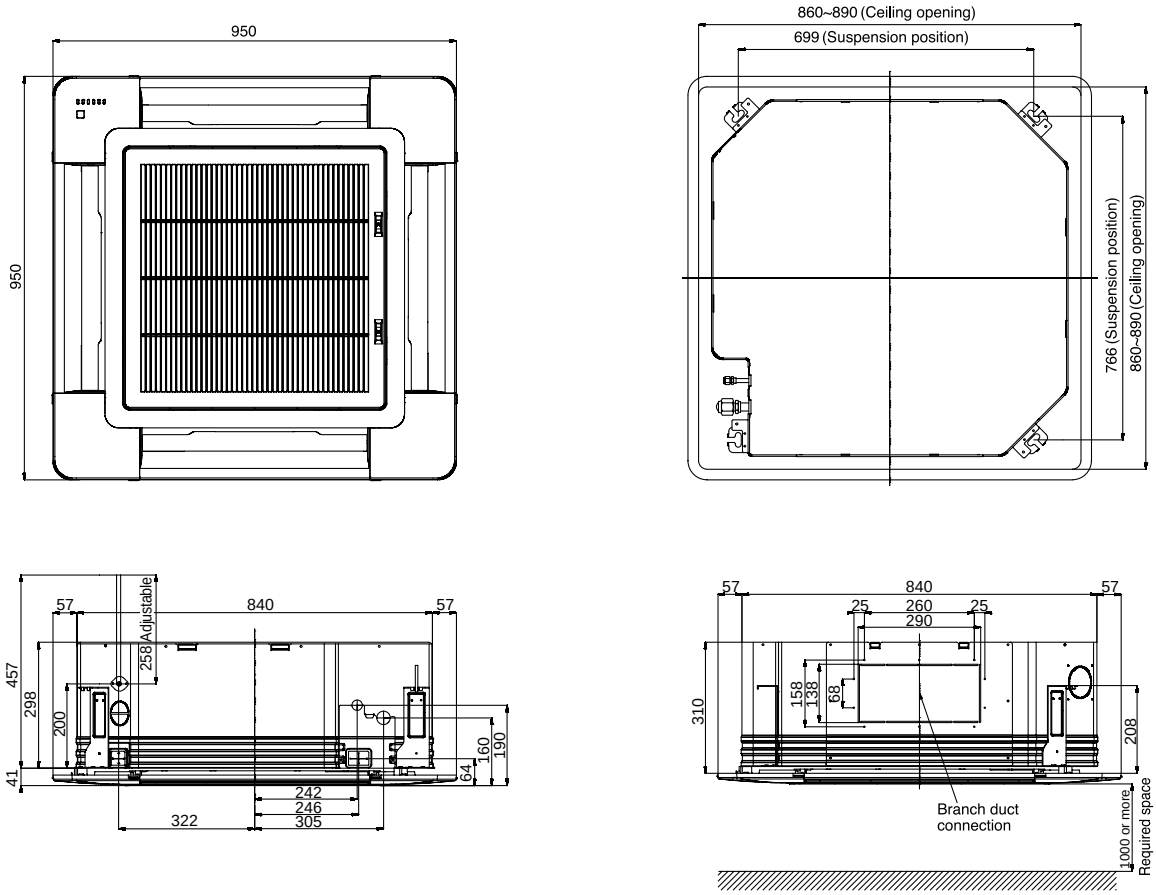


2. Dimensions

2-2. 4 way cassette

2) CH105EAV/CH140EAV

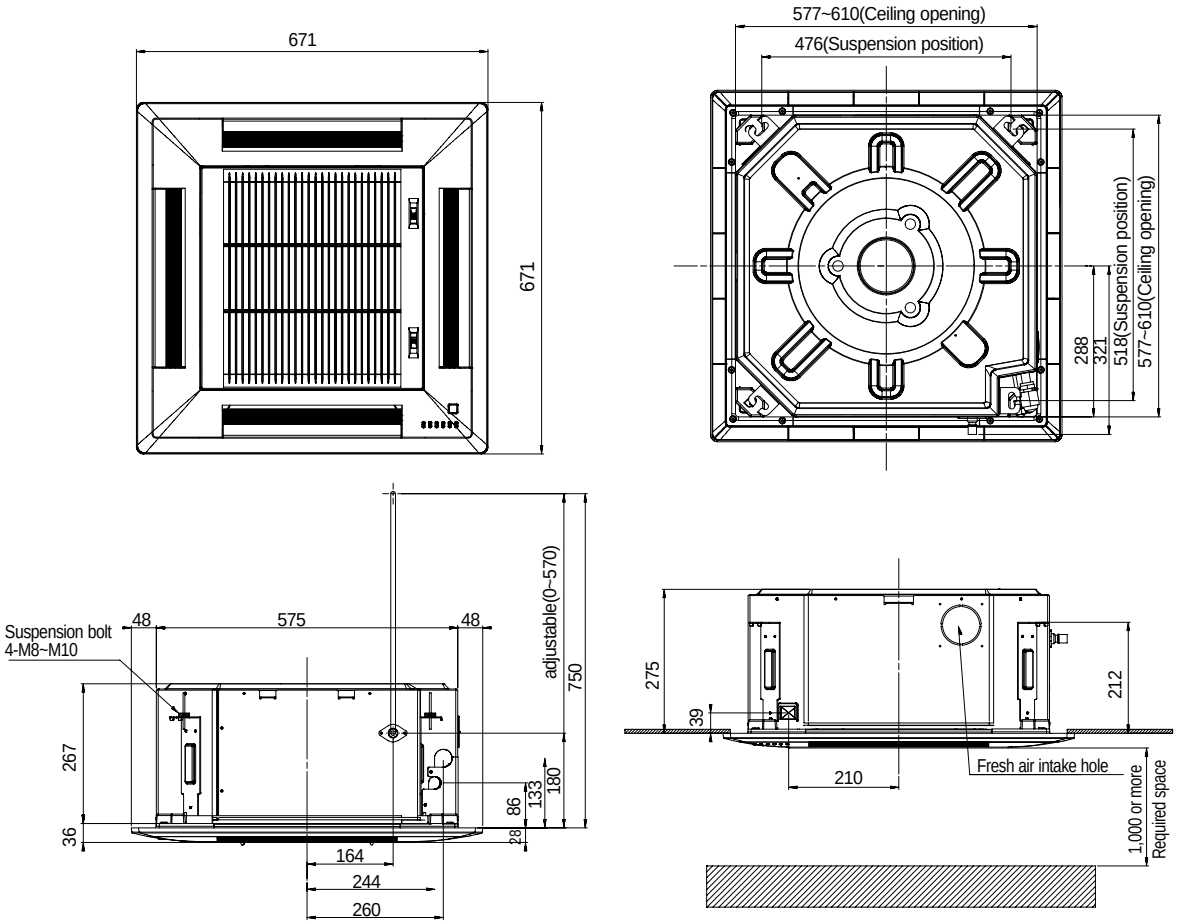
Unit : mm



2-3. Mini 4 way cassette

1) TH026EAV/TH035EAV/TH052EAV/TH060EAV

Unit : mm

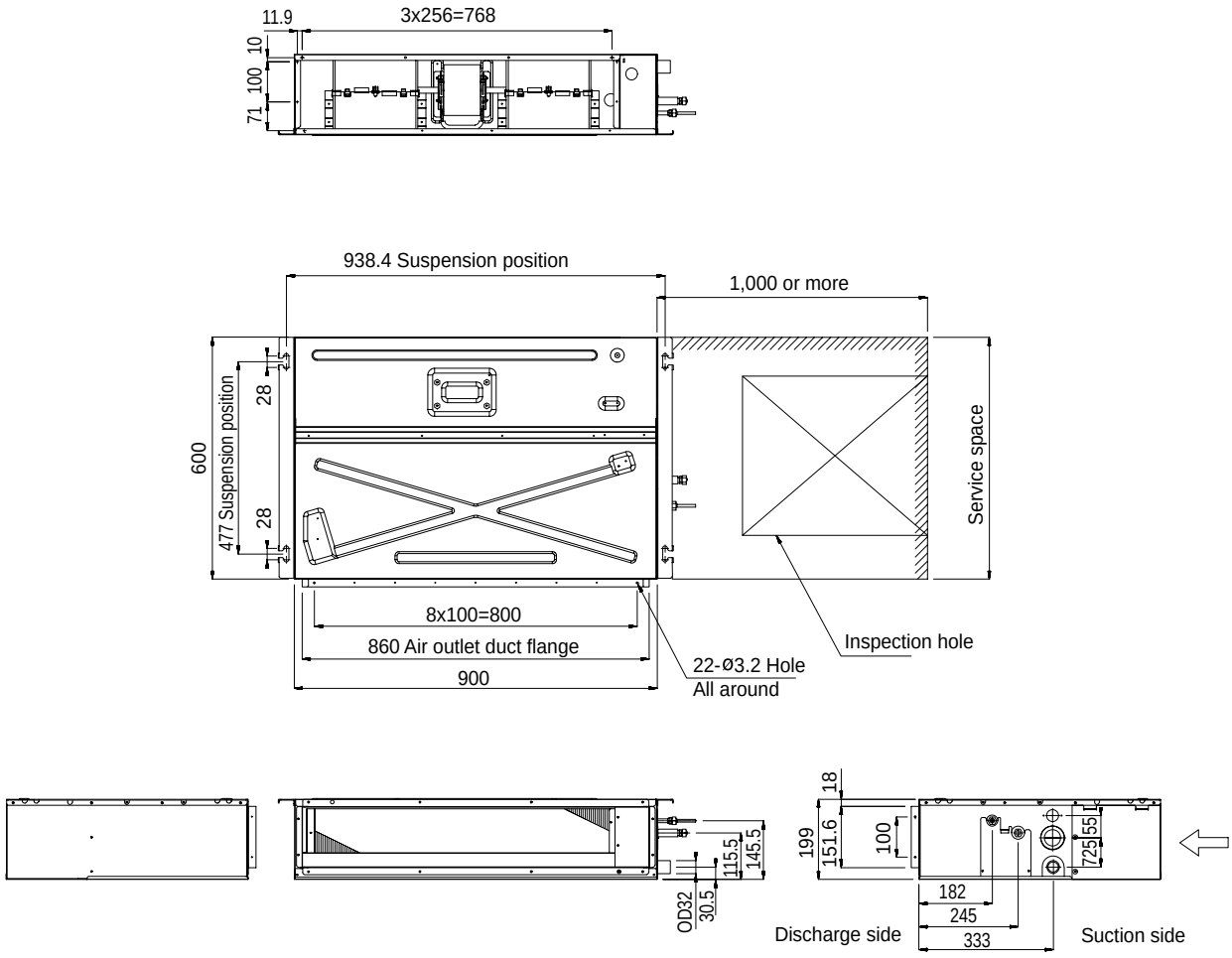


2. Dimensions

2-4. Slim duct

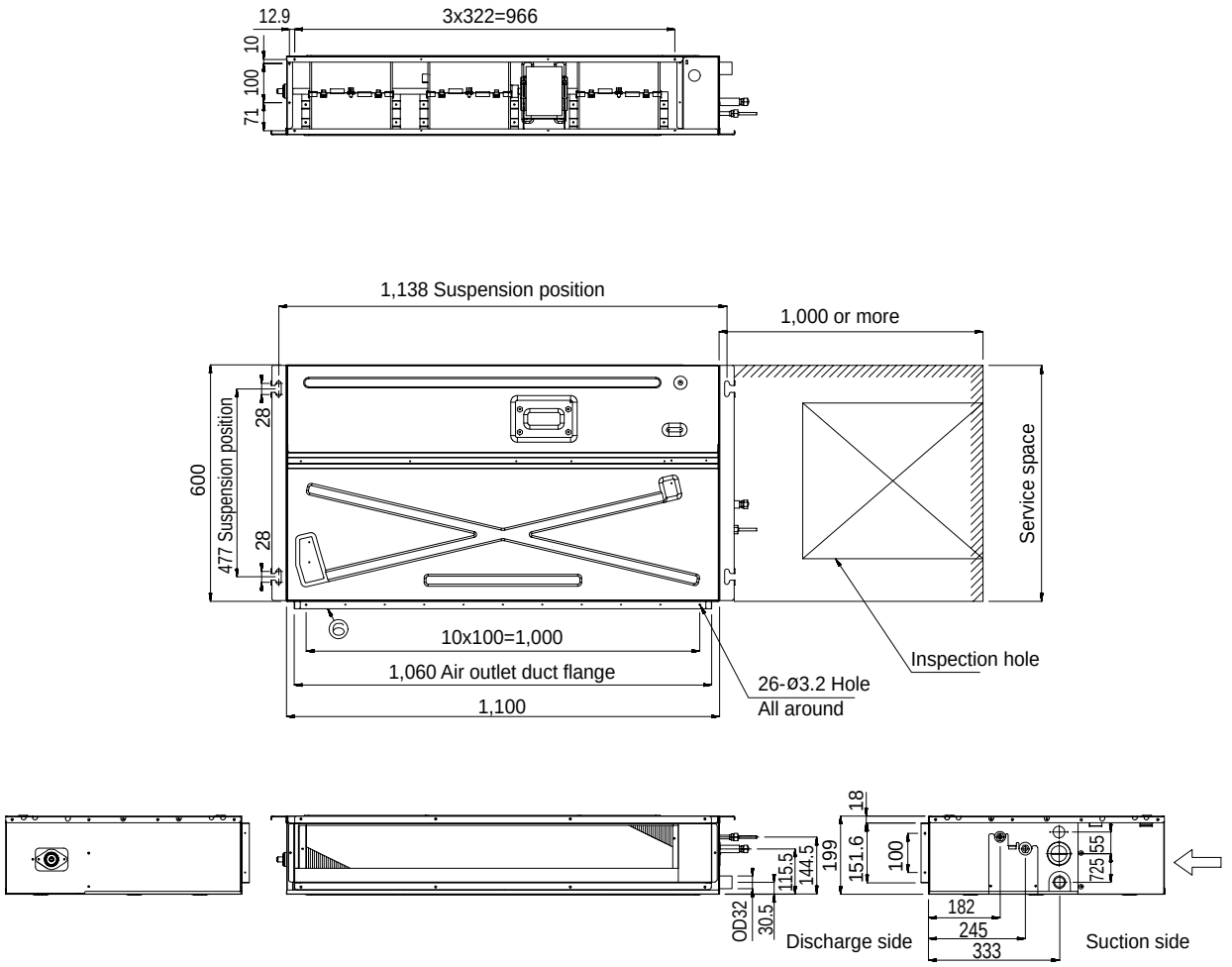
1) EH035EAV

Unit : mm



2) EH052EAV/EH070EAV

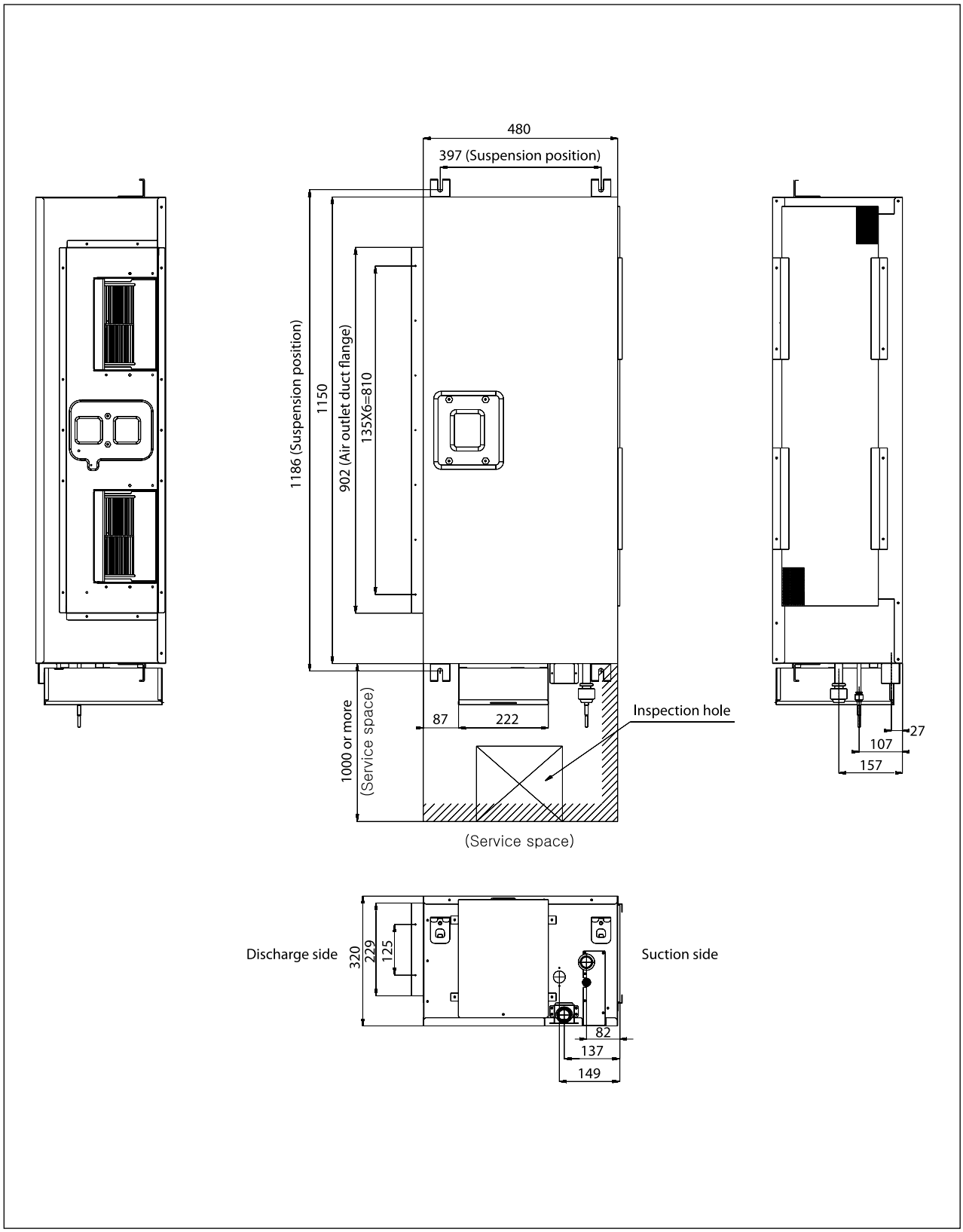
Unit : mm



2-5. MSP duct

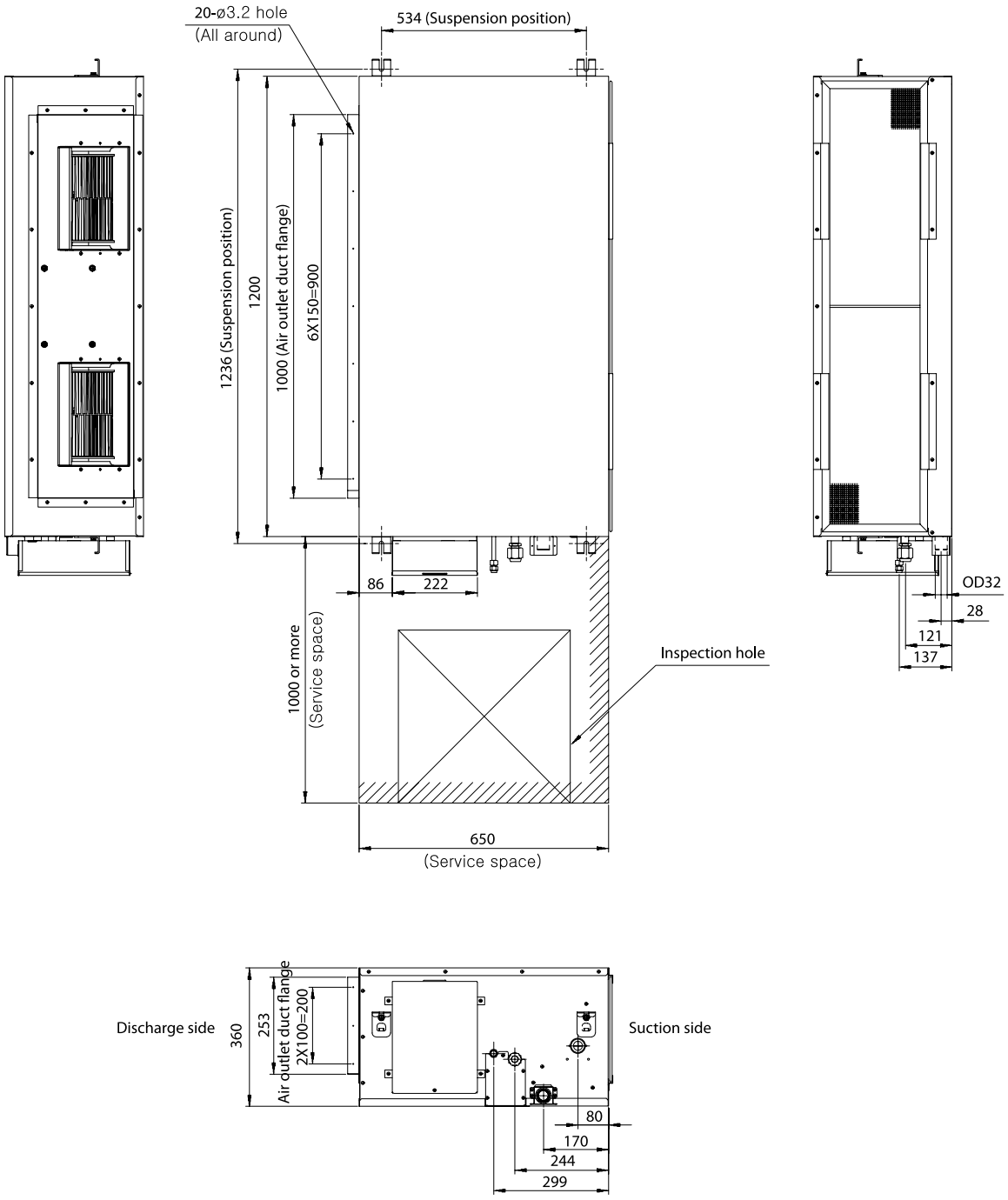
1) DH105EAV

Unit : mm



2) DH140EAV

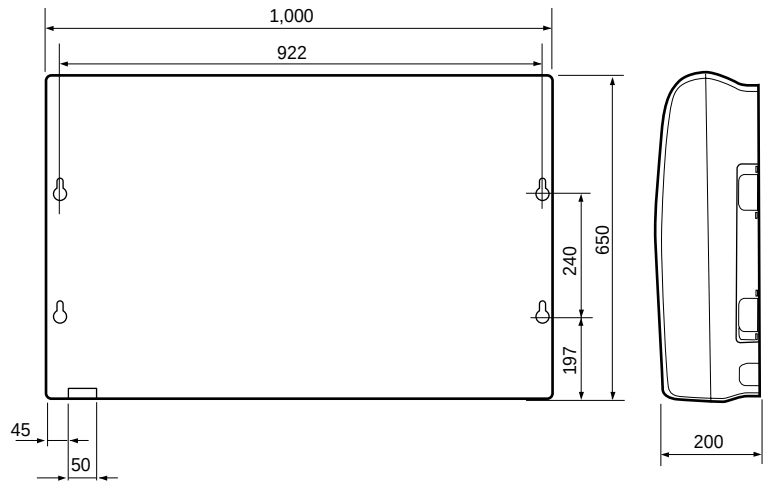
Unit : mm

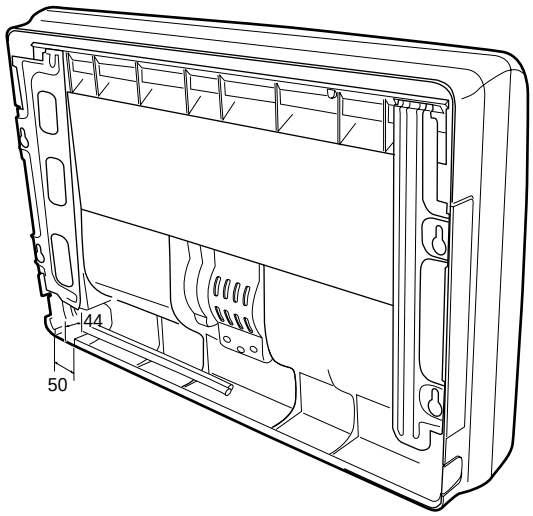


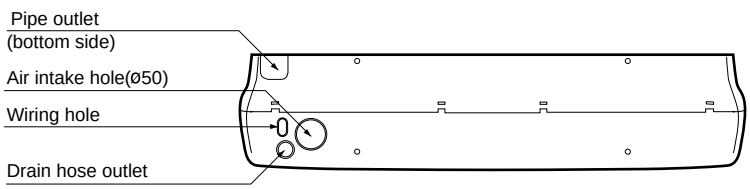
2-6. Ceiling

1) FH052EAV/FH070EAV

Unit : mm



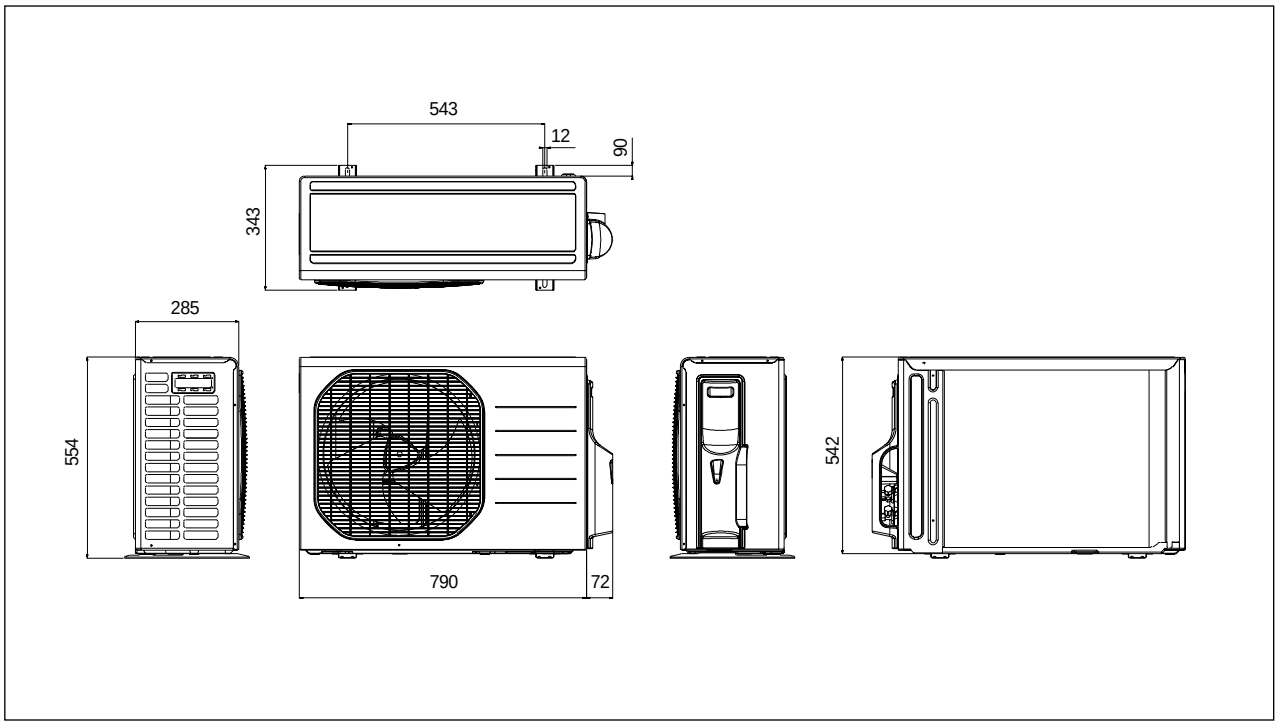




2-7. Outdoor unit

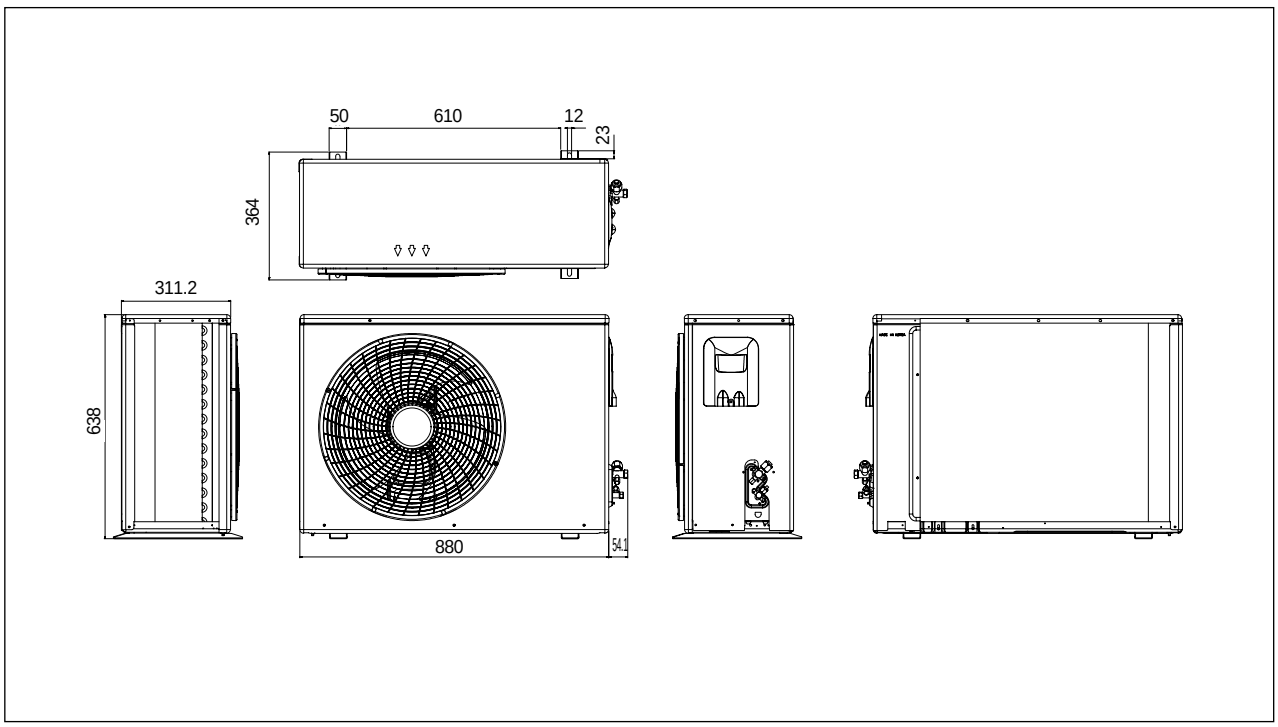
1) UH026EAV/UH035EAV

Unit : mm



2) UH052EAV

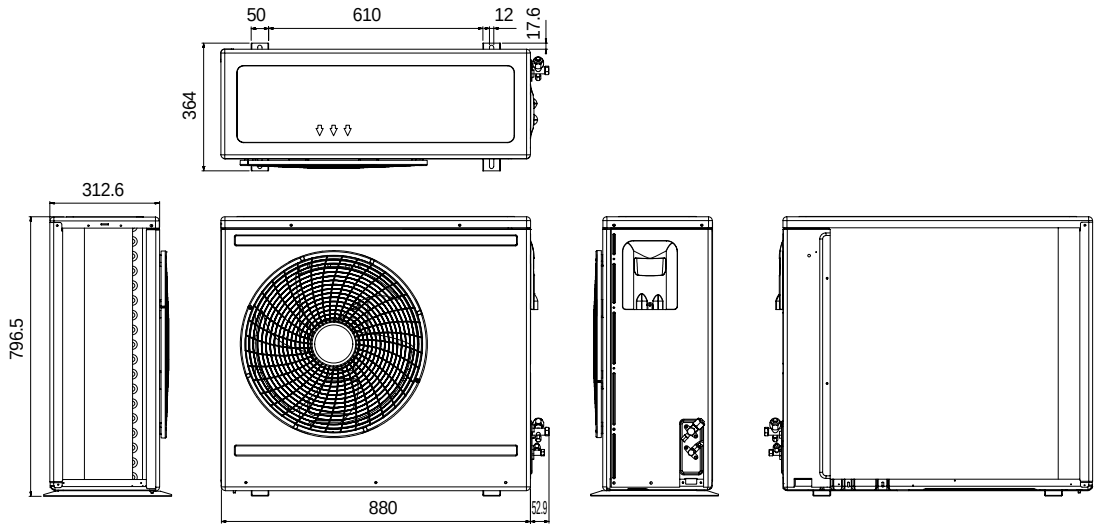
Unit : mm



2-7. Outdoor unit

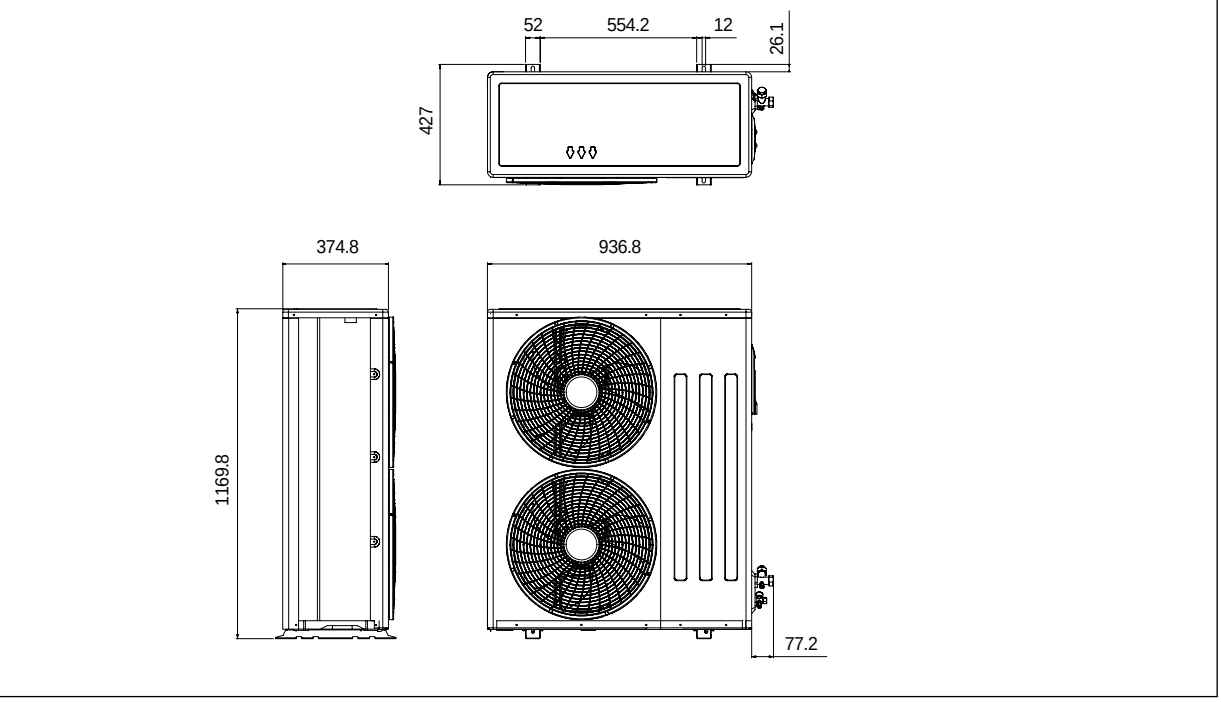
3) UH060EAV/UH070EAV

Unit : mm



4) UH105GAV/UH140GAV

Unit : mm

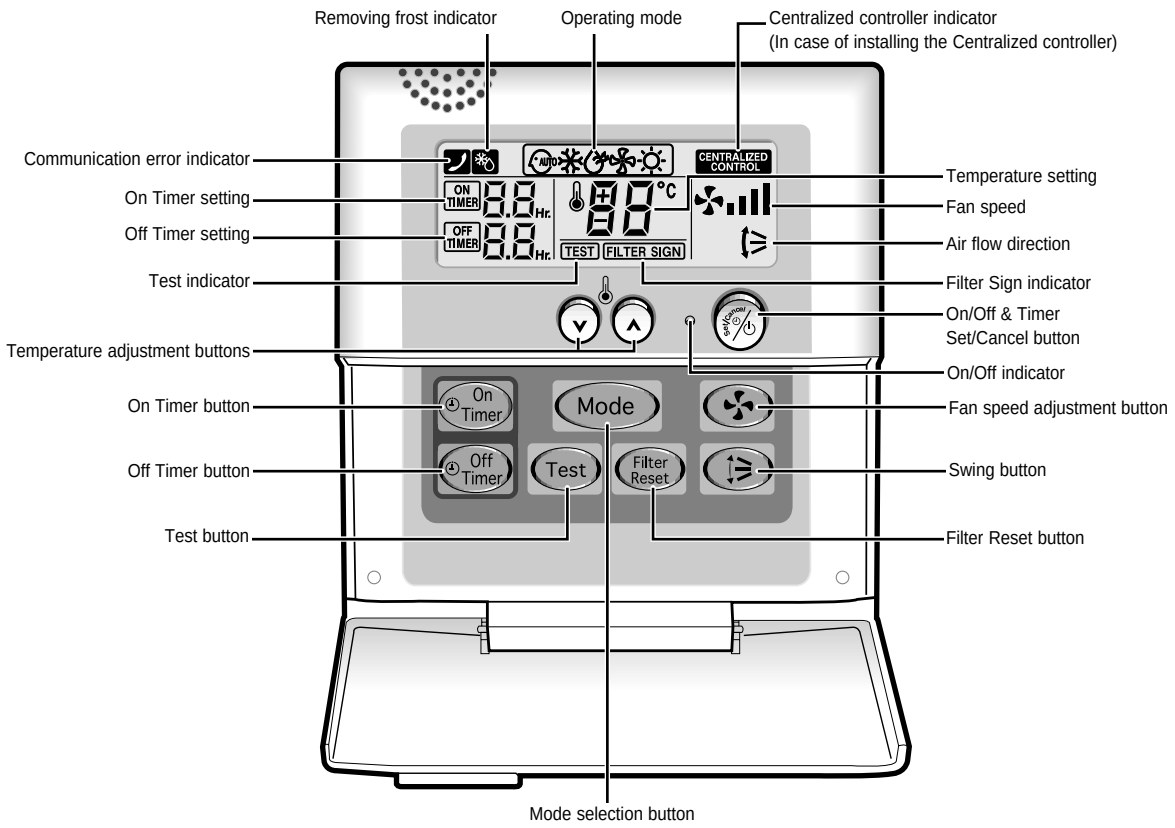


03 Installations

1. How to Use the Remote Controllers

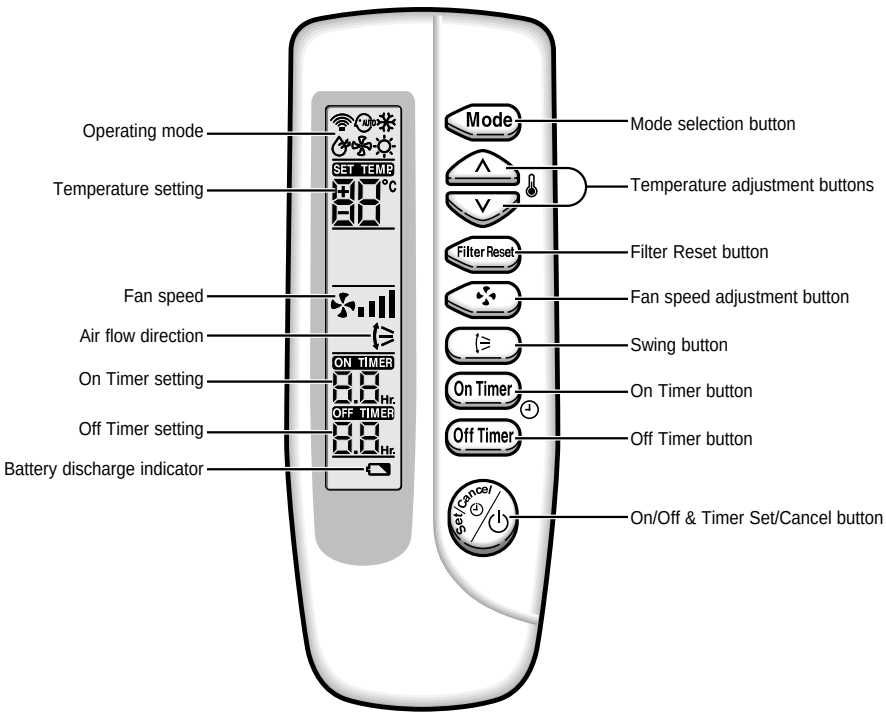
1-1. For Cassette Type Indoor Units

1) Features and Functions of the Wired Remote Controller



BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancel	• Start and stop of operation. - To toggle the operation On and Off. • When making the reservation. - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adjustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time. • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time. • One cycle or continuous operation is available.
Test	• Pressing the key for more than 3 seconds with the SET off starts the initial operation (forced cooling operation for 3 minutes).
Mode Selection	• To rotate in the order of AUTO → Cooling → Dehumidifying → Blowing → Heating.
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.
Air Flow Direction	• The blades are moving between up and down.

2) Features and Functions of the Wireless Remote Controller



BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancel	• Start and stop of operation. - To toggle the operation On and Off. • When making the reservation. - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adjustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time. • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time. • One cycle or continuous operation is available.
Mode	• To rotate in the order of Auto → Cooling → Dehumidifying → Blowing → Heating.
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.
Swing button (Timer Cancel)	• The blades are moving between up and down. (In case of Cassette model) • To cancel the reservation setting (In case of Duct model).

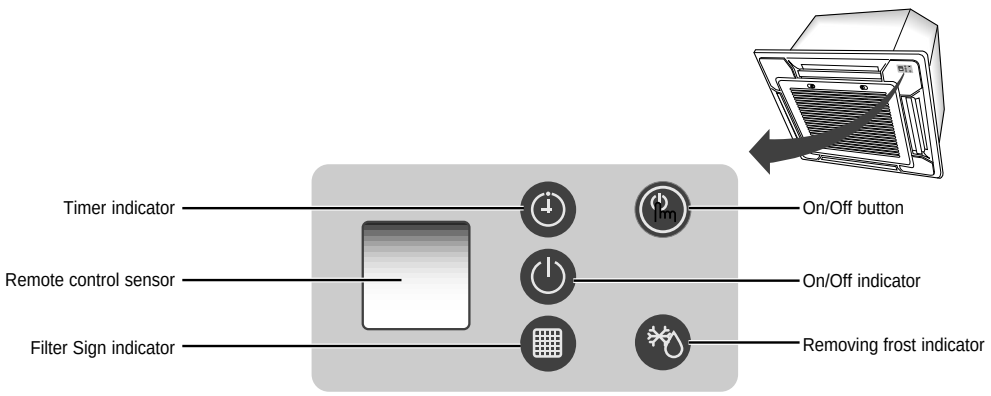
There is no test key separately assigned to the wireless remote controller.

<When doing the test operation with wireless remote controller...>
1. Remove both batteries from the wireless remote controller.
2. At the state of simultaneous pressing of On Timer key and Off Timer key, insert the batteries in the wireless remote controller.
3. When the wireless remote controller is on the TEST MODE, press On/Off key to make the SET for the Test operation.

1. How to Use the Remote Controllers

1-1. For Cassette Type Indoor Units

3) Features and Functions of the Wireless Receiving Board



4) Operation Specifications of Wireless Receiving Board

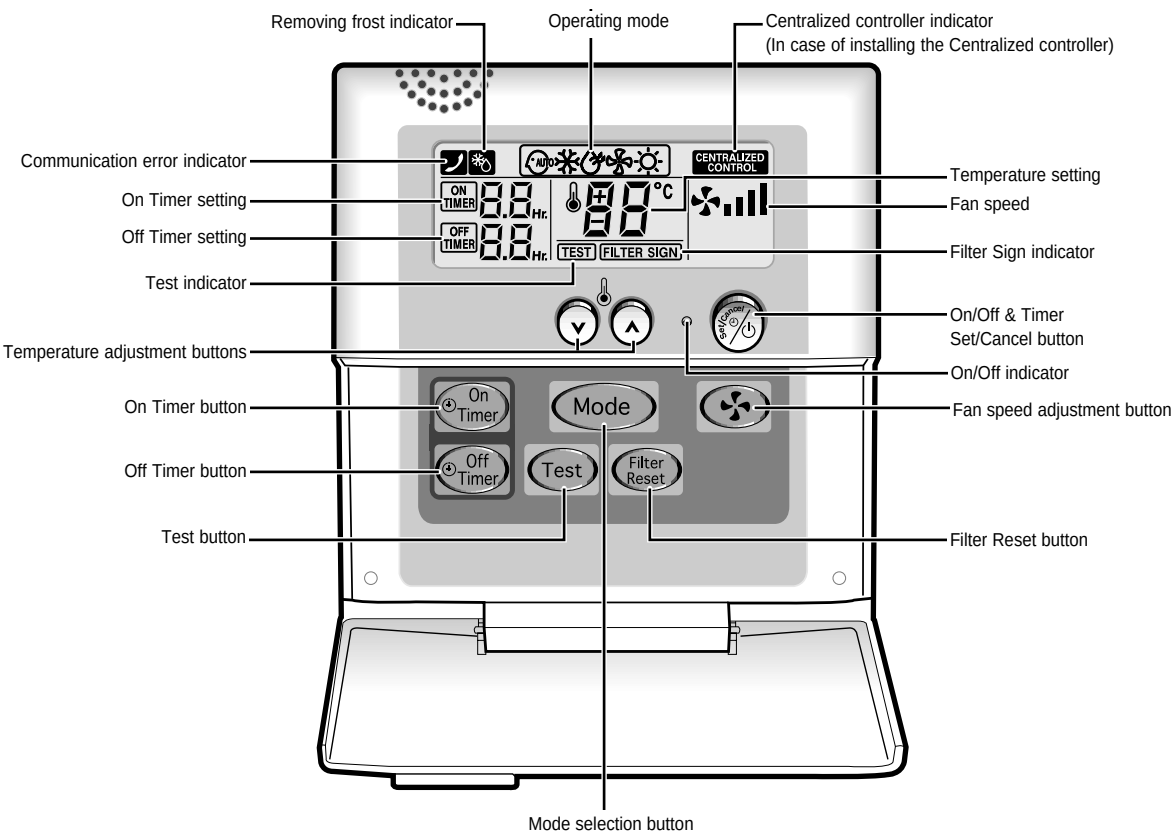
PART NAME	SOURCE & OPERATION SPEC.	REMARK
DEFROST LAMP	Red, lamp on during defrost operation	in ERROR DISPLAY : flickering
FILTER SIGN LAMP	Green, display during filter cleaning	in ERROR DISPLAY : flickering
TIMER LAMP	Green, lamp when setting the reserve operation	in ERROR DISPLAY : flickering
ON-OFF LAMP	Red, lamp during operation on	in ERROR DISPLAY : flickering
ON-OFF BUTTON	On/Off toggle operation	Operated only for automatic mode operation

5) Wireless Receiving Board and Outdoor Unit PCB Display Specifications When Error Occurs

ERROR MODE	CONTENTS OF ERROR	WIRELESS RECEIVING BOARD	REMARK
E1	Abnormal on indoor temperature sensor (4.9[V] and higher, 0.5[V] and lower)	Reservation LED flickering (1Hz period)	Restored when the indoor temperature sensor is normal
E5	Abnormal on indoor pipe temperature sensor (4.9[V] and higher, 0.5[V] and lower)	Operation LED and reservation LED flickering (1Hz period)	Restored when the indoor pipe temperature sensor is normal
E6	Abnormal on outdoor temperature sensor (4.9[V] and higher, 0.5[V] and lower)	Operation LED and filter LED flickering (1Hz period)	Restored when the outdoor temperature sensor is normal
E9	Float switch detection	Reservation LED and filter LED alternating flickering (1Hz period)	Float switch detection
EA	Indoor ↔ outdoor communication defect	Reservation LED and filter LED flickering (1Hz period)	Re-detecting by operating off signal after restoring
EC	Indoor unit ↔ wired remote controller communication defect	Operation LED and reservation LED alternating flickering (1Hz period)	-
Ed	Abnormal on outdoor pipe temperature sensor (4.9[V] and higher, 0.5[V] and lower)	Filter LED flickering (1Hz period)	Restored when outdoor pipe temperature sensor is normal

1-2. For Duct Type Indoor Units

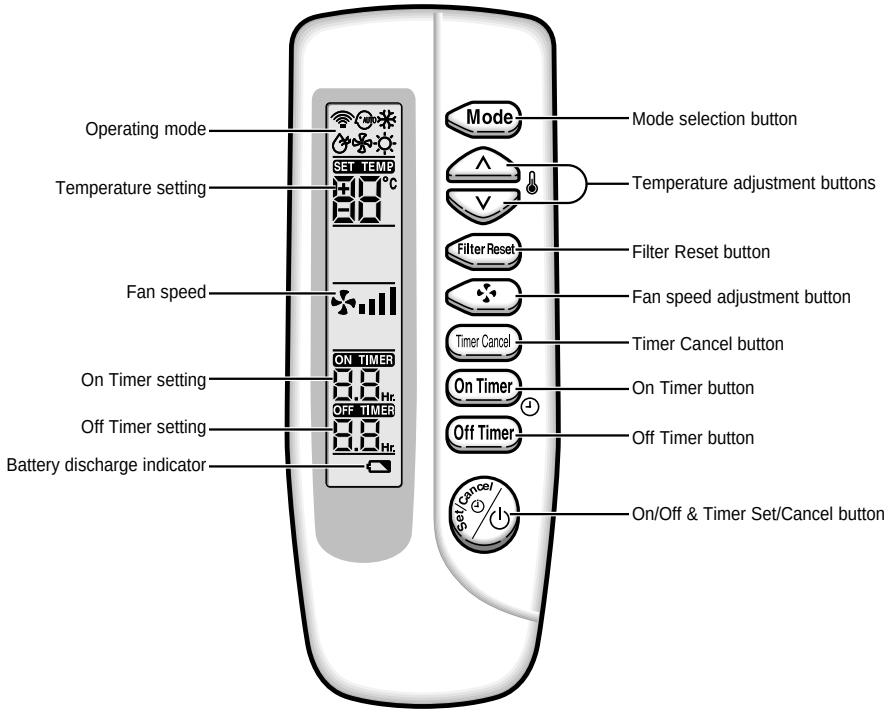
1) Features and Functions of the Wired Remote Controller



BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancel	• Start and stop of operation. - To toggle the operation On and Off. • When making the reservation. - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adjustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time. • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time. • One cycle or continuous operation is available.
Test	• Pressing the key for more than 3 seconds with the SET off starts the initial operation (forced cooling operation for 3 minutes).
Mode Selection	• To rotate in the order of AUTO → Cooling → Dehumidifying → Blowing → Heating.
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.

1-2. For Duct Type Indoor Units

2) Features and Functions of the Wireless Remote Controller

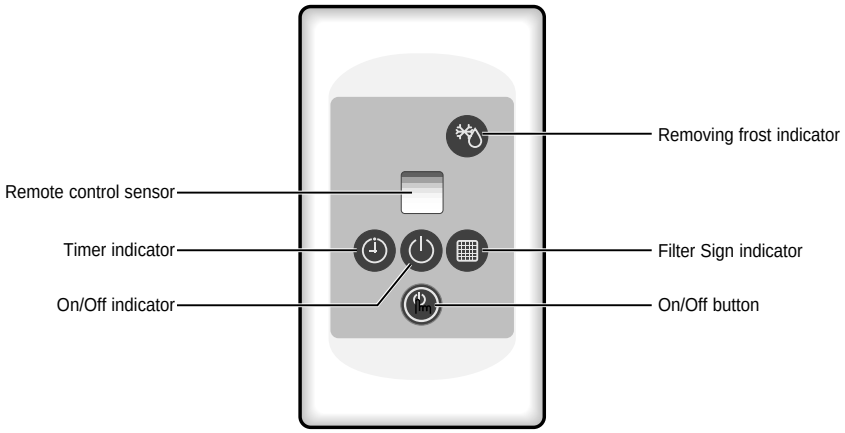


BUTTON NAME	FUNCTION
On/OFF & Timer Set/Cancel	• Start and stop of operation. - To toggle the operation On and Off. • When making the reservation. - The reservation time can be set or canceled when pushing the Timer Set/ Cancel button after adjusting the reservation time with On Timer or Off Timer.
Temperature adjustment (▲, ▼)	• To increase (▲) or decrease (▼) the desired temperature. • One cycle or continuous operation is available.
On Timer	• To increase the On reservation time. • One cycle or continuous operation is available.
Off Timer	• To increase the Off reservation time. • One cycle or continuous operation is available.
Timer Cancel	• To cancel the reservation setting (In case of Duct model). • To swing the top and bottom louver (In case of Cassette model).
Mode	• To rotate in the order of Auto → Cooling → Dehumidifying → Blowing → Heating.
Filter Reset	• When the filter sign display starts to show the replacement time of filter of indoor unit, pressing the key after cleaning the filter resets the filter sign.
Fan Speed	• The wind mode to rotate in the order of wind select button, Breeze → Weak → Strong → Wind auto → Breeze.

There is no test key separately assigned to the wireless remote controller.

<When doing the test operation with wireless remote controller...>
1. Remove both batteries from the wireless remote controller.
2. At the state of simultaneous pressing of On Timer key and Off Timer key, insert the batteries in the wireless remote controller.
3. When the wireless remote controller is on the TEST MODE, press On/Off key to make the SET for the Test operation.

3) Features of the Receive & Display Unit

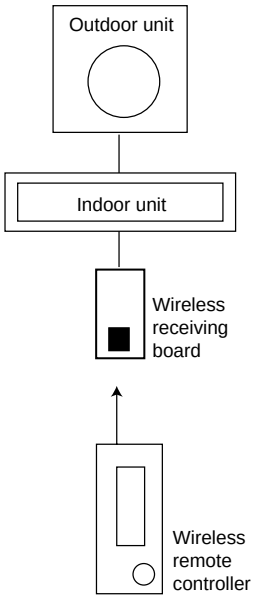


4) Operation Specification of Wireless Receiving Board

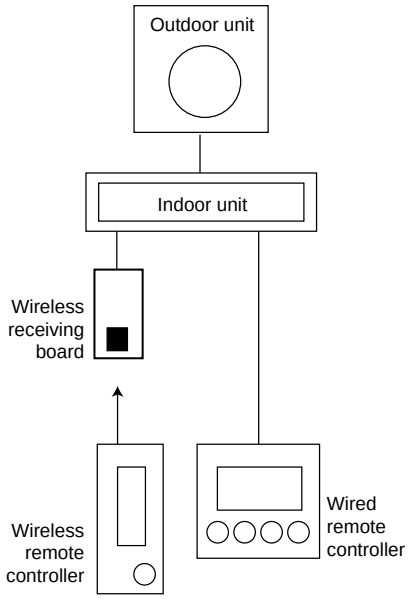
PART NAME	SOURCE & OPERATION SPECIFICATION	REMARK
DEFROST LAMP	RED, lamp on during defrost operation	In ERROR DISPLAY : flickering
FILTER SIGN LAMP	Green, display during filter cleaning	In ERROR DISPLAY : flickering
TIMER LAMP	Green, lamp when setting the reserve operation	In ERROR DISPLAY : flickering
ON-OFF LAMP	Red, lamp during operation on	In ERROR DISPLAY : flickering
ON-OFF BUTTON	On/Off toggle operation	Operated only for automatic mode operation

1-3. Examples of Remote Controller Control

◆ Examples of 1 chamber under wireless remote controller single control and 1 chamber under wireless remote controller + wired remote controller combination control.



Example of 1 chamber single control (wireless remote controller)



Example of 1 chamber combination control (wireless + wired remote controller)

* In case of 1 chamber combination control (wireless remote controller+wired remote controller), the wired remote controller is available to be set as both MASTER and SLAVE.

1) Setting the Wired Remote Controller to MASTER MODE

(1) Turn off the power.
(2) For the combined use of wireless remote controller and wireless remote controller, turn on the option switch(DS01)4 of wired remote controller.
(3) Turning off the option switch 4 of wired remote controller disables the control by wireless remote controller.
(4) Turn on the power.

After resetting the option in the wired remote controller, be sure to turn the power on again so that the set option is be applied.

1-4. PCB Option and Switch(DS01) Setting of the Wired Remote Controller

DIP SWITCH	OPTION ITEM	SWITCH ON	SWITCH OFF	DEFAULT
1	Basic specifications	-	-	Fixed to OFF
2	Indoor unit control	Group control	Indoor unit 1 chamber control	OFF
3	Basic specifications	-	-	Fixed to OFF
4	Combined use of wireless remote controller	Able to operate of wired remote controller (SLAVE MODE)	Disable to operate the wireless remote controller (MASTER MODE)	OFF

1-5. Function Comparison of Wired Remote Controller vs Wireless Remote Controller

◆ In case of control for the wired remote controller and wireless remote controller installed individually, almost similar functions are performed, and in case of combined use of wired and wireless remote controllers, Enable/Disable can be set at the wired remote controller for the wireless remote controller but the 16 chambers operation can be done only from wired remote controller.

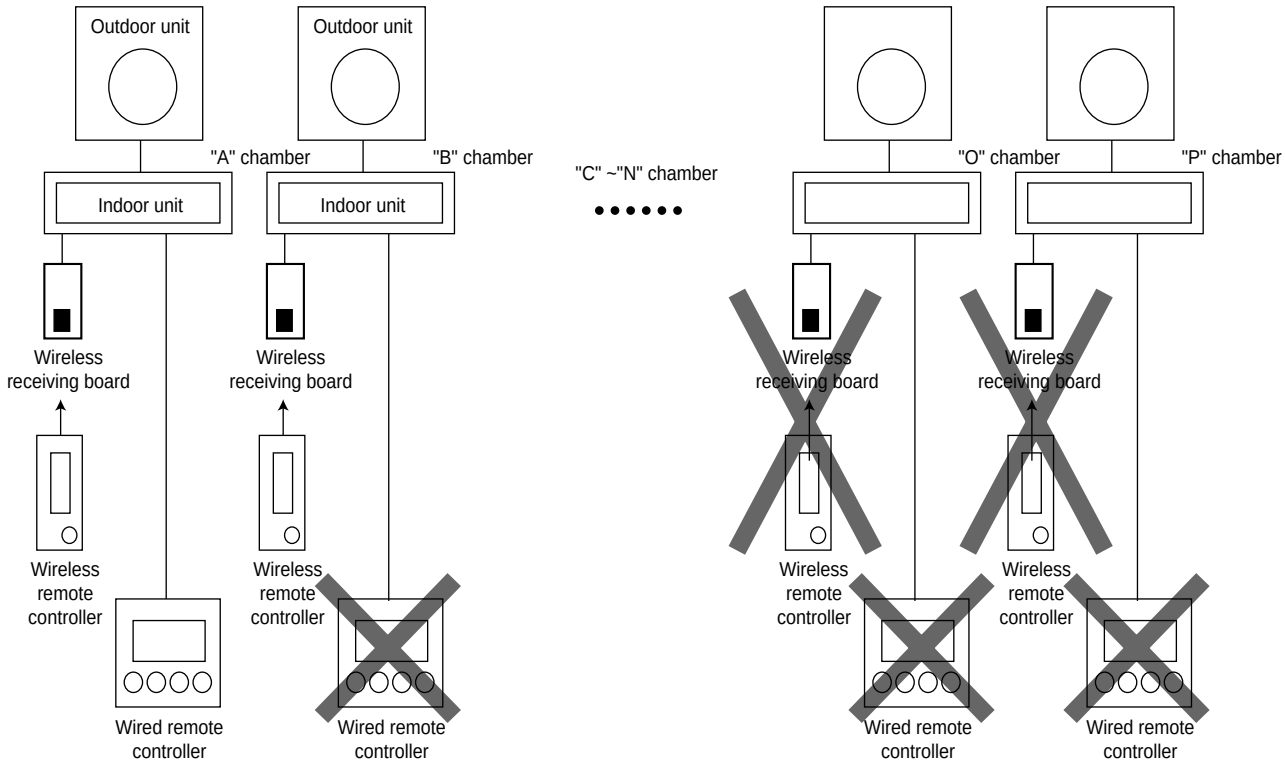
PART NAME	WIRED REMOTE CONTROLLER	WIRELESS REMOTE CONTROLLER
Operation ON/OFF	ON/OFF available	ON/OFF available
Wind flow setting	Up and down control available (Cassette model)	Up and down control available (Cassette model)
Wind volume setting	Breeze / Mild / Strong adjustment available	Breeze / Mild / Strong adjustment available
Group operation	16 chamber group operation available	16 chamber group function not available
Test operation	Test operation by test button	Available by combination of button during the power reset without test button
Operation mode setting	Setting of auto / cooling / dehumidifying / blowing/heating	Setting of auto / cooling / dehumidifying / blowing/heating
Reservation function	Start / stop / start-stop reservation available	Start/stop/start-stop reservation available
Timer cancel	Timer cancel button provided (Duct model)	No timer cancel button
Temperature setting	Cooling : 18˚C ~ 30˚C Heating : 16˚C ~ 30˚C settable	Cooling : 18°C ~30°C Heating : 16°C ~30°C settable
Filter reset	Filter reset button provided	Filter reset button provided
Centralized control display	Displayed as centralized control	No function
Self-diagnosis among the group control	To display while scanning the installed set during reset	No function
Error display	Displayed as 2 digit segment	No function
Master/slave setting	Master/slave settable by PCB option switch	No function

1-6. Option and DIP Switch Setting(SW2) of Ass'y Main in PCB

DIP SWITCH	OPTION ITEM	SWITCH ON	SWITCH OFF	DEFAULT
1	VENTILATOR FAN	Not installed	Not installed	-
2	DRAIN PUMP	Installed	Installed	-
3	FLOAT SWITCH	Installed	Not installed	-
4	FILTER CLEANING PERIOD	1000 Hr	2000 Hr	-
5	INDOOR FAN MOTOR SPEED	NORMAL SPEED	HIGH SPEED	-

2. System Control Configuration

2-1. Wired Remote Controller System Configuration



◆ Turn on the set power installed in each chamber.

Caution

◆ During the connection, connect the "R1" of indoor unit terminal board installed in each chamber with "R1".
◆ During the connection, connect the "R3" of indoor unit terminal board installed in each chamber with "R3".
◆ Do not connect the terminal R2 of indoor unit terminal board from "B" to "F" chamber except "A" chamber.
◆ The option item, centralized controller shall be removed since the simultaneous use with wired remote controller is disable during the group control.
◆ Adjust the address of indoor unit digital switch installed in each chamber so that it might not be duplicated.

1) Setting the Wired Remote Controller

(1) Turn off the set power where the wired remote controller is installed.
(2) Turn on the option switch SW2(DS01) of wired remote controller.
(3) Turn on the set power where the wired remote controller is installed.

Caution

◆ The option can be applied when the power is put again after resetting the option of wired remote controller. Be sure to keep the set power on/off after option setting.

2-2. Startup by Wired Remote Controller

1) Startup in Case of the "A" Chamber Single Operation

(1) Turn on the set power.
(2) Adjust the address of digital switch of indoor unit PCB to "0".
(3) Turn ON the option switch(DS01) N02 of wired remote controller PCB.
(4) Turn on the set power.
(5) Press the test button of wired remote controller for more than 3 seconds.
(6) The set is operated for 3 minutes by the forced cooling operation and the set is off after 3 minutes.
(7) The Error occurring in the TEST operation is displayed on in the wired remote controller display window.
Refer to chapter VII, page 6.

2) Startup of Group Operation

(1) Turn off the power of SET.
(2) Adjust the addresses of digital switch of indoor unit PCB to "0"~"15", respectively.
(3) Turn on the option switch SW2 of wired remote controller PCB.
(4) Turn on the power of SET.
(5) On the wired remote controller display, the digits "00" → "11" → "22" are displayed up to "FF".
After "FF" display, the wired remote controller is automatically set to the preserved operation status of indoor unit of chamber "A".
(6) If the current SET of chamber "A" is ON, put the set off by pressing the ON/OFF button.

3) TEST Operation

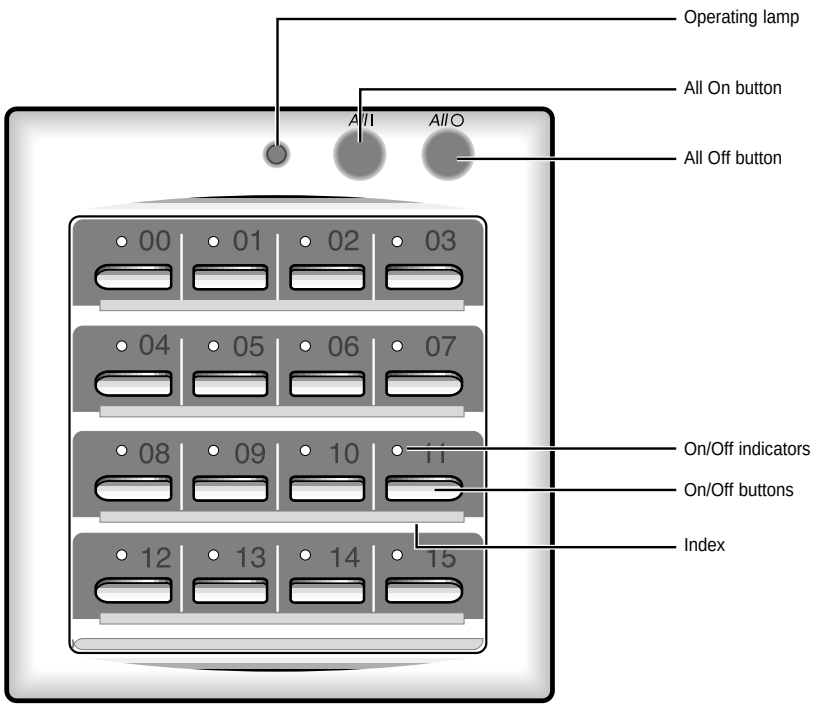
◆ Only at the SET off of chamber “A” the TEST mode in enabled.

(1) Press the TEST BUTTON of wired remote controller for more than 3 seconds.
(2) If the SET is operating for 3 minutes through forced cooling operation, the SET is off after 2 minutes.
(3) The Error occurring in the TEST operation is displayed on in the wired remote controller display window.
Refer to chapter VII, page 6.

3. How to Use the Centralized Controller

3-1. Features and Functions

◆ The centralized controller is an optional accessory which is installed on the wall.



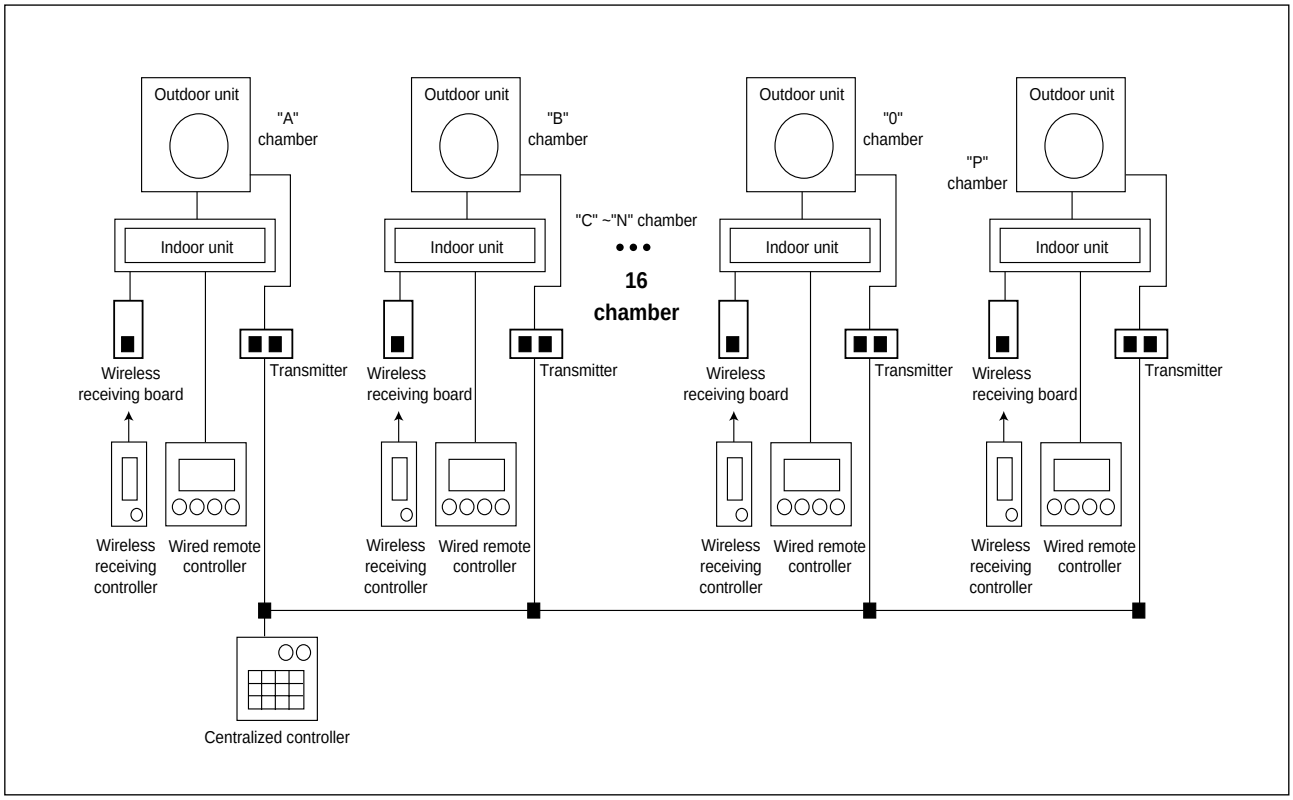
Note Operating lamp comes on when at least one air conditioner connected to the centralized controller is operating.

◆ Since the centralized controller has the relay equipment, the option mounted on the indoor unit, the On/Off can be set for 16 chambers through the modem communication.
◆ Linkage of wired remote controller to wired remote controller is available by 3 kinds of level.
◆ The maximum extended distance of 1 km is possible through modem communication.
The relay equipment is installed at the option item, indoor unit.
◆ The connection by non-polarity method is easy.

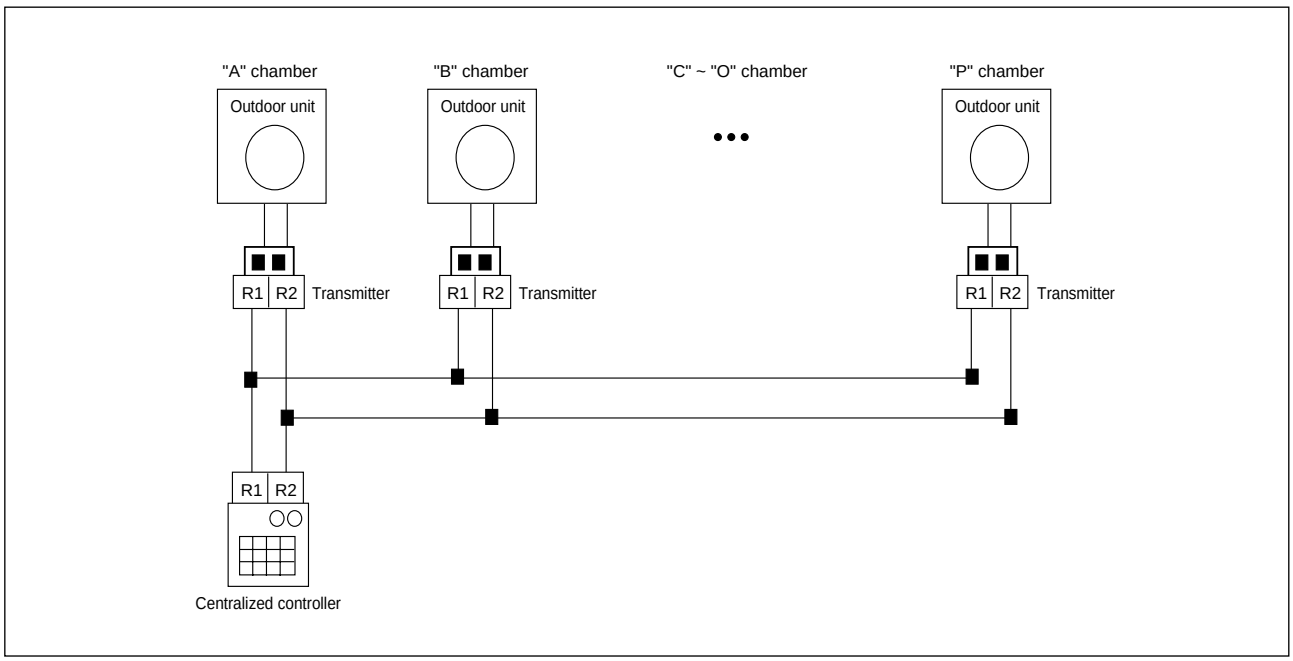
BUTTON NAME	FUNCTION
ALL 1	To turn on all 16 chamber's set.
ALL 0	To turn off all 16 chamber's set.
"00" ~ "15"	To turn on/off set assigned with the number.

3-2. Centralized Control System Configuration

◆ 16 Chambers Centralized Control System. (Wired remote controller + Wireless remote controller + Centralized controller)



3-3. Chambers of Centralized Control System



4. Drain Hose Installation

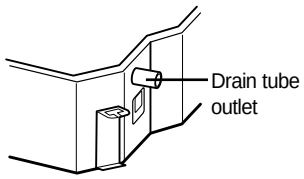
4-1. Cassette Type

◆ Care must be taken when installing the drain hose for the indoor unit to ensure that any condensate water is correctly drained outside.

1) Installing the Drain Hose

(1) Insert the flexible hose to the drain tube outlet, if necessary.

Note Attach the drain hose to the drain tube outlet with the adhesives to prevent water leaks, then secure the hose with a band etc. (The band is not supplied with the air conditioner.)

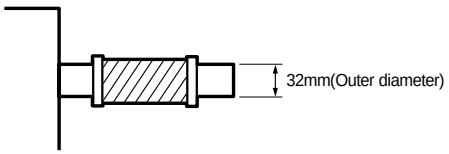


(2) Install the drain hose so that its length can be as short as possible. Internal diameter of the drain hose should be the same or slightly bigger than the external diameter.

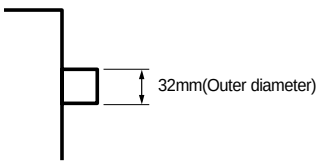
Note
- ◆ Give a slight slant to the drain hose for proper drainage of condensate.
- ◆ Secure the drain hose with the band joint and the cable-tie not to be separated from the unit.

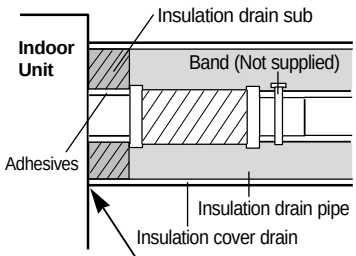
Inner diameter of the drain hose

◆ Flexible hose is connected



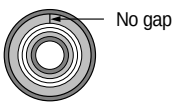
◆ Flexible hose is not connected





Caution

Must fit tightly against body without any gap.



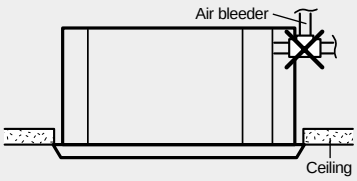
(3) Wrap the drain hose with the insulation drain as shown in figure and secure it.

Note When connecting the drain hose without the flexible hose, you should attach it to the drain tube outlet with adhesives and tapes to prevent water leaks.

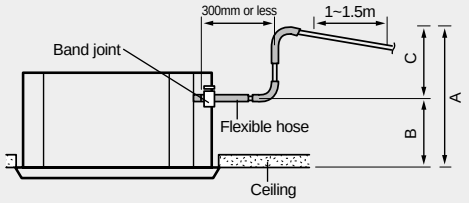
Caution

◆ **Check that the indoor unit is level with the ceiling by using the leveler.**

- Do not install air bleeding tubes, as this may cause water to spray from the drain tube outlet.

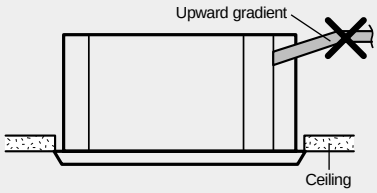


- If it is necessary to increase the height of the drain hose somewhat, the portion directly after 30cm. If it is raised higher than 50cm, there can be water leaks.

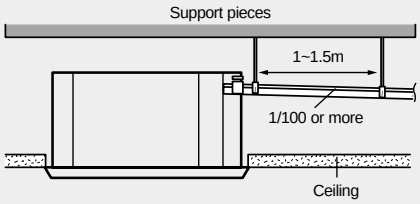


	KH✳✳✳EAV	TH✳✳✳EAV	CH070EAV	CH105/140EAV
A	750	750	750	750
B	144	166	180	197
C	606	584	570	553

- Do not give the hose and upward gradient after the connection port.
  This will cause water to flow backwards when the unit is stopped, resulting in water leaks.



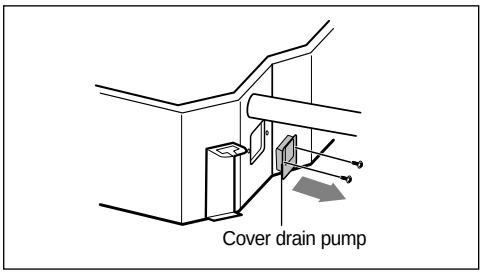
- Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



2) Testing the Drainage

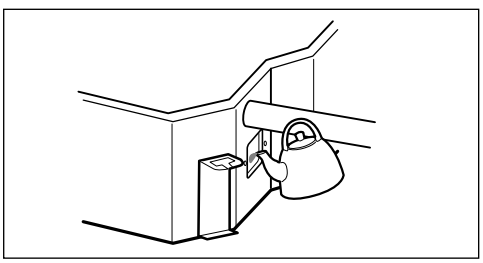
◆ You should test the drainage after completing the installation. Prepare a little water about 2 liters.

(1) Remove two screws on the cover drain pump and pull out the cover.



(2) Pour water into the indoor unit as shown in figure.

Note If you do not pour water inside the water supply intake, water may spill from the indoor unit.



(3) Confirm that the water flows out through the drain hose.

Note You can check the drainage only when the air conditioner is turned on.

(4) Reassemble the cover drain pump and the screws.

4. Drain Hose Installation

4-2. Duct Type

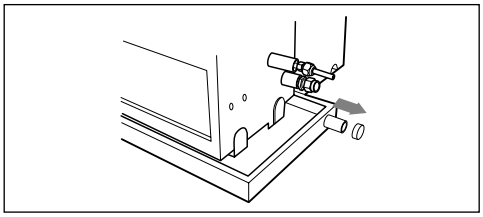
◆ Care must be taken when installing the drain hose for the indoor unit to ensure that any condensate water is correctly drained outside. The drain hose can be installed to the right or left side of the base pan.

1) Installing the Drain Hose

(1) Remove the rubber cap located on the side of the base pan depending on the situation.

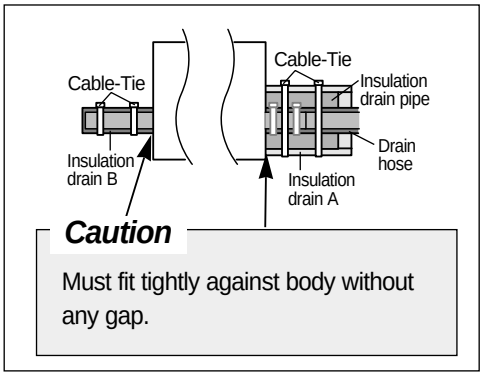
Note Attach the drain hose to the drain tube outlet with the adhesives to prevent water leaks, then secure the hose with a band etc.(The band is not supplied with the air conditioner.)

(2) Install the drain hose so that its length can be as short as possible. Internal diameter of the drain hose should be the same or slightly bigger than the external diameter.



Note
- ◆ Give a slight slant to the drain hose for proper drainage of condensate.
- ◆ Secure the drain hose with the cable-tie not to be separated from the unit.

(3) Wrap the drain hose with the insulation drain pipe, the insulation drain A as shown in figure and secure them. And wrap the other drain tube outlet with the insulation drain B provided.



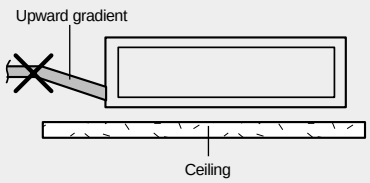
Caution

Must fit tightly against body without any gap.

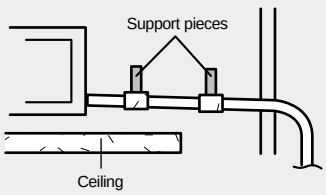
Caution

When not installing the drain pump

- Do not give the hose and upward gradient after the connection port. This will cause water to flow backwards when the unit is stopped, resulting in water leaks.

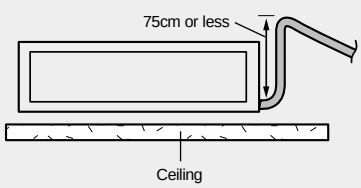


- Do not apply force to the piping on the unit side when connecting the drain hose. The hose should not be allowed to hang loose from its connection to the unit. Fasten the hose to a wall, frame or other support as close to the unit as possible.



When installing the drain pump

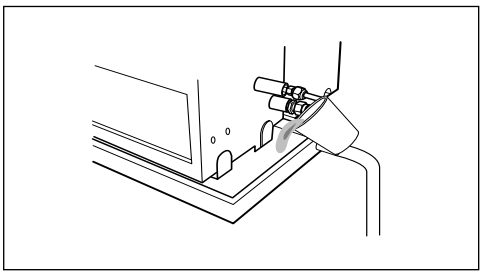
- If it is necessary to increase the height of the drain hose somewhat, the portion directly after 75cm. If it is raised higher than 75cm, there can be water leaks.



2) Testing the Drainage

◆ Prepare a little water about 5 liters.

(1) Pour water into the base pan in the indoor unit as shown in figure.



(2) Confirm that the water flows out through the drain hose.

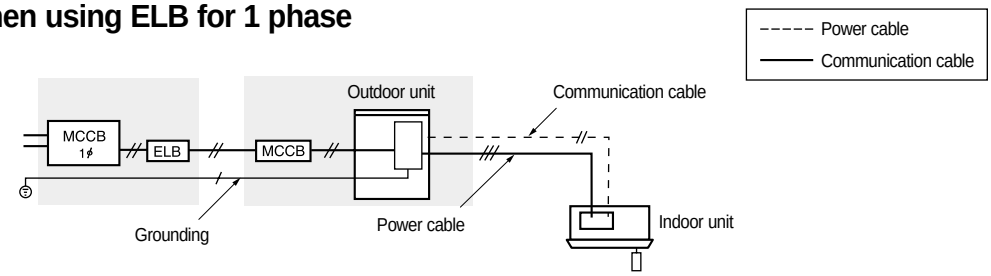
5. How to Connect the Cables

❋ Two electronic cables must be connected to the outdoor unit.

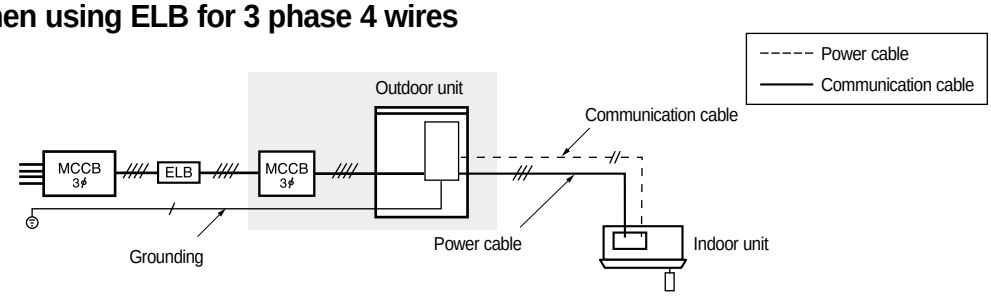
- One is connection cord between indoor unit and outdoor unit.
  Another is power cable between outdoor unit and auxiliary circuit breaker.
- Specially for Russian and European market, before installation, the supply authority should be consulted to determine the supply system impendance to ensure compliance.

5-1. Examples of Air Conditioning System

1) When using ELB for 1 phase



2) When using ELB for 3 phase 4 wires



◆ If an outdoor unit is installed in a place in danger of an electric leak or submergence, you must install the ELB.

5-2. Cable Specifications

1) Power Cable

TYPE OF OUTDOOR UNIT	POWER SUPPLY											
	3 PHASE						SINGLE PHASE					
	Power Supply	Max/Min (V)	MCCB	ELB	Power Cable	Length	Power Supply	Max/Min (V)	MCCB	ELB	Power Cable	Length
UH026/ 035EAV	-	-	-	-	-	-	220-240V~ /50Hz	242/198	Frame: 30A Trip:20A	20A	2.5mm², 3 Wires	20m or less
					-	-						
UH052EAV	-	-	-	-	-	-	220-240V~ /50Hz	242/198	Frame: 30A Trip:25A	25A	2.5mm², 3 Wires	30m or less
					-	-						
UH060/ 070EAV	-	-	-	-	-	-	220-240V~ /50Hz	242/198	Frame: 30A Trip:30A	30A	2.5mm², 3 Wires	30m or less
					-	-						
UH105/ 140GAV	380-415V~ /50Hz	418/342	Frame: 30A Trip:20A	20A	2.5mm², 4 Wires	10m or less	-	-	-	-	-	-
					3.0mm², 4 Wires	20m or less					-	-

◆ The power cable is not supplied with air conditioner.
◆ For power cable, use the grade H07RN-F or H05RN-F materials.

2) Connection Cord

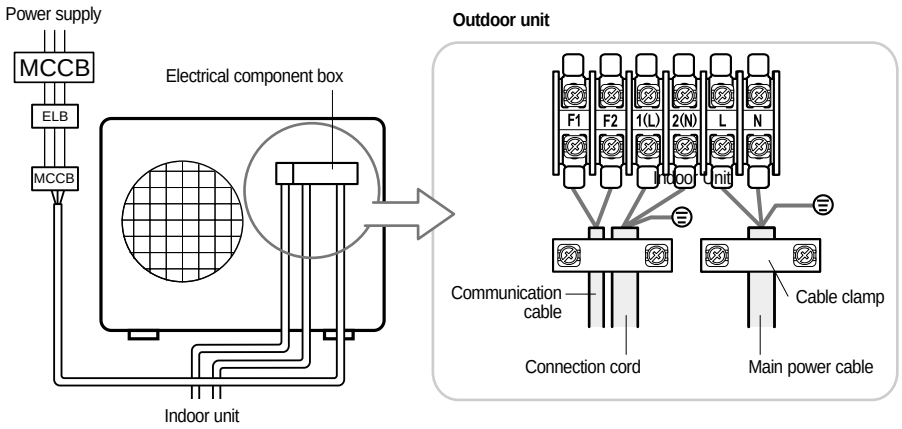
POWER SUPPLY (SINGLE PHASE)			COMMUNICATION CABLE	MAX.LENGTH
Power Supply	Max/Min(V)	Connection Wire		
220-240V~/50Hz	±10%	0.75mm², 3 Wires	0.75mm², 2 Wires	1km

◆ For connection cord, use the grade H07RN-F or H05RN-F materials.

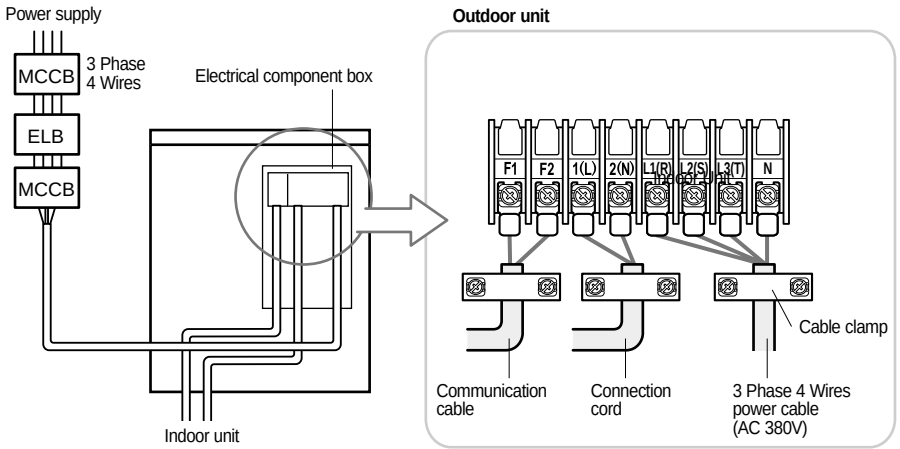
5-3. Wiring Diagram

1) Power Cable

◆ When using an ELB for 1 phase



◆ When using an ELB for 3 phase 4 wires



Caution

◆ You should connect the power cable into the power cable terminal and fasten it with a clamp.

◆ The unbalanced power must be maintained within 2% of supply rating.

- If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 4% of supply rating, the indoor unit is protected, stopped and the error mode indicates.

◆ To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units in the iron pipe.

◆ Connect the power cable to the auxiliary circuit breaker. An all pole disconnection from the power supply must be incorporated in the fixed wiring(≥3mm).

◆ Must keep the cable in a protection tube.

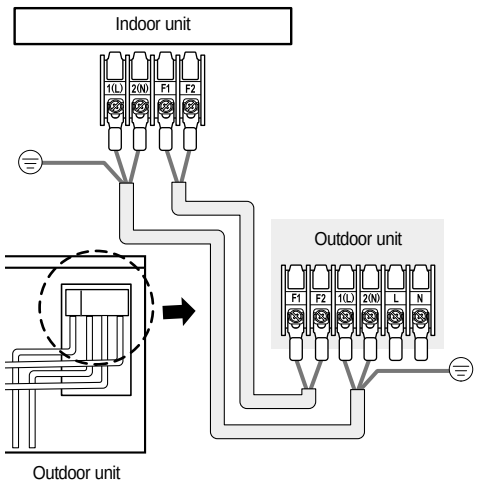
◆ Keep distances of 50mm or more between power cable and communication cable.

5. How to Connect the Cables

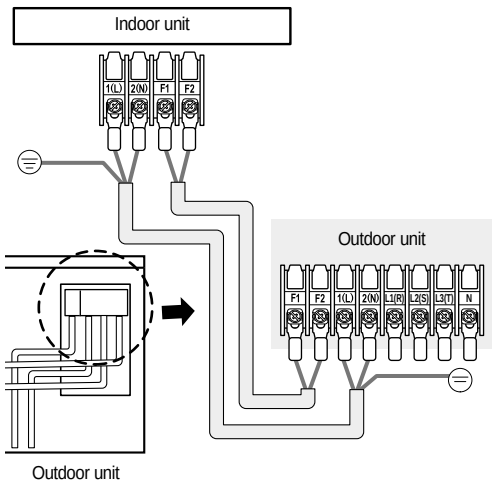
5-3. Wiring Diagram

2) Connection Cord

◆ UH✳✳✳EAV



◆ UH✳✳✳GAV



Note Ground wire for the indoor unit and outdoor unit connection cable must be clamped to a soft copper tin-plated eyelet terminal with M4 screw hole(NOT SUPPLIED WITH UNIT ACCESSORIES).

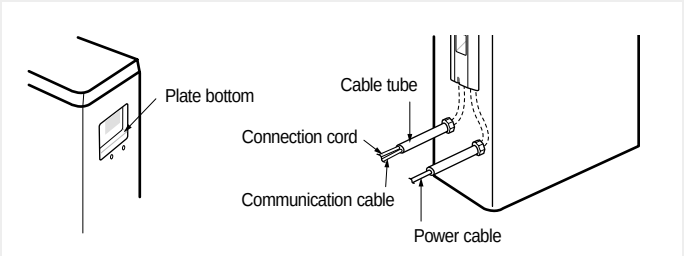
5-4. Connecting the Power Terminal

- ◆ Connect the cables to the terminal board using the compressed ring terminal.
- ◆ Connect the rated cables only.
- ◆ Connect using a driver which is able to apply the rated torque to the screws.
- ◆ If the terminal is loose, fire may occur caused by arc.
  If the terminal is connected too firmly, the terminal may be damaged.

TIGHTENING TORQUE (kgf·cm)		
M3	5.9	1∅ 220V
M4	30.0	3∅ 380V

Caution

◆ Ground wire for the indoor unit and outdoor unit connection cable must be clamped to a soft copper tin-plated eyelet terminal with M4 screw hole(NOT SUPPLIED WITH UNIT ACCESSORIES).



◆ Must keep the cable in a protection tube.

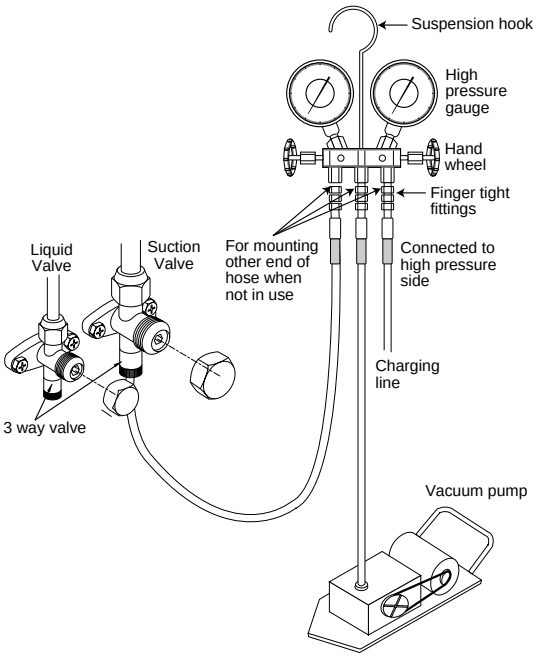
◆ Keep distances of 50mm or more between power cable and communication cable.

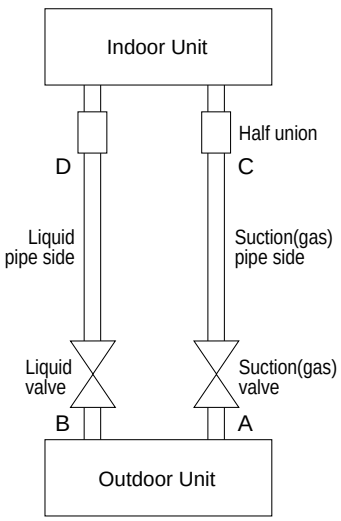
◆ When the cables are connected through the hole, remove the Plate bottom.

6. Air-Purge Procedure

◆ Use the vacuum pump to remove N2 gas or air inside the indoor unit and pipes.

1. Tighten all pipe connections (A, B, C, D) to prevent any leakage.
2. Check that the suction and liquid valves are turned off clockwise to close the outdoor unit.
3. Remove the cap on the opposite side of the Suction tube connection (A) and connect a hose from the pressure gauge of which other end is connected to the vacuum pump.
4. Operate the vacuum pump enough until the pressure gauge indicates "0".
5. Disconnect the hose from the suction valve carefully not to break the vacuum.
6. Turn on the suction and liquid valves counterclockwise to open the outdoor unit to the indoor unit.
7. Check the leakage on the connections. (A, B, C, D)
8. Check each valve for leakage.





✳ **Important Information**

◆ When you want to vacuumize the whole system

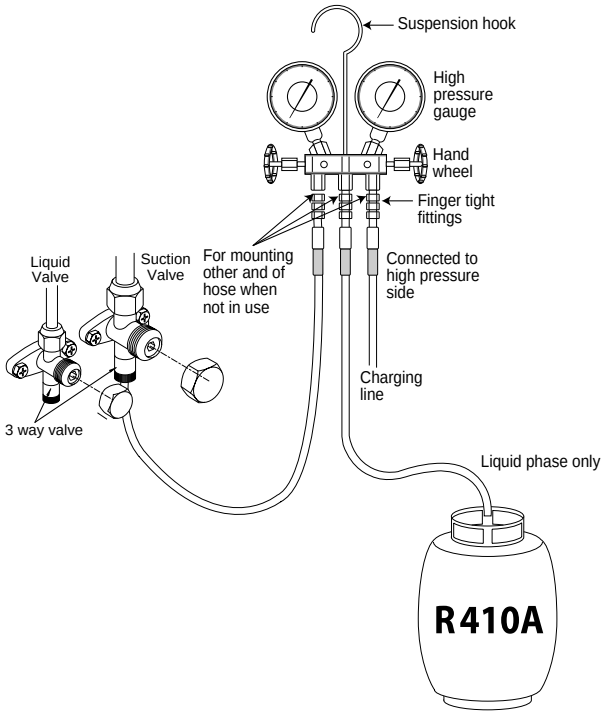
EEV full open condition	Power source is connected & Air conditioner is not operating
EEV control condition	Power source is connected & Air conditioner is operating

7. How to Recharge the Refrigerant

7-1. Recharge the Refrigerant

◆ Refill the air-conditioner with refrigerant when the refrigerant has leaked during the installing or using.

1. Turn the suction valve clockwise to close, connect the pressure gauge(low pressure side) to the service valve, and open the suction valve again.
2. Connect the tank to recharge with Refrigerant
3. Set the unit to cool operation mode.
4. Check the pressure indicated by the pressure gauge(low pressure side).
   * Standard pressure should be R410A 9~10.5kg/cm^2 in a regular operation mode.
5. Open the refrigerant tank and charge with refrigerant until the rated pressure is reached.
   * It is recommended not to pour the refrigerant in too quickly, but gradually while operating a pressure valve.
6. Stop operation of the air conditioner.
7. Close the suction valve, disconnect the pressure gauge, and open the suction valve again.
8. Close the cap of each valve.



7-2. Refrigerant Adjustment (Supplement)

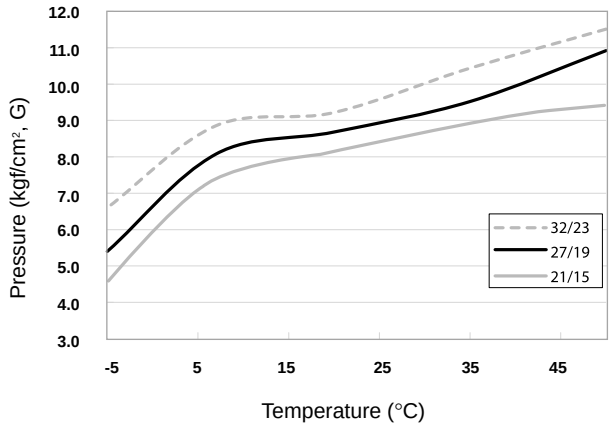
◆ Adding Refrigerant

Refrigerant must be added if the piping measures more than 7.5 meters in length. The quantity of additional refrigerant is variable according to the installation situation. Thus, make sure the outdoor unit situation before adding refrigerant.
This operation can only be performed by a qualified refrigeration specialist.

MODEL	MIN. EXTENTION LENGTH (m)	MAX. EXTENTION LENGTH (total, m)	MAX. EXTENTION LENGTH (elevation, m)	CHARGELESS (m)	ADDITIONAL REFRIGERANT (g/m)
UH026EAV	1	20	10	15	15
UH035EAV	1	20	10	15	15
UH052EAV	1	30	15	7.5	20
UH060EAV	1	30	15	7.5	15
UH070EAV	1	30	15	7.5	10
UH105GAV	1	75	30	7.5	40
UH140GAV	1	75	30	7.5	40

8. Pressure Chart

Cooling mode



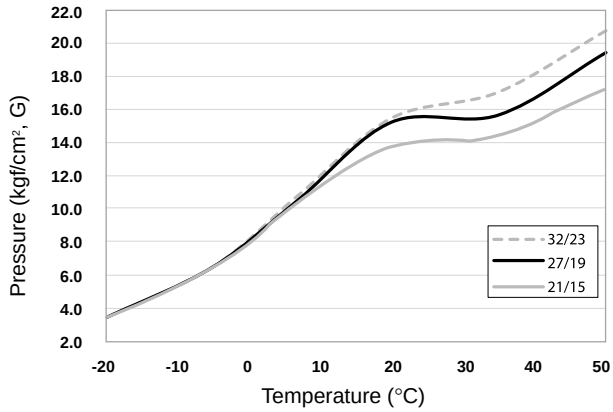
Pressure at Cooling mode

Unit : kgf/cm², G

Indoor(°C) / Outdoor(°C)	32/23	27/19	21/15
50	11.5	10.9	9.4
35	10.4	9.5	9.0
20	9.2	8.7	8.2
7	8.9	8.1	7.4
-5	6.6	5.4	4.6

✳ Indoor : DB(Dry Bulb temperature)/WB(Wet Bulb temperature)
✳ Outdoor Unit : DB(Dry Bulb temperature)

Waiting mode



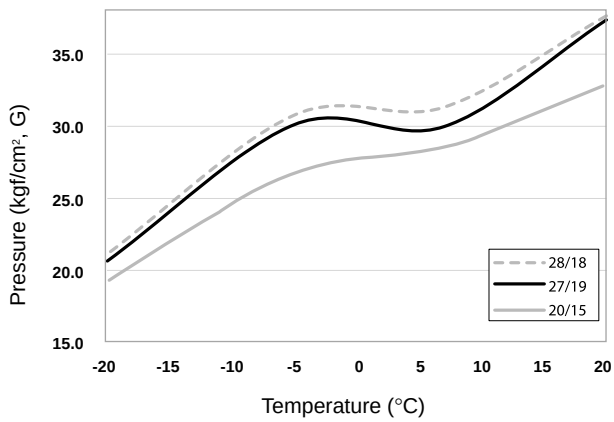
Pressure at Waiting mode

Unit : kgf/cm², G

Indoor(°C) / Outdoor(°C)	32/23	27/19	21/15
50	20.8	19.4	17.3
35	17.1	15.7	14.4
20	15.5	15.2	13.9
7	10.8	10.6	10.4
-5	6.5	6.5	6.4
-20	3.4	3.4	3.4

✳ Indoor : DB(Dry Bulb temperature)/WB(Wet Bulb temperature)
✳ Outdoor Unit : DB(Dry Bulb temperature)

Heating mode



Pressure at Heating mode

Unit : kgf/cm², G

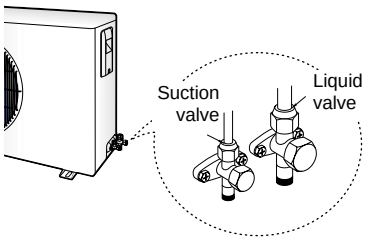
Indoor(°C) / Outdoor(°C)	28/18	27/19	20/15
20	37.7	37.4	32.9
7	31.3	30.0	28.5
-5	30.8	30.1	26.9
-20	21.1	20.7	19.2

✳ Indoor : DB(Dry Bulb temperature)/WB(Wet Bulb temperature)
✳ Outdoor Unit : DB(Dry Bulb temperature)

9. How to Do “Pump Down” Operation

◆ “Pump Down” shall be carried out when an evaporator replaced or when the unit is relocated in another area.

1. Remove the caps from the liquid valve and the suction valve.
2. Turn the suction valve clockwise to close and connect a pressure gauge(low pressure side) to the service valve, and open the suction valve again.
3. Set the unit to cool operation mode.
(Check if the compressor is operating.)
4. Turn the liquid valve clockwise to close.
5. When the pressure gauge indicates "0" turn the suction valve clockwise to close.
6. Stop operation of the air conditioner.
7. Close the cap of each valve.



Relocation of the Air Conditioner

• Refer to this procedure when the unit is relocated.

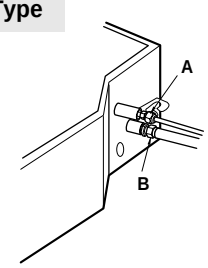
1. Carry out the pump down procedure (refer to the details of 'pump down').
2. Remove the power cord.
3. Disconnect the assembly cable from the indoor and outdoor units.
4. Remove the flare nut connecting the indoor unit and the pipe.
5. Disconnect the pipe connected to the outdoor unit.
At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to prevent foreign material from entering.
6. Make sure you do not bend the connection pipes in the middle and store together with the cables.
7. Move the indoor and outdoor units to a new location.
8. Remove the mounting plate for the indoor unit and move it to a new location.

10. How to Do “Self Leak Tests” Operation

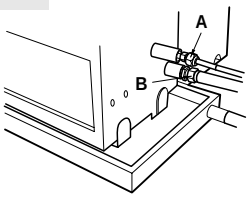
◆ Before completing the installation (insulation of the hose and piping), you must check that there are no gas leaks.

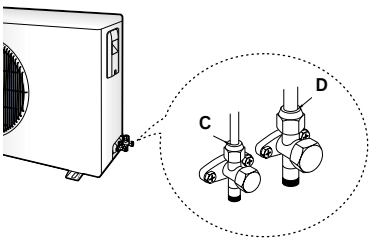
To check for gas leaks on the...	Then, using a leak detector, check the...
Indoor unit	Flare nuts at the end of sections A and B.
Outdoor unit	Valves on sections C and D.

Cassette Type



Duct Type





11. How to Do “Option Switches Setup”

11-1. Main PCB in the Indoor Unit

◆ Before setting up the option switches, always make sure that you have turned off the main power.

1) Rotary Switch (SW02)

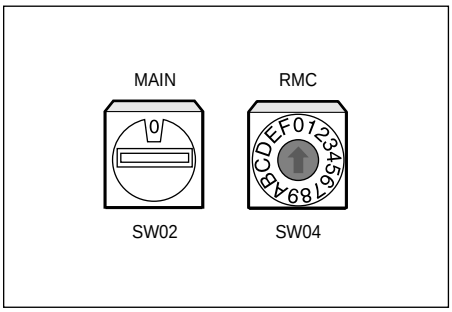
(1) You don't have to assign the MAIN address when installing one indoor unit for one outdoor unit.

(2) The MAIN address is for communication between the indoor unit and the outdoor unit. Therefore, you must set it to operate the air conditioner properly.

(3) It is required to set the RMC address if you install the centralized controller.

(4) If you install optional accessories such as the wired remote controller, centralized controller, etc. see an appropriate installation manual.

(5) If an optional accessory is not installed, you do not have to set the RMC address. However, adjust K1 and K2 switches of the SW05 DIP switch to "ON" position in this case.

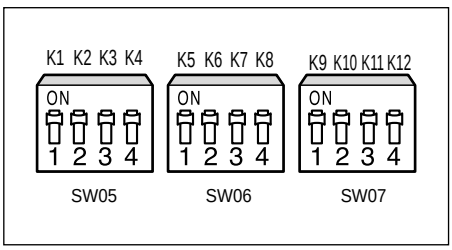


2) DIP Switch (SW05, SW06, SW07)

◆ Adjust the switch to the desired position referring to the table below.

DIP SWITCH	FUNCTION	ON	OFF	Remark
K1	Wired remote control	Not use	Use	-
K2	Centralized control	Not use	Use	-
K3	RPM up	Normal	Up	FH✳✳✳EAV&CH070EAV Only
K4	Option drain pump	Not use	Use	-
K5	Heating thermo-off	+2°C	+5°C	-
K6	Filter signal display	1,000hr	2,000hr	-
K7	Hot water coil	N/A	N/A	-
K8	Electrical heater	N/A	N/A	-
K9	Min.EEV step at heating	N/A	N/A	-
K10	Transmitter grouping	N/A	N/A	-
K11	External control	Not use	Use	-
K12	Spare	-	-	-

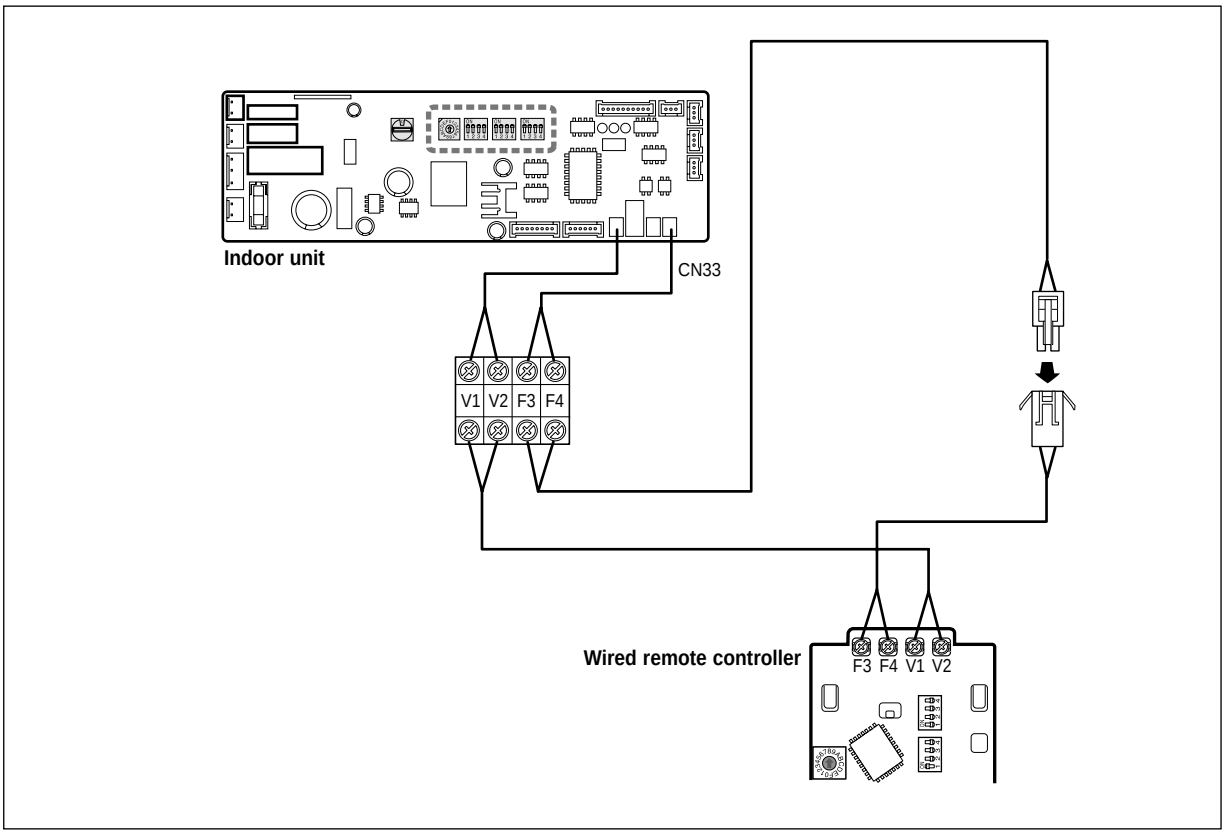
✳ N/A : Not Available



◆ **DIP Switch**
The default setting of a switch is ON.

11-2. Installing the Wired Remote Controller

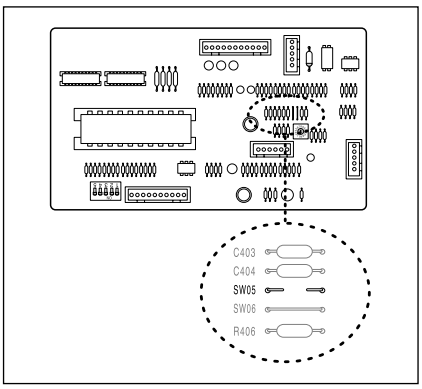
1) Connection Diagram



2) Jumper Wire (SW05)

◆ You can adjust the setting temperature for heating.
Cut off the SW05, depending on the situation.

OPTION ITEM	SITUATION OF THE SWITCH	NOTE
Setting temperature +2°C	Short	Preset Position
Setting temperature +5°C	Open	-



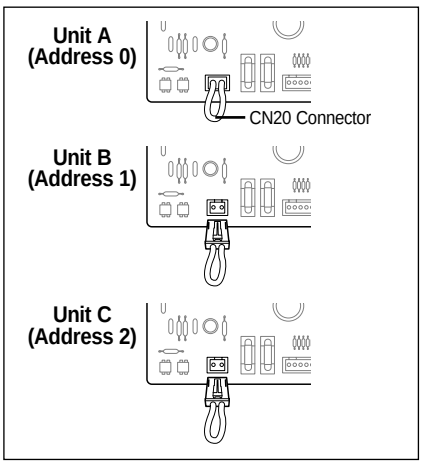
11. How to Do “Option Switches Setup”

11-3. Sub PCB in the Indoor Unit

1) CN20 Connector

◆ Remove the CN20 connector in the sub PCB, if necessary, referring to the table below. (This procedure is needed only when the user would like to control a group by using the wired remote controller.)

ADDRESS	SITUATION OF THE CN20 CONNECTOR
0	Connected
1 - F	Removed

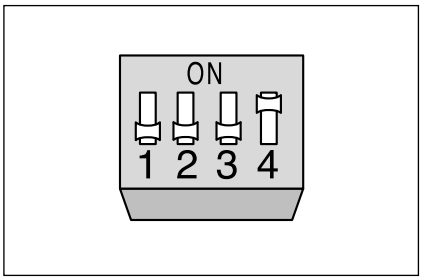


Note
◆ Up to 16 air conditioners can be controlled with one wired remote controller.
◆ If the user does not want to control a group, do not remove the CN20 Connector.

2) DIP Switch (DS01)

◆ Adjust the DIP switch No.2 and/or No.4 to the desired position referring to the table below. You must not adjust the switch 1 and 3. They should be in "OFF" position at all times.

DIP SWITCH	OPTION ITEM	SWITCH POSITION	
		ON	OFF
2	Number of air conditioner(s) controlled by the wired remote controller	Group controlling	One indoor unit controlling
4	Using wireless remote controller	Can be used	Cannot be used

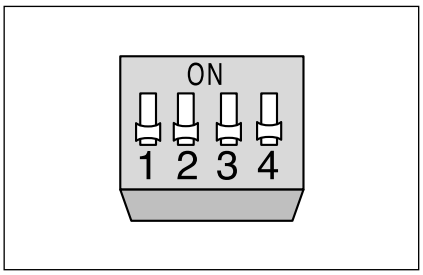


11-4. Centralized Controller

1) DIP Switch (DS01)

◆ Adjust the DIP switch to the desired position referring to the table below.

DIP SWITCH	1	2	3	4	MEANING
Switch Position	OFF	OFF	OFF	OFF	The air conditioner is operated by the controller adjusted last among the wired remote controller, wireless remote controller and centralized controller.
	OFF	OFF	OFF	ON	A user can use wired/wireless remote controller when the centralized controller is switched on. And he/she cannot use the remote controller(s) when the centralized controller is switched off.
	OFF	OFF	ON	OFF	The air conditioner(s) can be controlled by only the centralized controller. The user cannot use the wired/wireless remote controller in this case.



Note You cannot install the centralized controller when the wired remote controller for a group has already been installed.

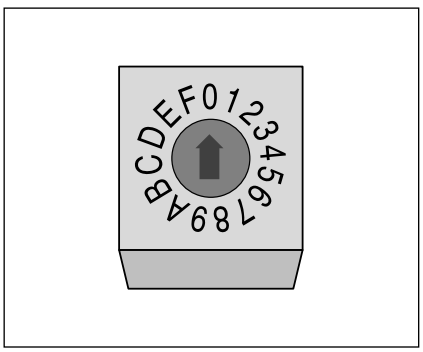
11-5. Transmitter

1) Rotary Digital Switch (DS01)

A user can turn on/off up to sixteen air conditioners by using the centralized controller. To use the controller, you must assign addresses to the air conditioners. For further details on connecting air conditioners.
If the user would like to controller only one air conditioner, make sure that the arrow is at "0" position.

◆ Turn the arrow to the desired position referring to the table below.

DIP SWITCH	NUMBER OF INDOOR UNIT(S)	DIP SWITCH	NUMBER OF INDOOR UNIT(S)
0	One	8	Nine
1	Two	9	Ten
2	Three	A	Eleven
3	Four	B	Twelve
4	Five	C	Thirteen
5	Six	D	Fourteen
6	Seven	E	Fifteen
7	Eight	F	Sixteen



11-6. Original Position of Option Switches

◆ The option switches are preset by the manufacturer. Refer to the table below, if necessary.

OPTION PLACE	COMPONENT No.	STATE
Main PCB in the indoor unit	Rotary Digital Switch (SW01)	0
	DIP Switch (SW02)	ON
	Jumper Wire (SW05)	SHORT
Sub PCB in the indoor unit	CN20 Connector	Connected
Wired Remote Controller	DIP Switch (DS01)	ALL OFF
Centralized Controller	DIP Switch (DS01)	ALL OFF
Transmitter	Rotary Digital Switch (DS01)	0

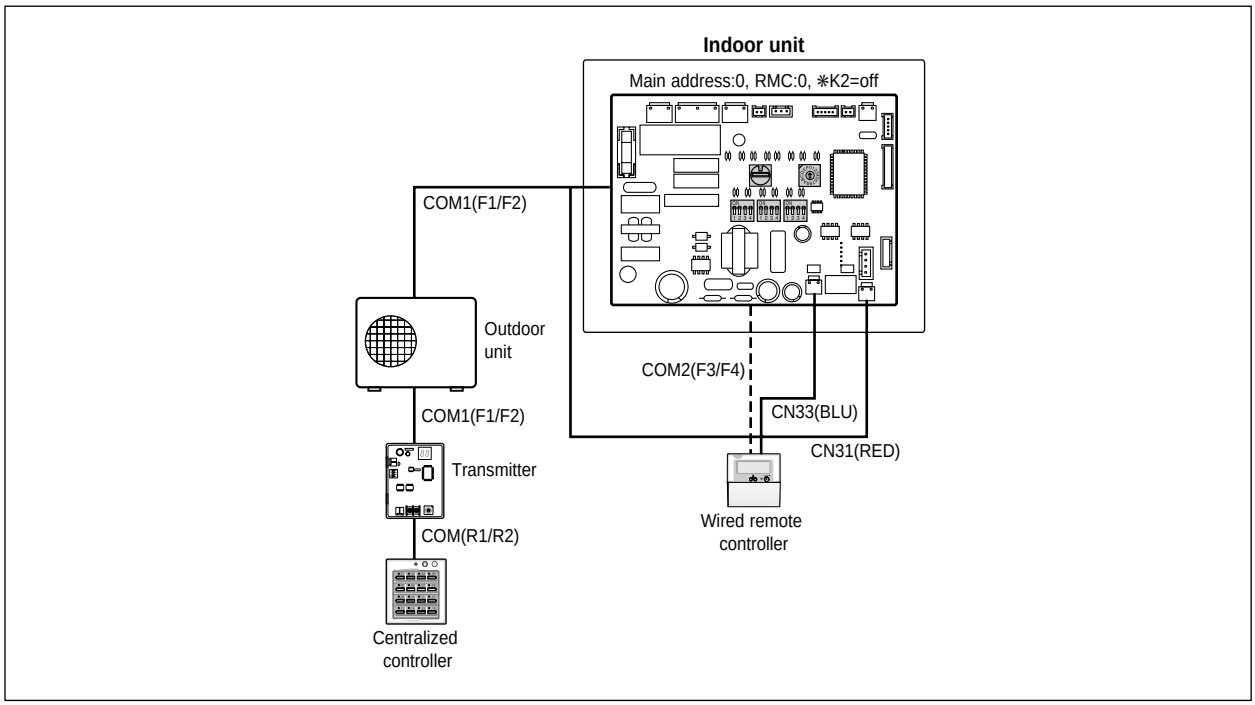
Note ◆ Before setting up the options, always make sure that you have switched off the main power.
◆ After adjusting the options, you should supply the power. Otherwise, the options will not be applied.

11. How to Do “Option Switches Setup”

11-7. Installation Examples of Wired Remote Controller

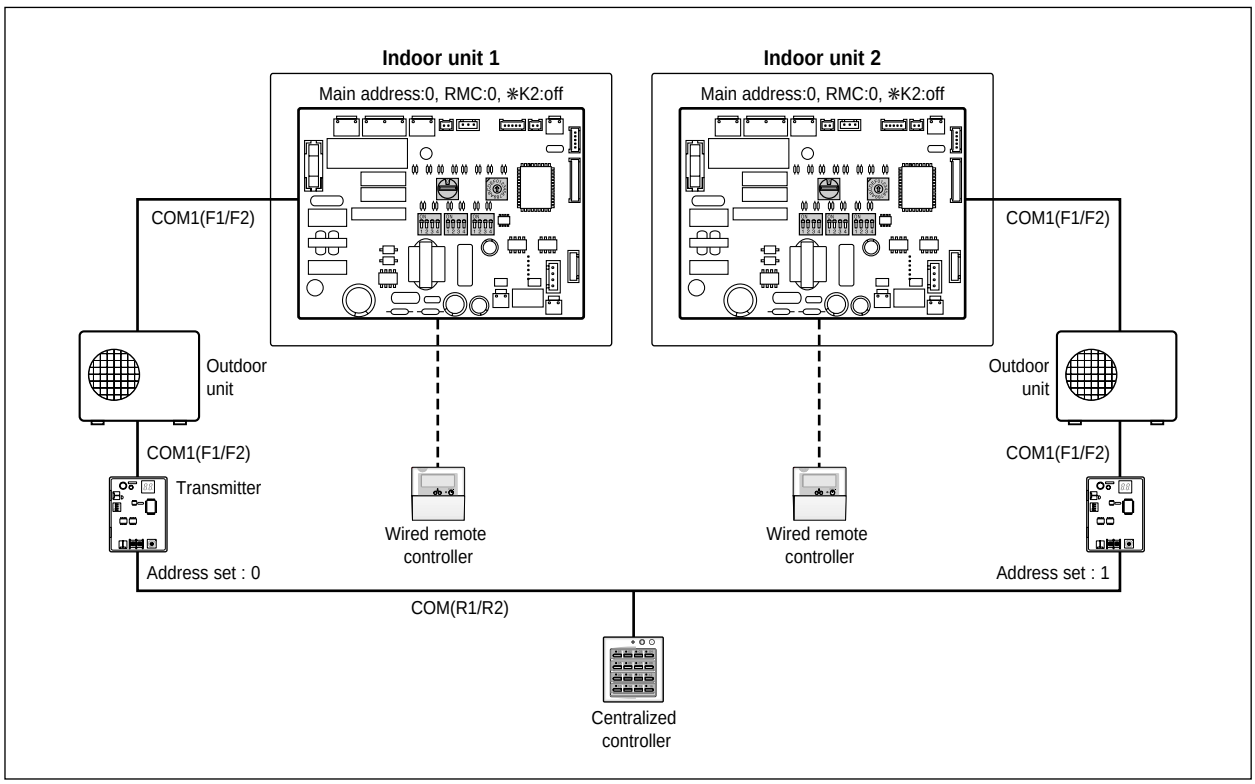
1) Individual Control

◆ Controlling 1 indoor unit with 1 wired remote controller

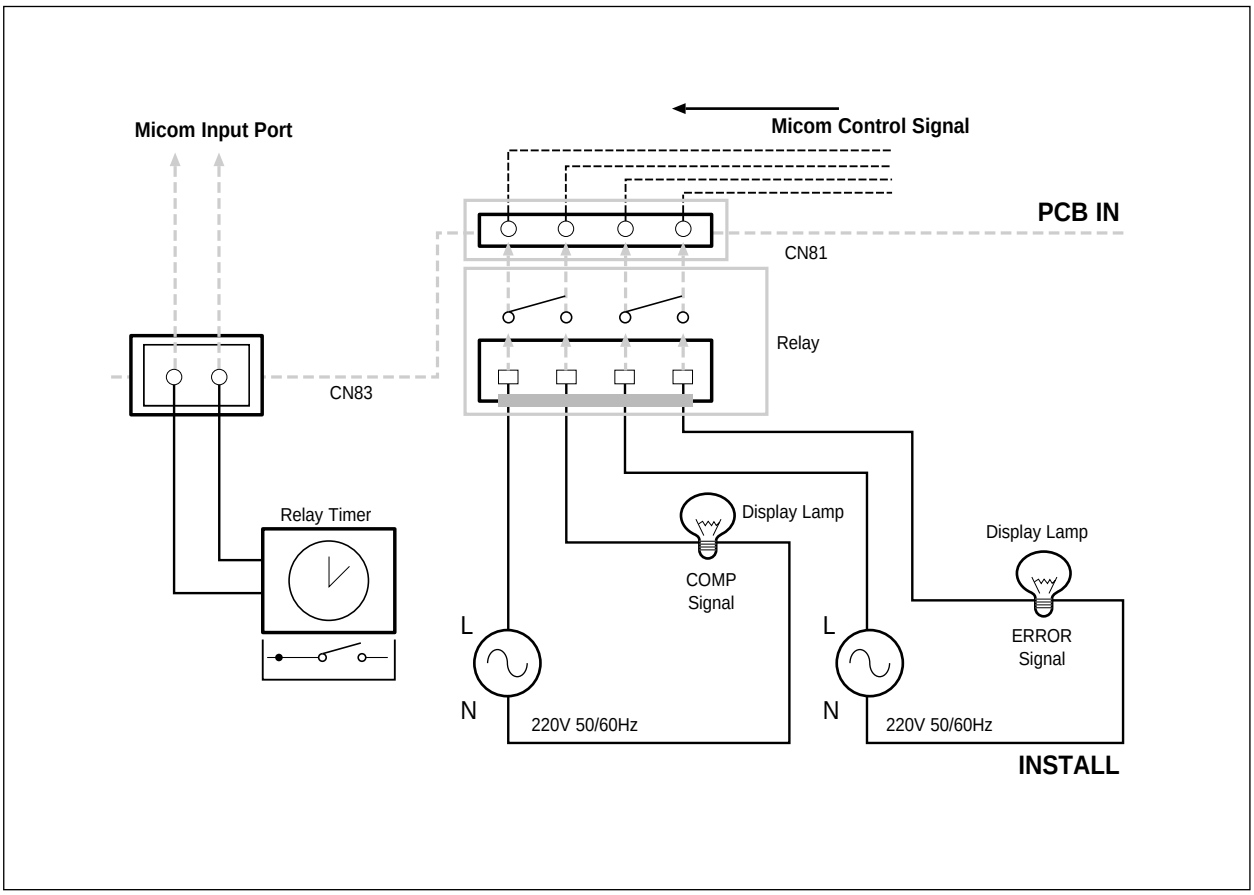


2) Group Control

◆ Controlling 2 indoor units with 1 wired remote controller



11-8. System Diagram of External Control



Technical Data Book

04 Operation Logic

1. How the System Works

1-1. Control Outline

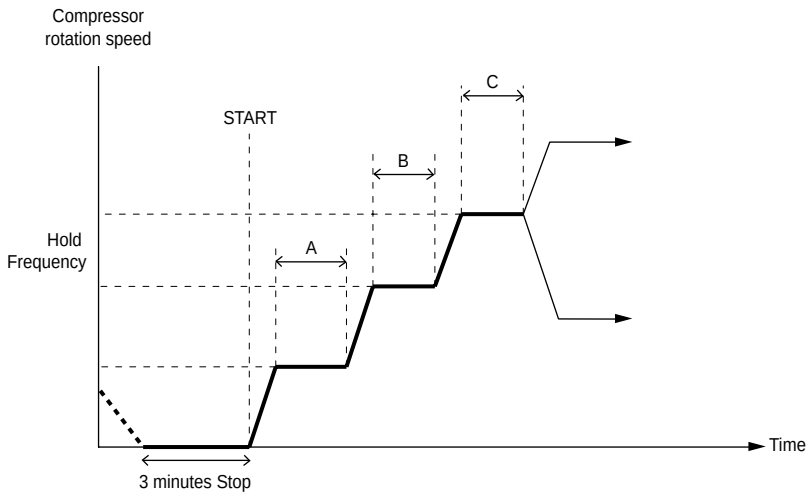
COMPONENT	OUTPUT	CONTROL VARIABLE	INPUT VARIABLE	CONTROL METHOD
BLDC Compressor	Rotation Speed	Room Temperature	Setting Temperature Room Temperature	Fuzzy control
EEV (Electronic expansion valve)	Open step (0-480)	Discharge Temperature	Compressor speed, Room temperature, Outdoor temperature	PD control
Outdoor Fan Motor	BLDC type : Rotation Speed A/C type : TAP+ON/OFF duty	Fan Speed (Non-Feedback)	Compressor speed, Outdoor temperature	Smart control
4way valve	ON /OFF	Cooling/Heating	Operation mode	

1-2. Start Sequence

◆ Compressor starts at thermo-ON condition but start will be suspended in next cases.
① 3 minutes from Power On reset.
② 3 minutes from last compressor stop

- After starting, compressor rotation speed always goes up to the hold frequency and stays because of compressor lubricating.

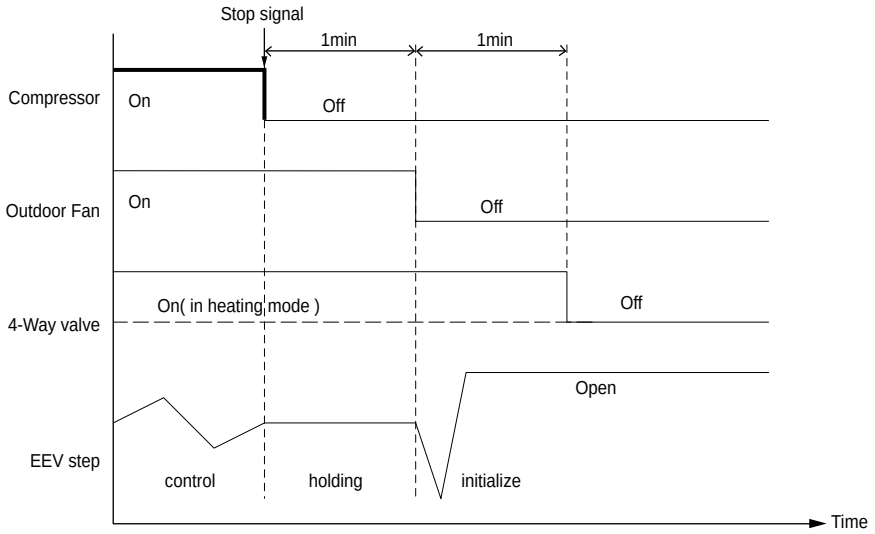
- After that rotation speed varies according to room temperature and other condition.



OUTDOOR UNIT	COMPRESSOR HOLD REGION	HOLD FREQUENCY	HOLDING TIME
2.6/3.5kW	A	26Hz	30sec
	B	52Hz	60sec
	C	88Hz	30sec
5.2/6.0/7.0kW	A	26Hz	0sec
	B	49Hz	60sec
	C	88Hz	0sec
10.5/14.0kW	A	30Hz	30sec
	B	52Hz	60sec
	C	63Hz	60sec

1-3. Stop Sequence

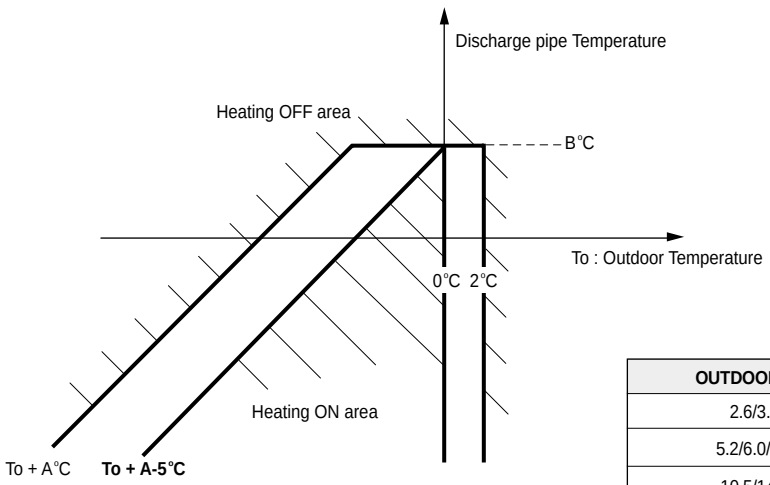
◆ After compressor stopping, Outdoor Fan, EEV step and 4 way valve operation sequence is as the chart below.



1-4. Compressor Heating

◆ In low compressor temperature and standby condition, the controller heats the compressor by passing the current through the compressor motor with no rotation.
This control is for preventing refrigerant from too much solving into compressor oil in low temperature.
Turn-on and turn-off heating temperature is as the chart below.

- Turn on will be suspended for 10 minutes after compressor stop.
  1 hour pause after 3hours continuous heating for controller protection.



OUTDOOR UNIT	A	B
2.6/3.5kW	15℃	10℃
5.2/6.0/7.0kW	10℃	5℃
10.5/14.0kW	15℃	10℃

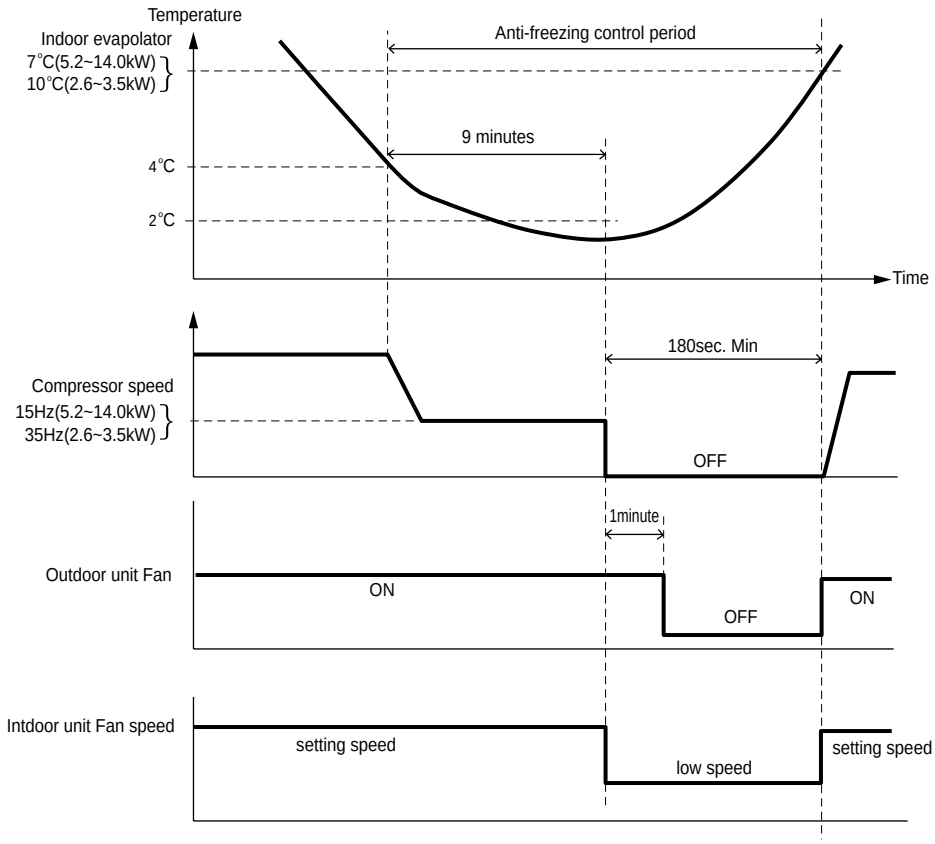
2-1. Anti-Freezing Control (Cooling Mode)

◆ This control is for preventing frost on the indoor evaporator.
Because frost on the indoor evaporator grows and disturbs air flow.
Watching indoor evaporator temperature in cooling and dehumidifying mode, and controlling compressor speed and both indoor unit and outdoor unit fan.

When indoor evaporator temperature is going down through 4˚C, the controller makes compressor speed down to 15Hz or 35Hz (depending on the model).
If indoor evaporator temperature becomes over 7˚C or 10˚C(depending on the models), the controller quits this control to normal mode.

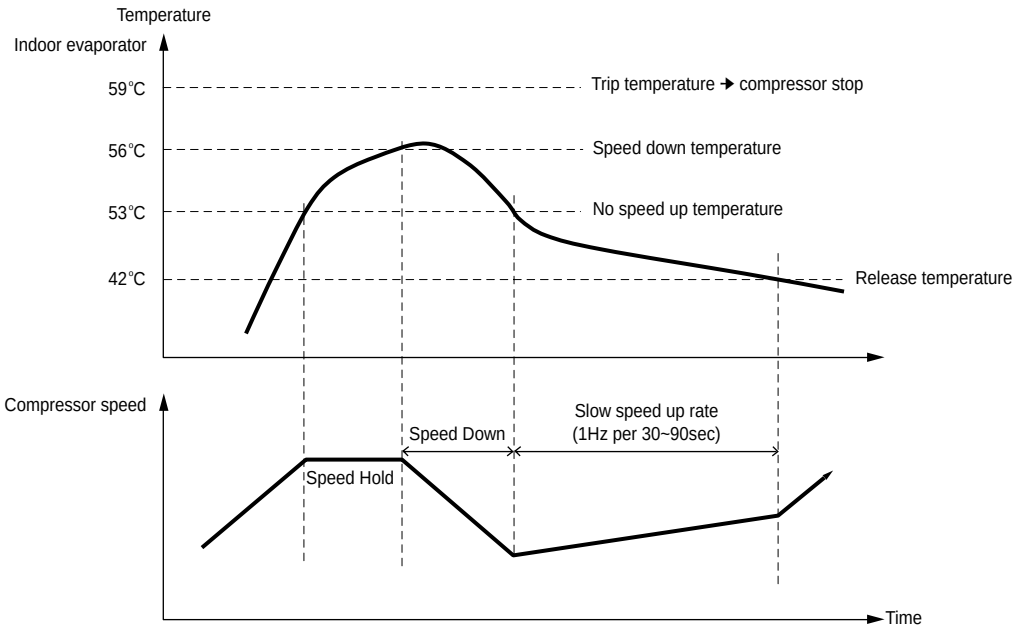
But indoor evaporator temperature does not go up and meets both of next 2 conditions, the controller stops compressor running and waiting for the temperature recovery.
① keeping under 4˚C for 9 minutes.
② becoming under 2˚C.

The sequence is as blow.



2-2. High Load Prevention Control (Heating Mode)

◆ This control is for protecting cycle overload condition by controlling indoor evaporator temperature with compressor speed change (speed down and speed up rate limit).
In many cases this protecting condition and current release control work together.



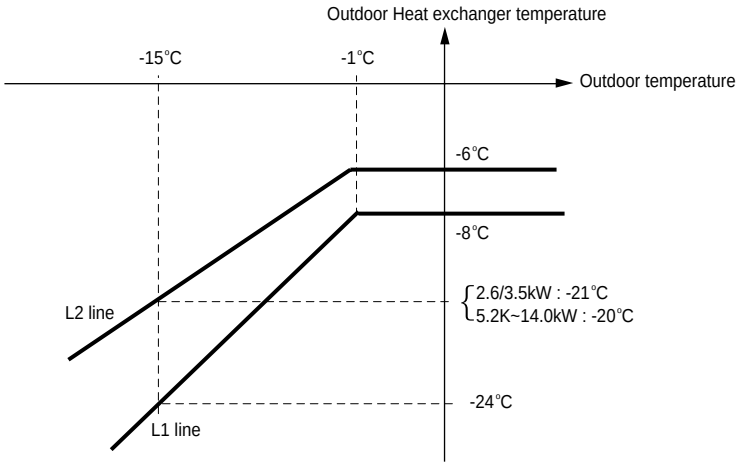
2-3. Defrost Control (Heating Mode)

◆ This control is detecting frost on the outdoor heat exchanger and removing it. During defrost period, cycle is changed to cooling cycle.

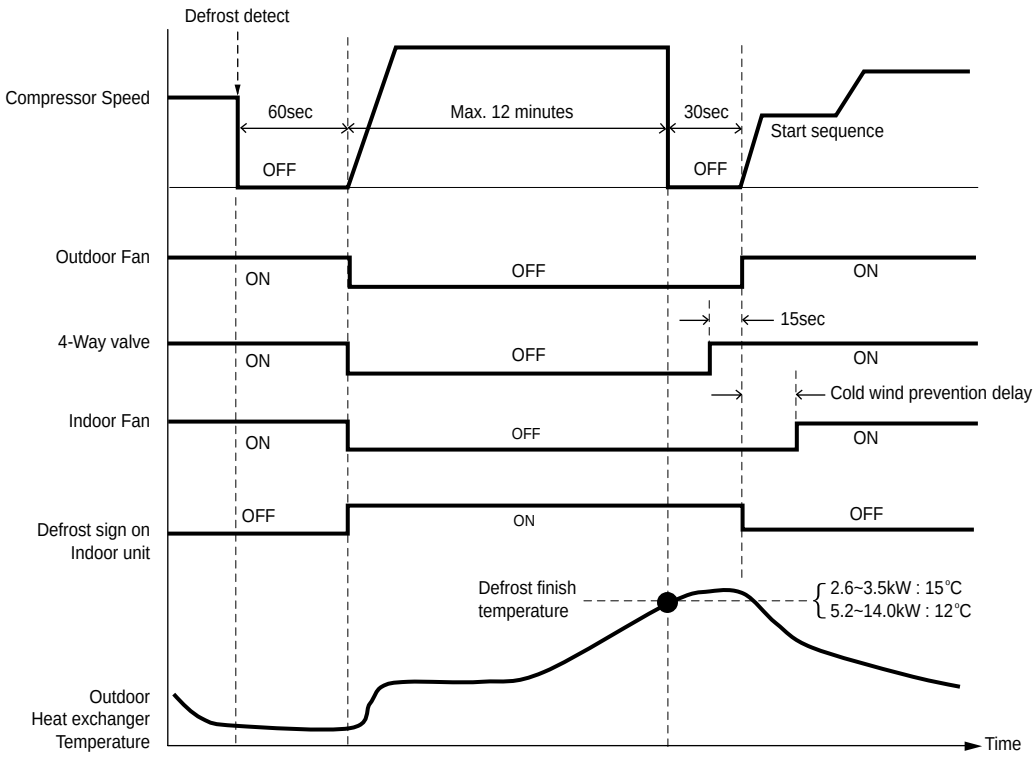
1) Defrost Start Condition

A : Compressor running and Outdoor Heat exchanger temperature < L2 line for 120 minutes continuously.
B : Compressor non-stop running for 35 minutes and Outdoor Heat exchanger temperature < L1 line for 3 minutes continuously.

Defrost start condition is condition A or condition B.

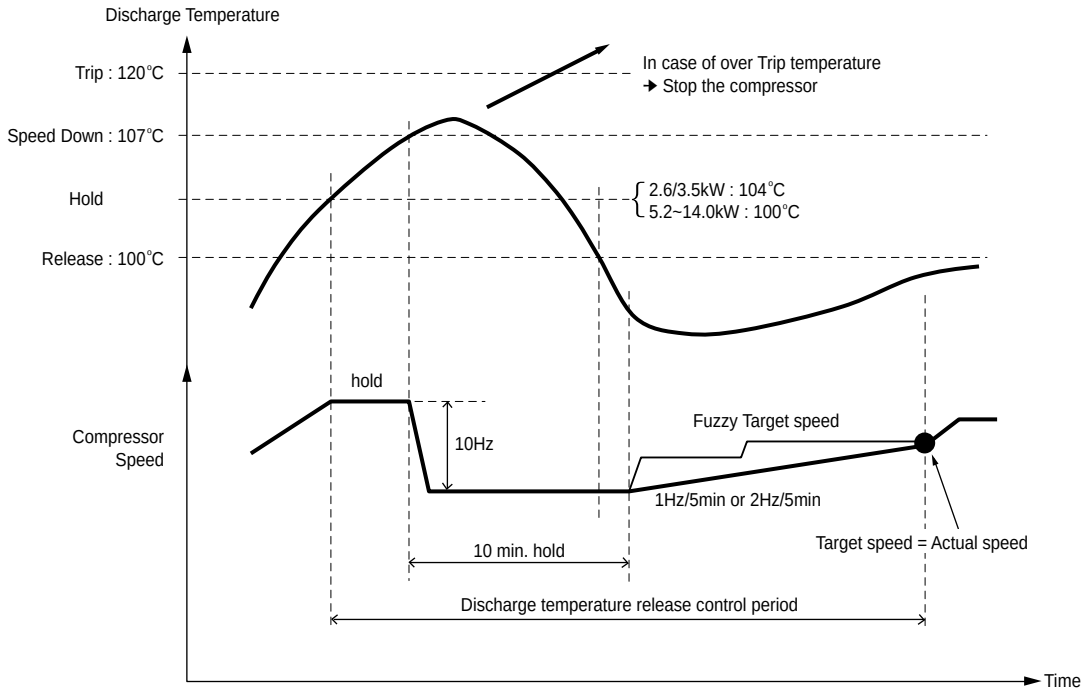


2) Defrost Sequence



2-4. Discharge Temperature Release Control

◆ This control is for protecting compressor overload condition. Before working this protection, Current release control or High load prevention control works usually. So this control seldom works except in case of closing service valve.



◆ This control has 2 stage. One is Speed down or speed hold, and another is Speed up rate limitation.

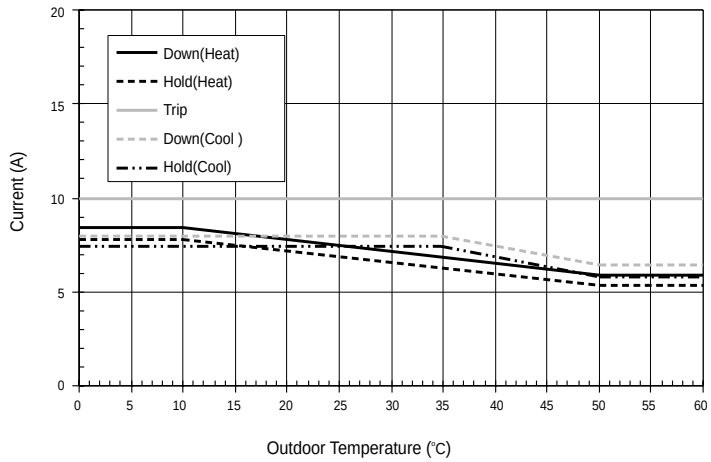
- Speed Down
  Once temperature goes over Speed Down temperature, the controller makes compressor speed down by 10Hz and waits for 10 minutes. After that judging again if doing 10Hz down or not.

- Speed Up Rate Limitation
  After temperature going down under hold temperature, compressor speed up rate is limited to slow rate.
  This limitation continues until the actual speed reaches to the target speed calculated by fuzzy control.

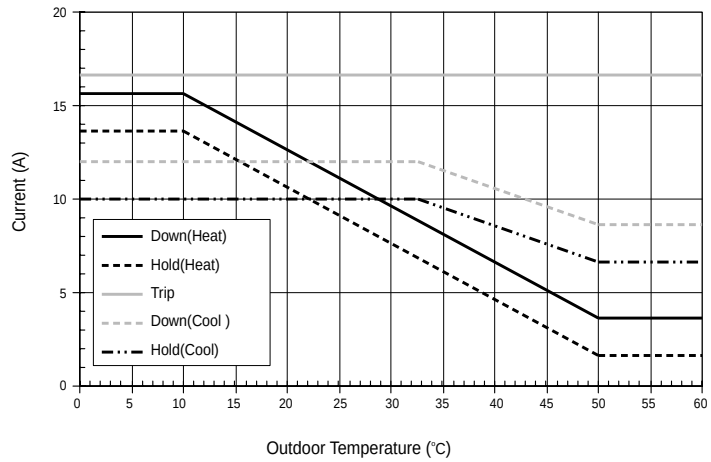
2-5. Current Release Control

◆ This control is for protecting controller break down by over current.
Control current depends on the outdoor temperature and operation mode because of heat up capacity of power semiconductors in the controller.

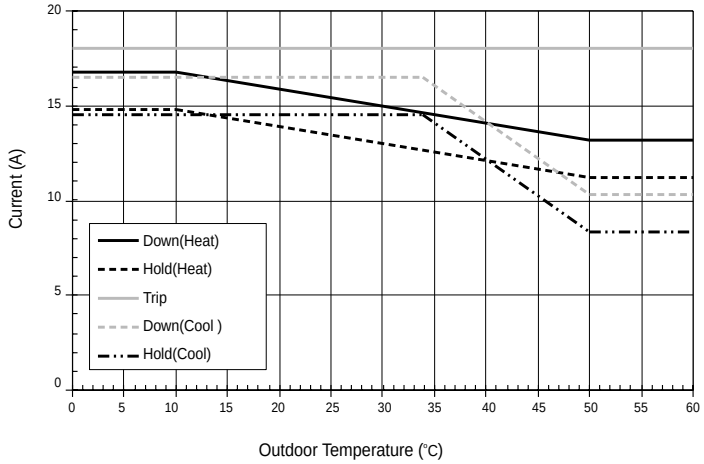
1) 2.6/3.5kW



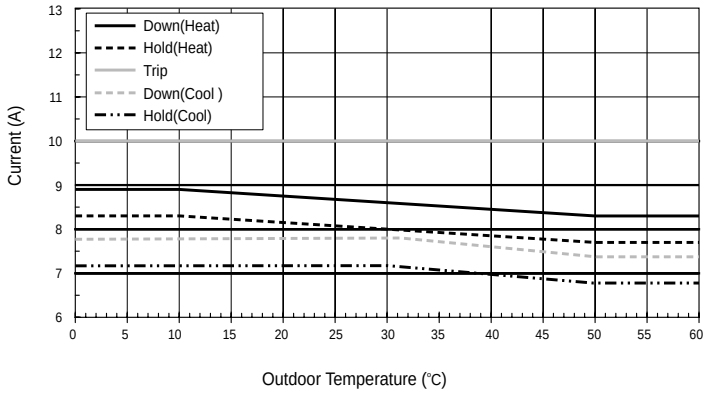
2) 5.2kW



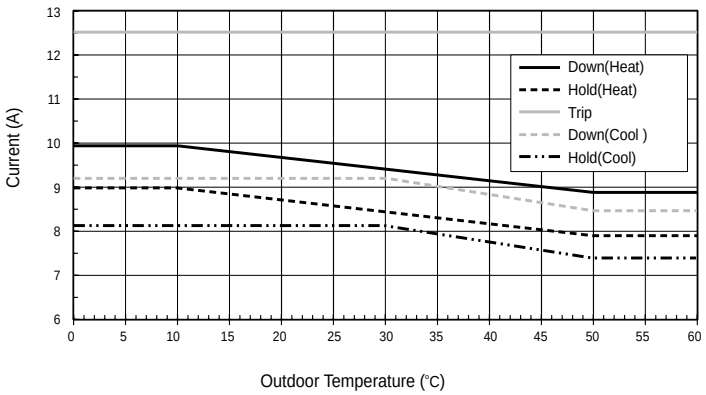
3) 6.0/7.0kW



4) 10.5kW



5) 14.0kW



◆ Control Current Level

- Trip
  The current level over which the compressor stops immediately .

- Down
  The current level over which compressor speed starts down.
  Compressor speed down stops at the hold current level or under.

- Hold
  The current level over which compressor speed holds but down is available.
  Under the hold level, compressor speed up is available to the maximum.

2-6. Protection Control by Outdoor Temperature

◆ The system does not operate in low outdoor temperature in cooling mode and in high outdoor temperature in heating mode for over load cycle condition.

■ **Outdoor temperature which the system can operate**

OUTDOOR UNIT	COOLING MODE	HEATING MODE
2.6~7.0 kW	-5~46˚C	-10~24˚C
10.5 kW~	-15~50˚C	-20~24˚C

- Temperature is at the outdoor temperature sensor.

◆ Temperature judgement is done at the starting compressor.
Once starting, system does not care about outdoor temperature operation range until next starting.

2-7. Inverter Protection Control

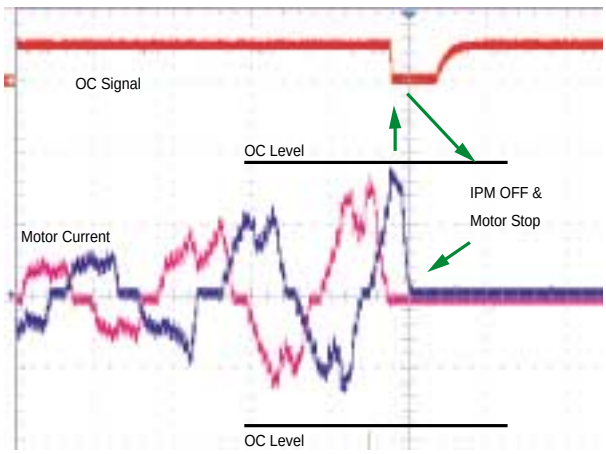
◆ Inverter controller has a hardware and software protection logic for which protects compressor and controller itself.
Typical protection is as follows.

1) IPM Over Current Protection/OC Error/DC Peak Error (E464)

(1) Control
Compressor motor peak current exceeded restriction and made motor drive stop immediately. This is the hardware protection.

(2) Protection purpose
Compressor rotor magnet demagnetizing
IPM(power semiconductor) breakdown

(3) Cause
There are many reasons.
Indoor air flow blocked in heating mode by blade closing, covering air inlet with curtain, etc.
Compressor motor or wiring short circuit, Off the compressor wire connector during rotation, Compressor lock, Compressor magnet demagnetizing, Compressor rotation error, High compressor load in low speed rotation, PCB short circuit, IPM breakdown, etc.



2) Compressor Overload Protection in Low Speed (E465)

(1) Control
In case of high compressor load in low speed rotation(under 1800rpm/30Hz), rotation speed is going down slowly to release the load.
But reaching at to 780rpm/13Hz and high load condition not released, the controller stops the compressor.

(2) Protection purpose
Compressor damage
IPM(semiconductor) breakdown

(3) Cause
Usually discharge pressure level is over the compressor specification.

3) Compressor Starting Error Detection (E461)

(1) Control
In case of failure to start the compressor, the controller make some retry. One start trial is up to 12 sec.
5 times failure makes 3 minutes pause and also shows error display on the outdoor unit for 1 minute.
This 5 trials calls the one block and 5 blocks failure makes Indoor unit Error display and Indoor unit stop.
It takes about 20 minutes until showing error sign on the indoor unit.

(2) Cause
Compressor wire trouble(disconnect etc.),
Compressor trouble(locking, motor wire trouble etc.),
PCB trouble(Power Driver open mode etc.)

4) Compressor Rotation Error (E467)

(1) Control
Because sensorless BLDC motor control system always detects motor rotation, the controller can detect rotation trouble and stop rotation.
Restart will be in 3 minutes but 3 times stop makes Error display on Indoor unit and Indoor unit is stopped.

(2) Protection purpose
Overcurrent trouble, Abnormal compressor vibration.

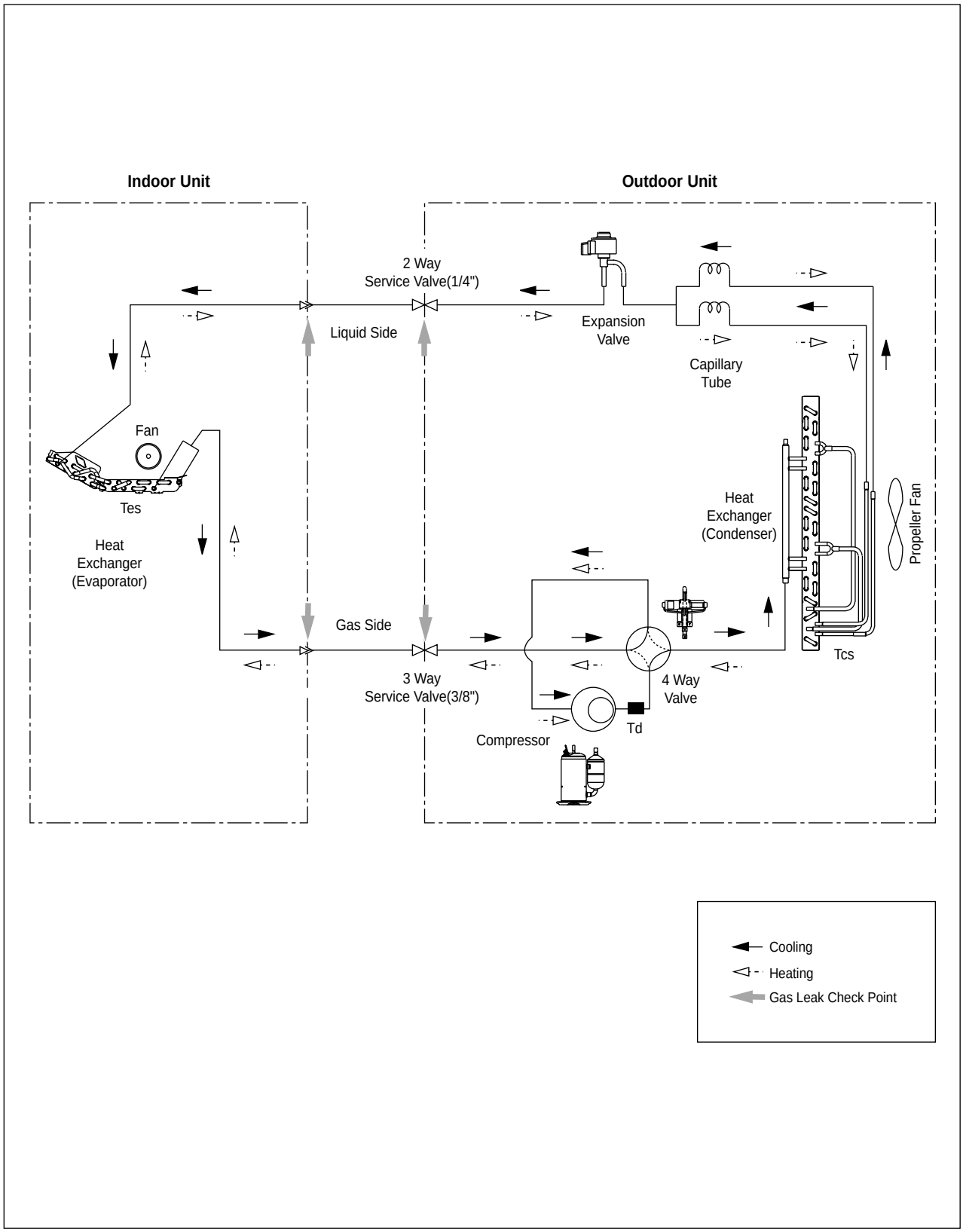
(3) Cause
Power line voltage changes quickly.
Cycle load changed quickly.
Compressor liquid back. Compressor trouble.
PCB trouble(noise etc).
Compressor motor magnet demagnetizing

Technical Data Book

05 System Diagram

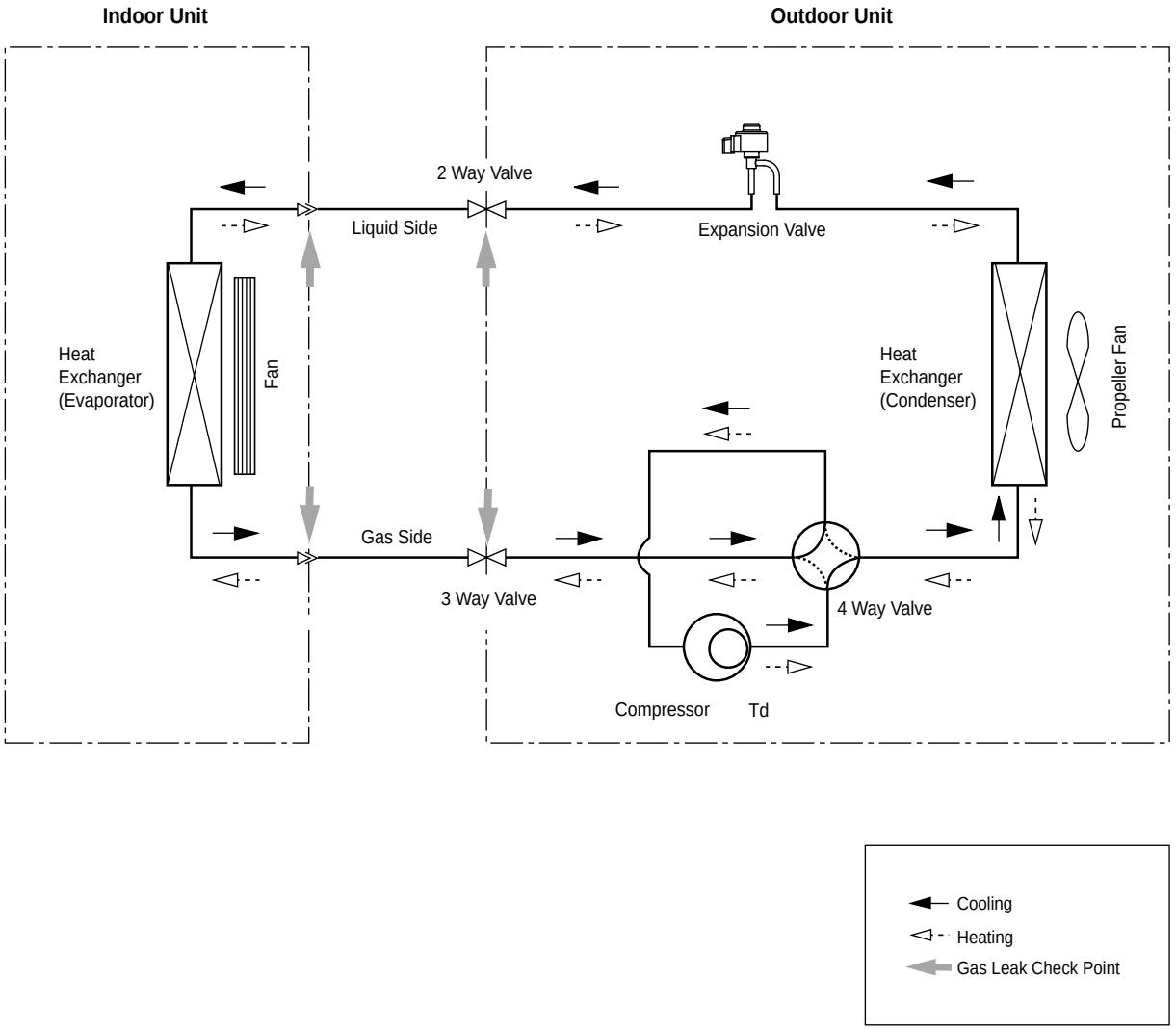
1-1. 1 way cassette

1) ✳H026EAV/✳H035EAV



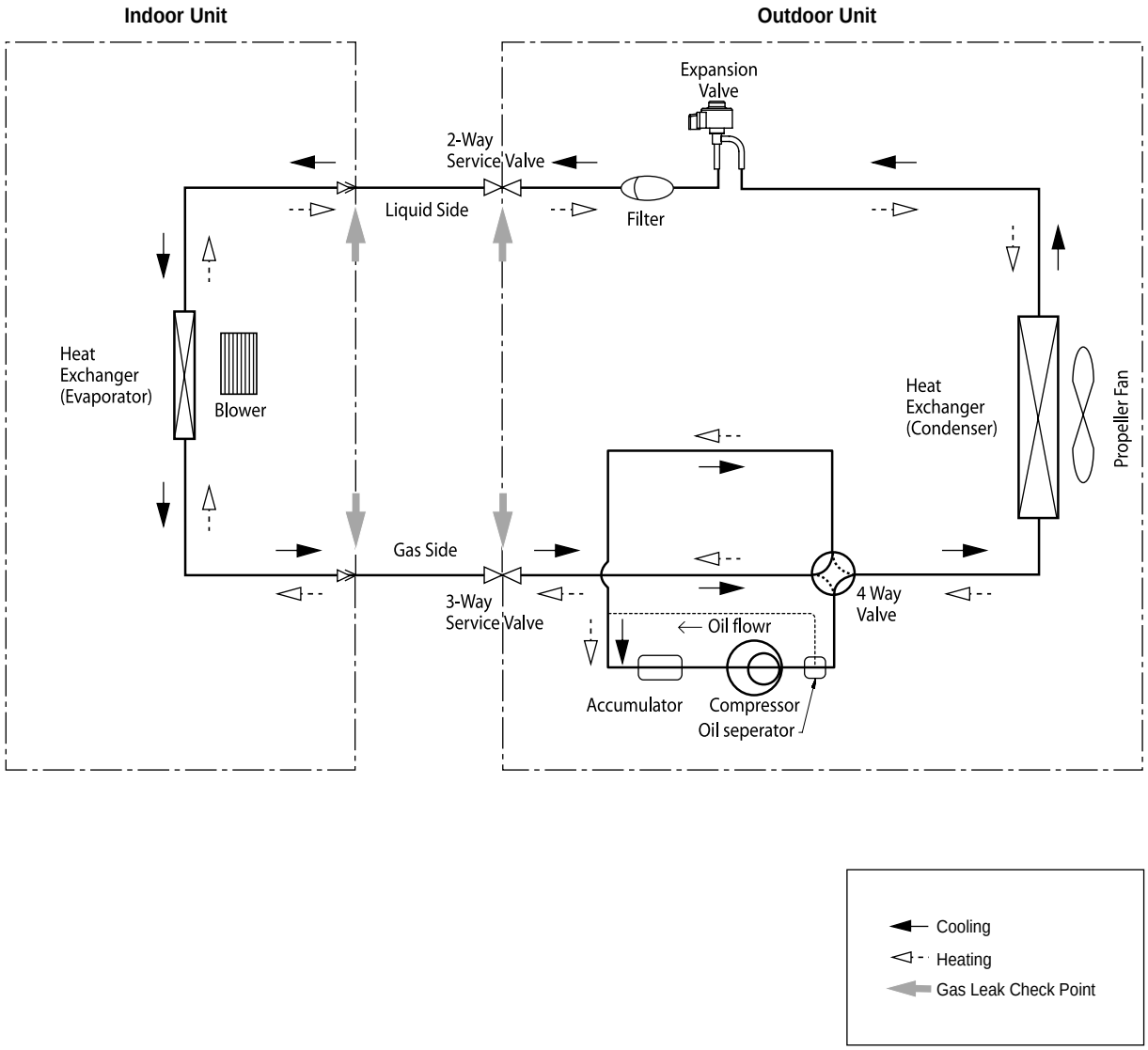
1-2. 4 way cassette/Mini 4 way cassette/Slim duct/Ceiling

2) ✳H052EAV/✳H060EAV/✳H070EAV



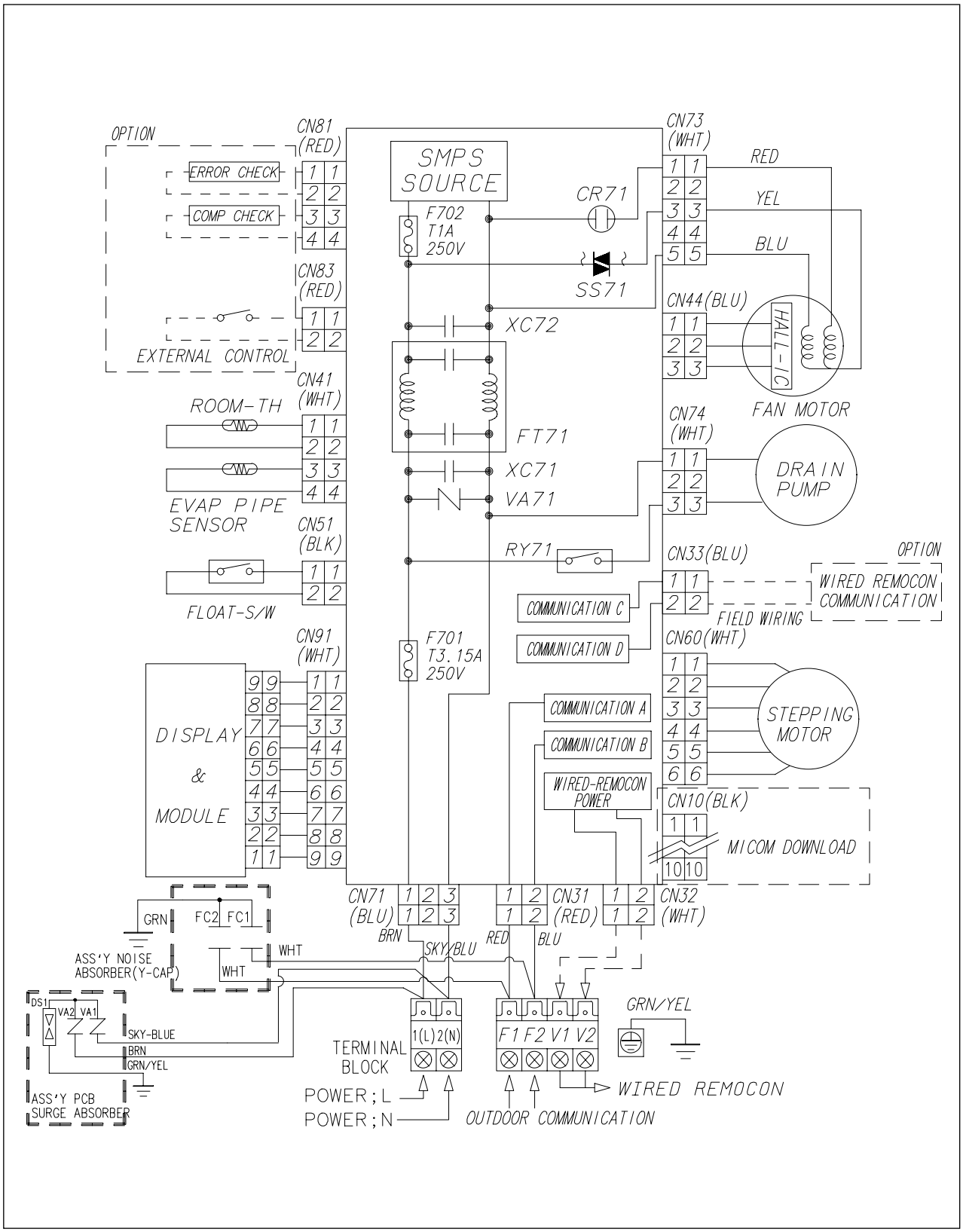
1-3. 4 way cassette/MSP duct

3) ✳H105EAV/✳H140EAV



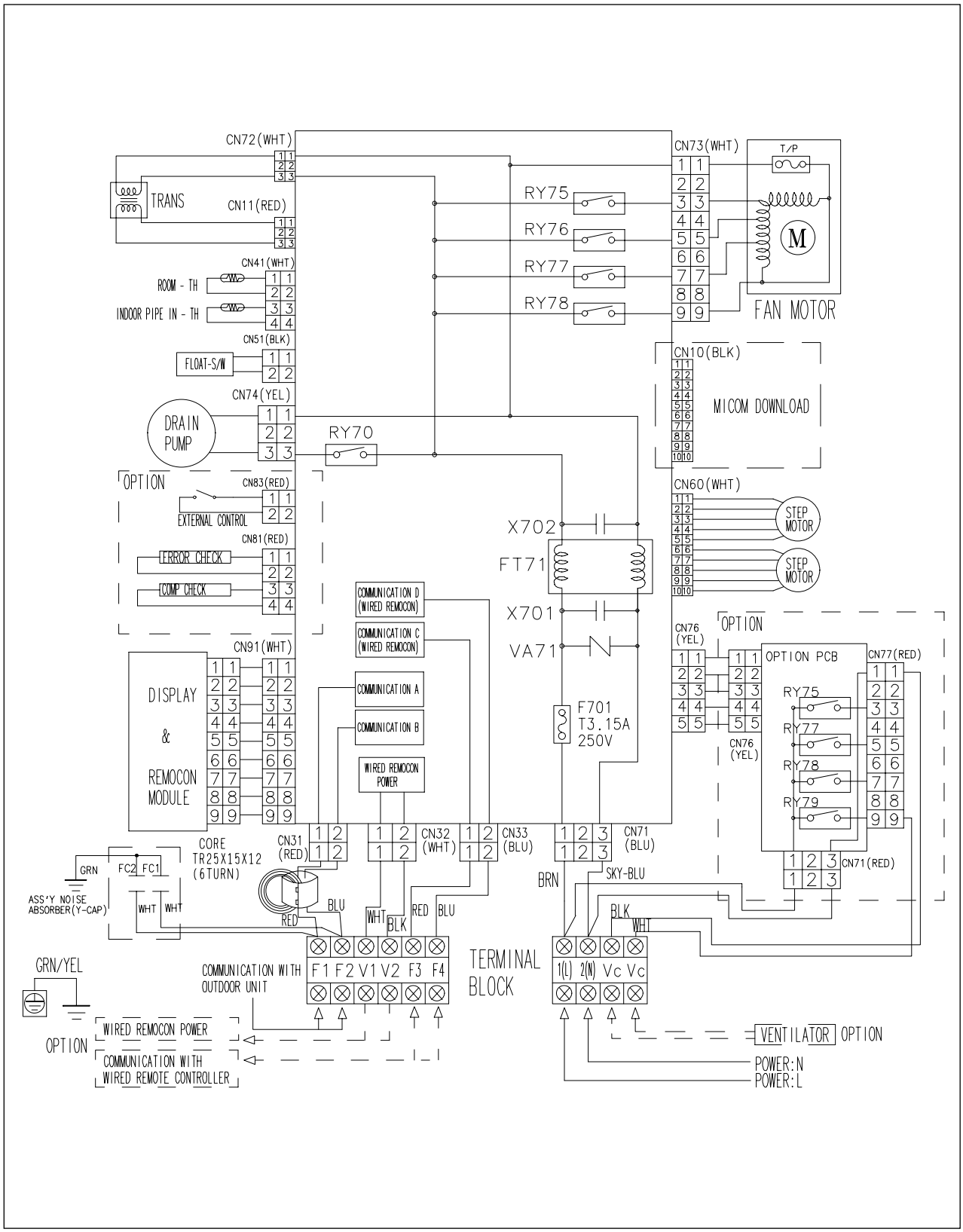
2-1. 1 way cassette

1) KH026EAV/KH035EAV

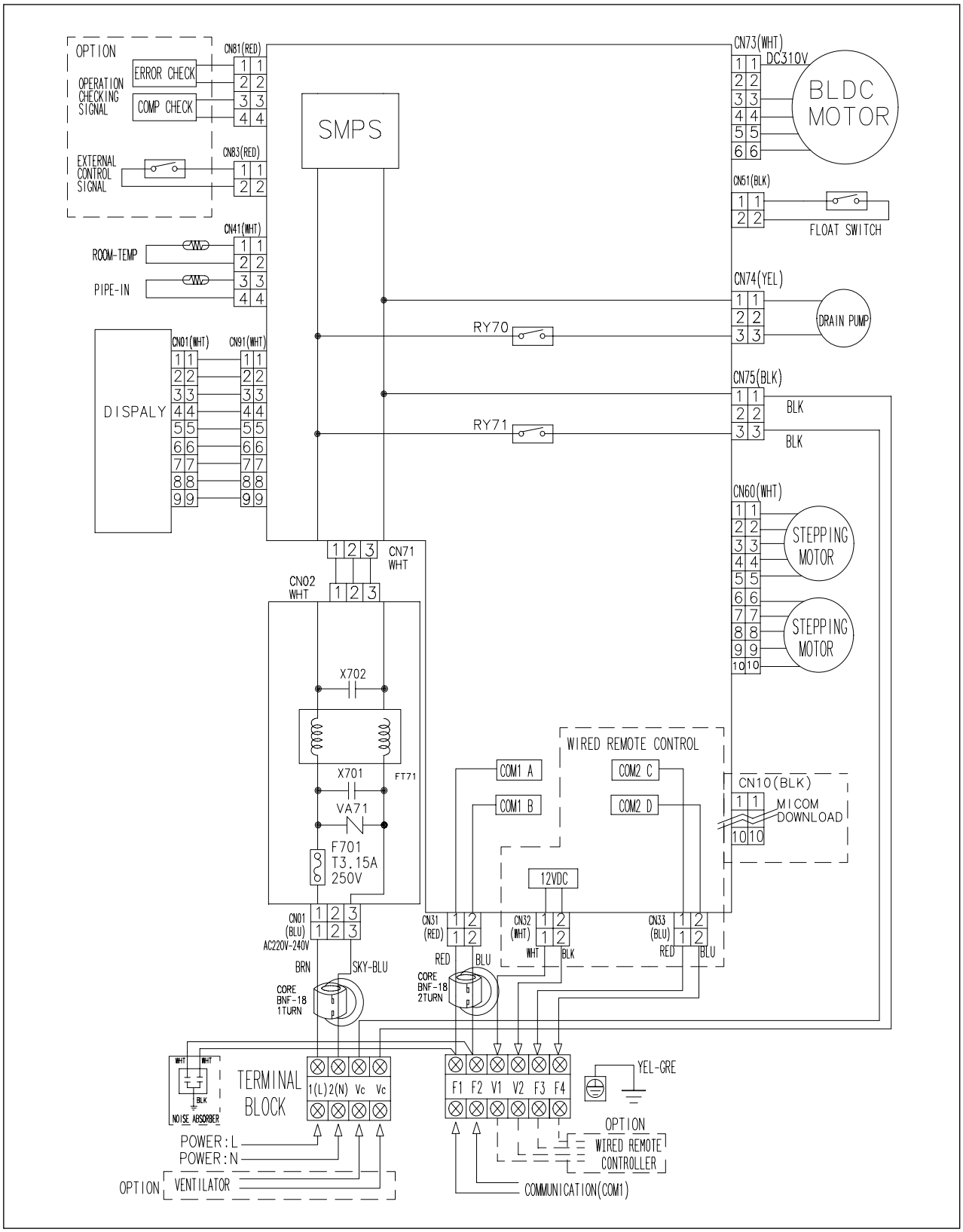


2-2. 4 way cassette

1) CH070EAV

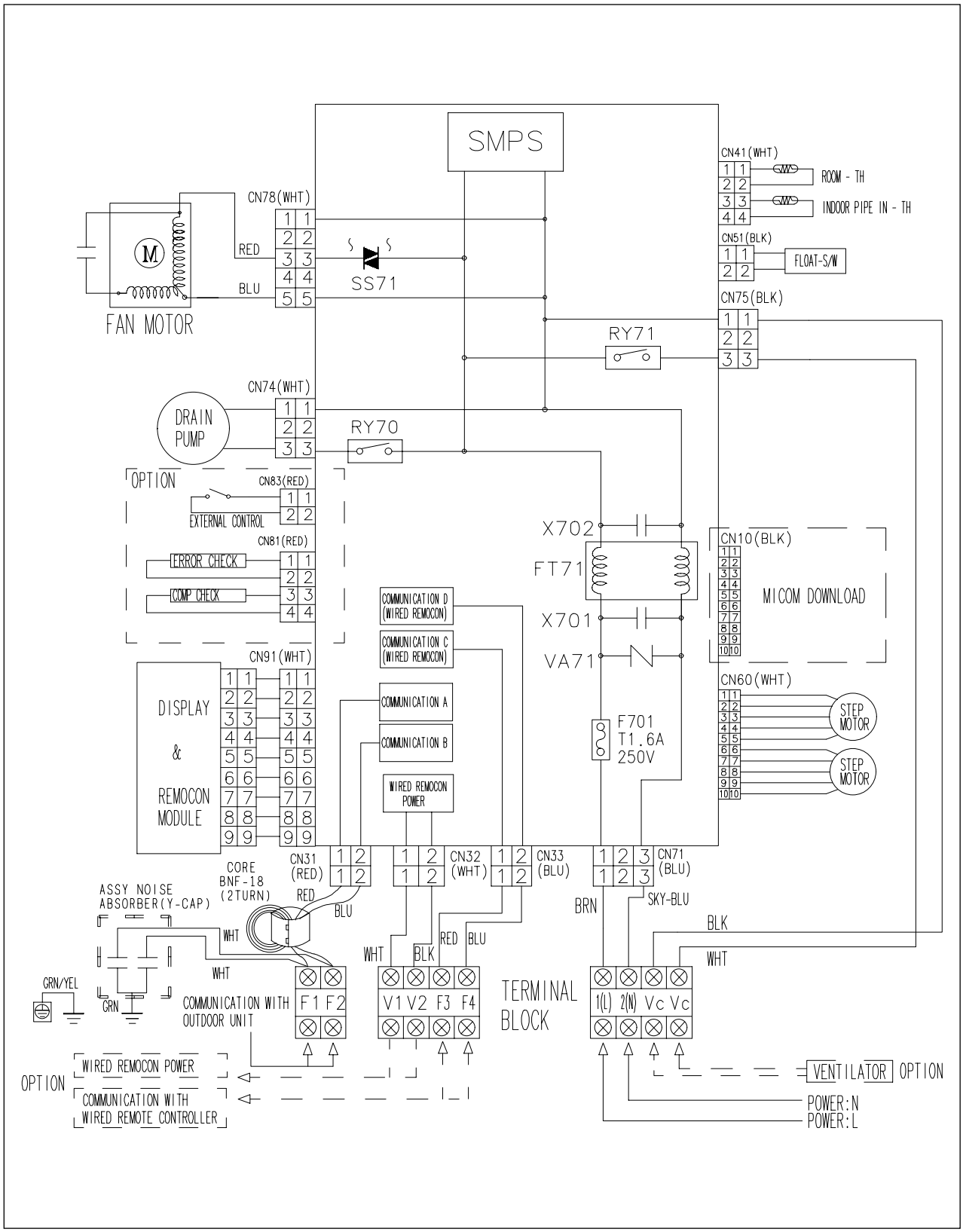


2) CH105EAV/CH140EAV



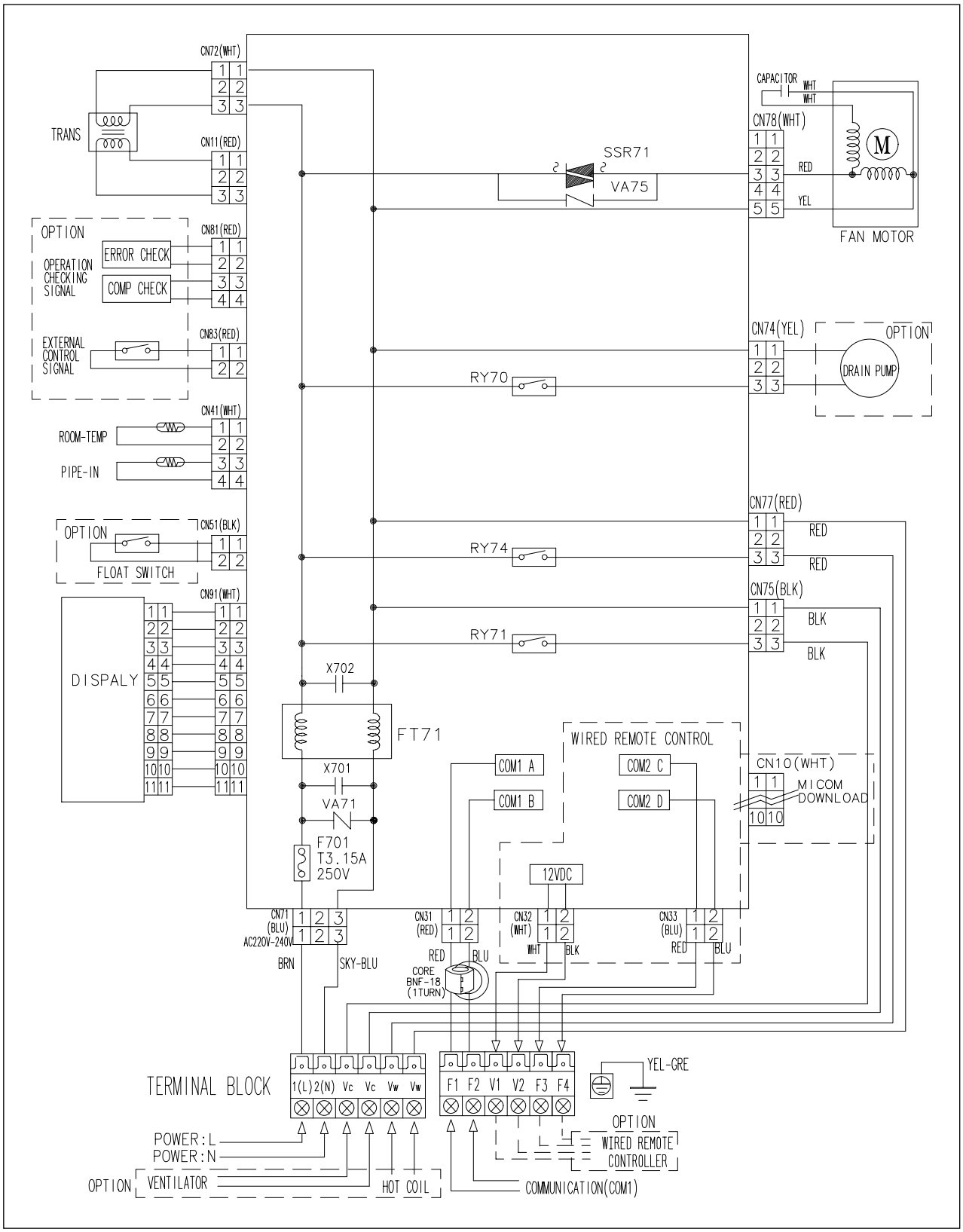
2-3. Mini 4 way cassette

1) TH026EAV/TH035EAV/TH052EAV/TH060EAV



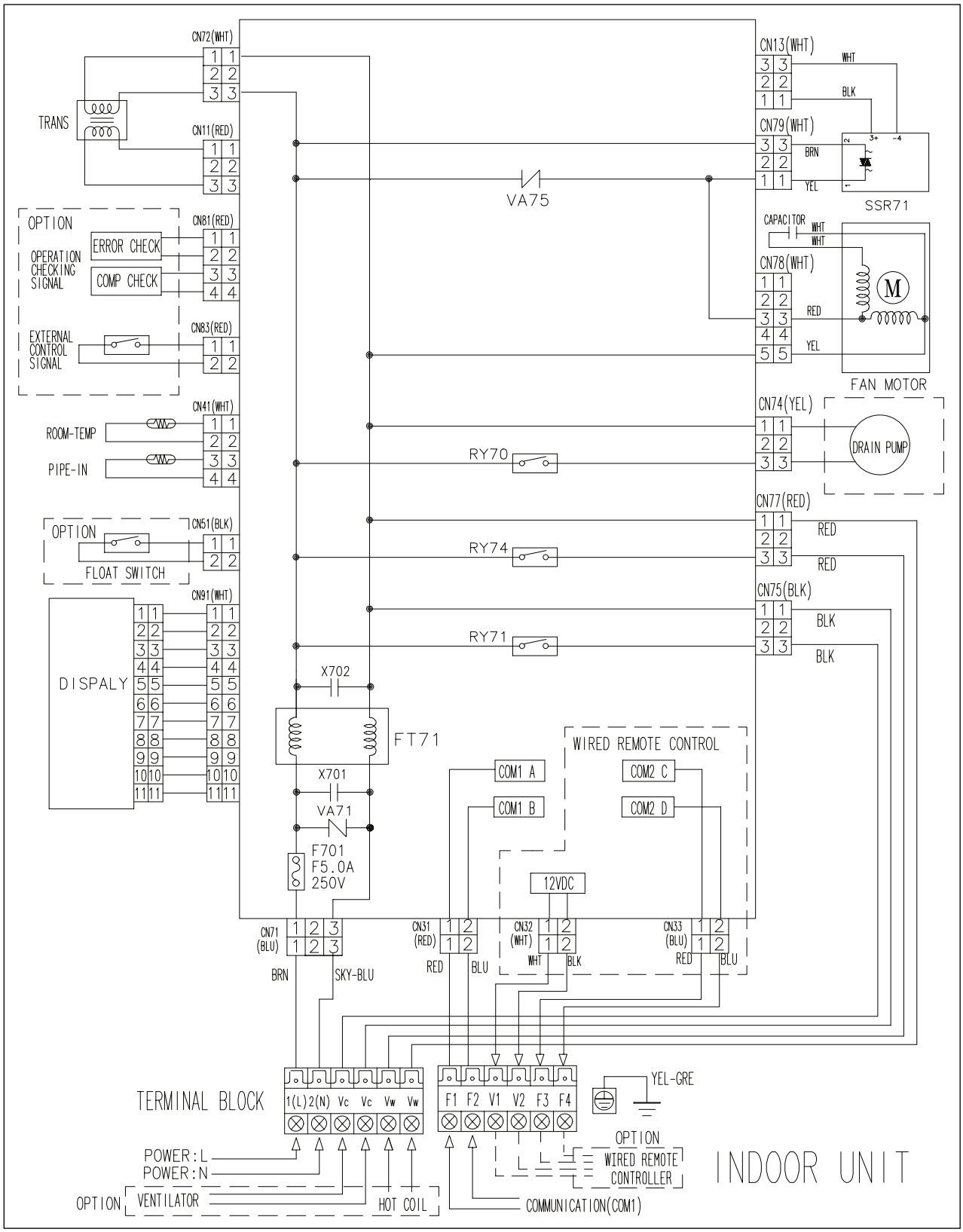
2-4. Slim duct

1) EH035EAV/EH052EAV/EH070EAV



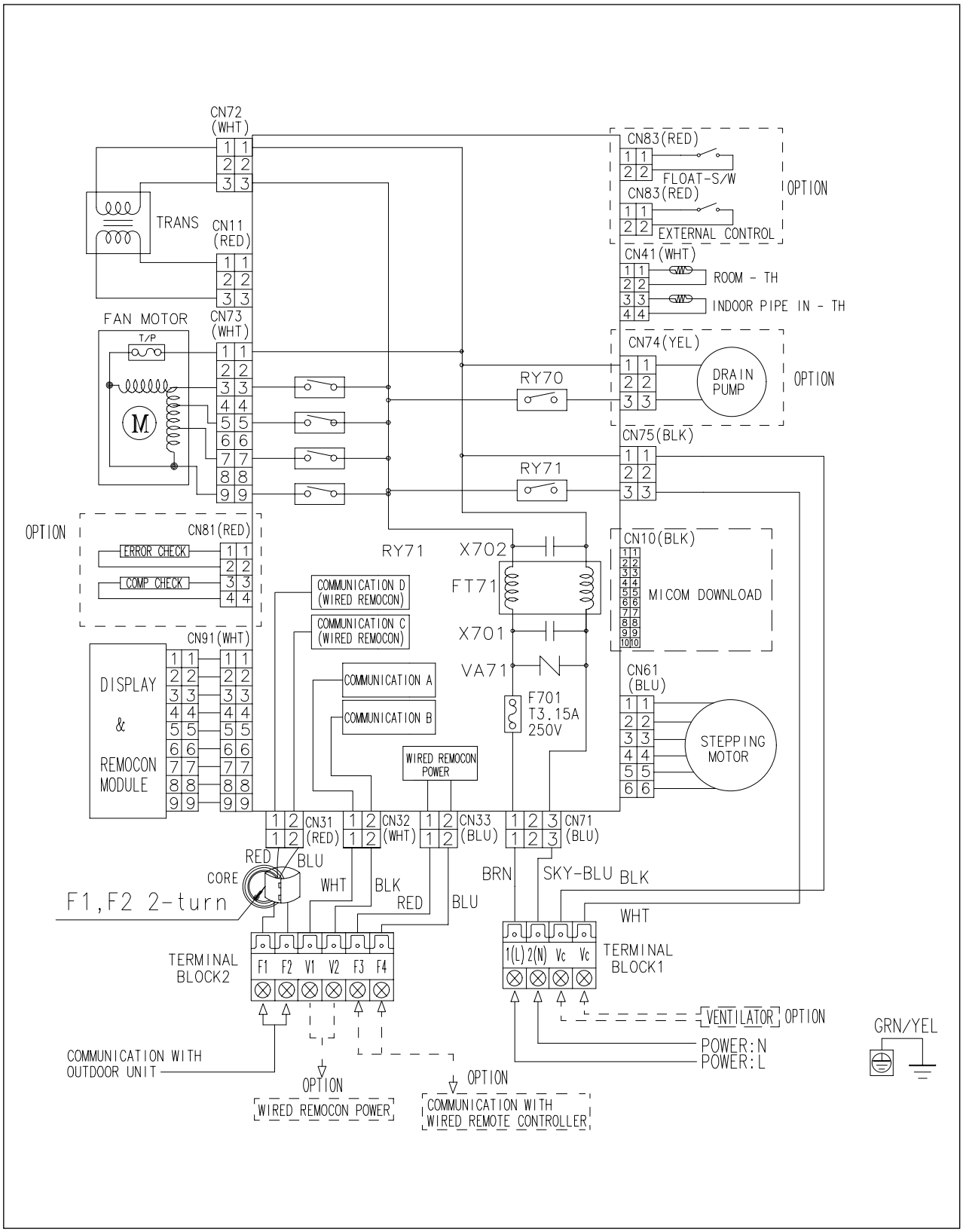
2-5. MSP duct

1) DH105EAV/DH140EAV



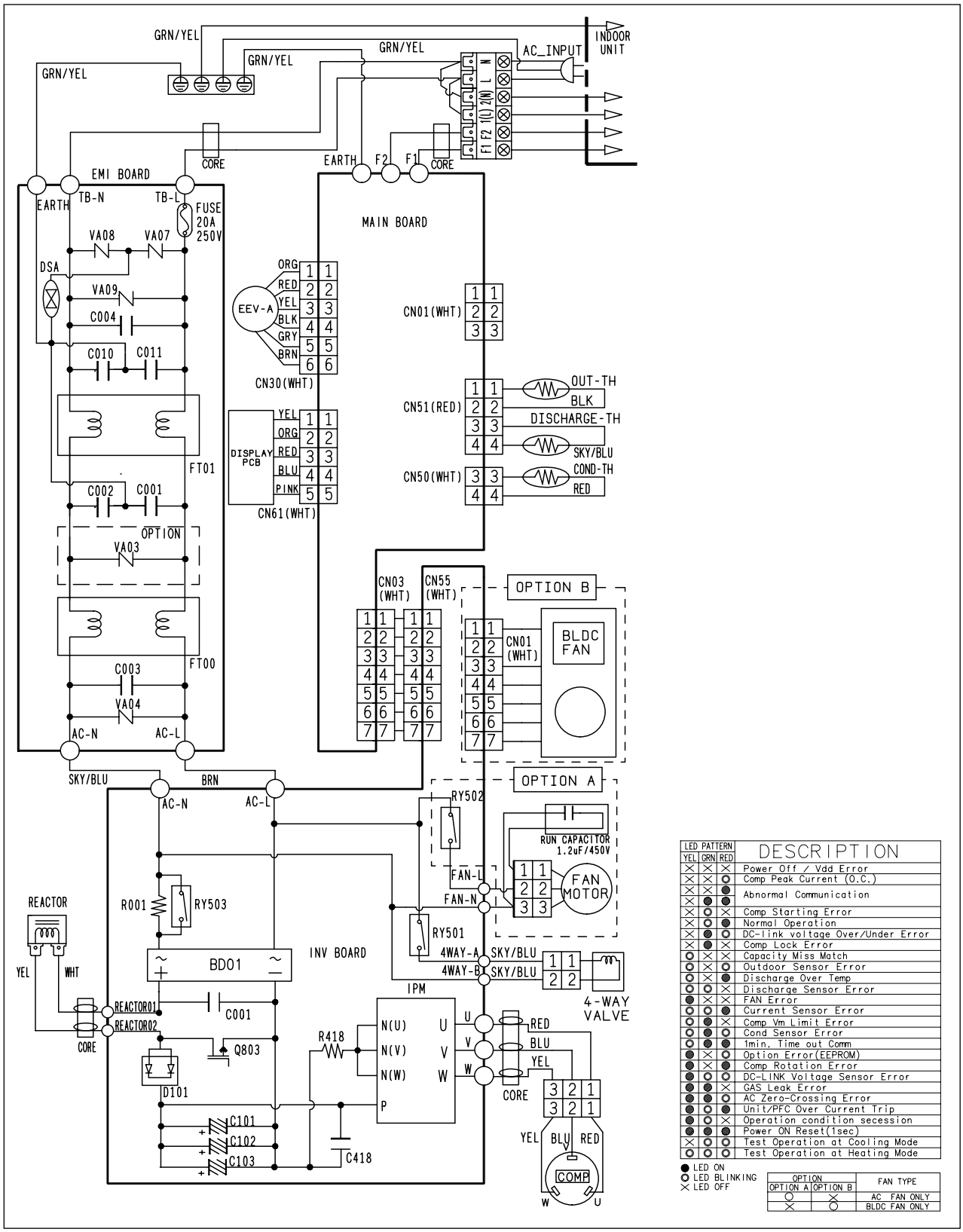
2-6. Ceiling

1) FH052EAV/FH070EAV



2-7. Outdoor unit

1) UH026EAV/UH035EAV

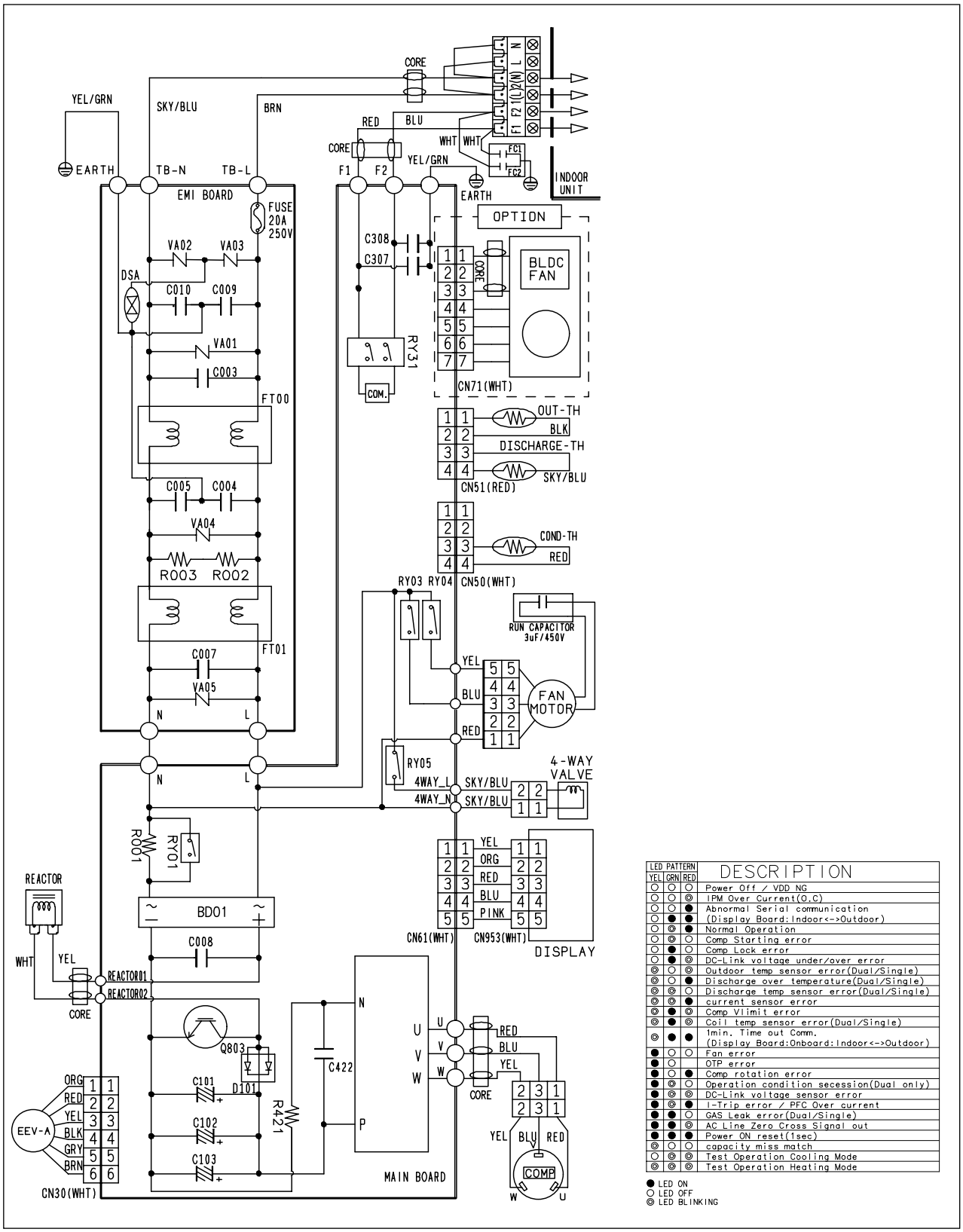


LED PATTERN YEL	LED PATTERN GRN	LED PATTERN RED	DESCRIPTION
×	×	×	Power Off / Vdd Error
×	×	○	Comp Peak Current (O.C.)
×	×	●	Abnormal Communication
×	●	●	
×	○	×	Comp Starting Error
×	○	●	Normal Operation
×	●	○	DC-link voltage Over/Under Error
×	●	×	Comp Lock Error
○	×	×	Capacity Miss Match
○	×	○	Outdoor Sensor Error
○	×	●	Discharge Over Temp
○	○	×	Discharge Sensor Error
●	×	×	FAN Error
○	○	●	Current Sensor Error
○	●	×	Comp Vm Limit Error
○	●	○	Cond Sensor Error
○	●	●	1min. Time out Comm
●	×	○	Option Error(EEPROM)
●	×	●	Comp Rotation Error
●	○	○	DC-LINK Voltage Sensor Error
●	●	×	GAS Leak Error
●	●	○	AC Zero-Crossing Error
●	○	●	Unit/PFC Over Current Trip
●	○	×	Operation condition secession
●	●	●	Power ON Reset(1sec)
×	○	○	Test Operation at Cooling Mode
○	○	○	Test Operation at Heating Mode

● LED ON
○ LED BLINKING
× LED OFF

OPTION A	OPTION B	FAN TYPE
○	×	AC FAN ONLY
×	○	BLDC FAN ONLY

2) UH052EAV

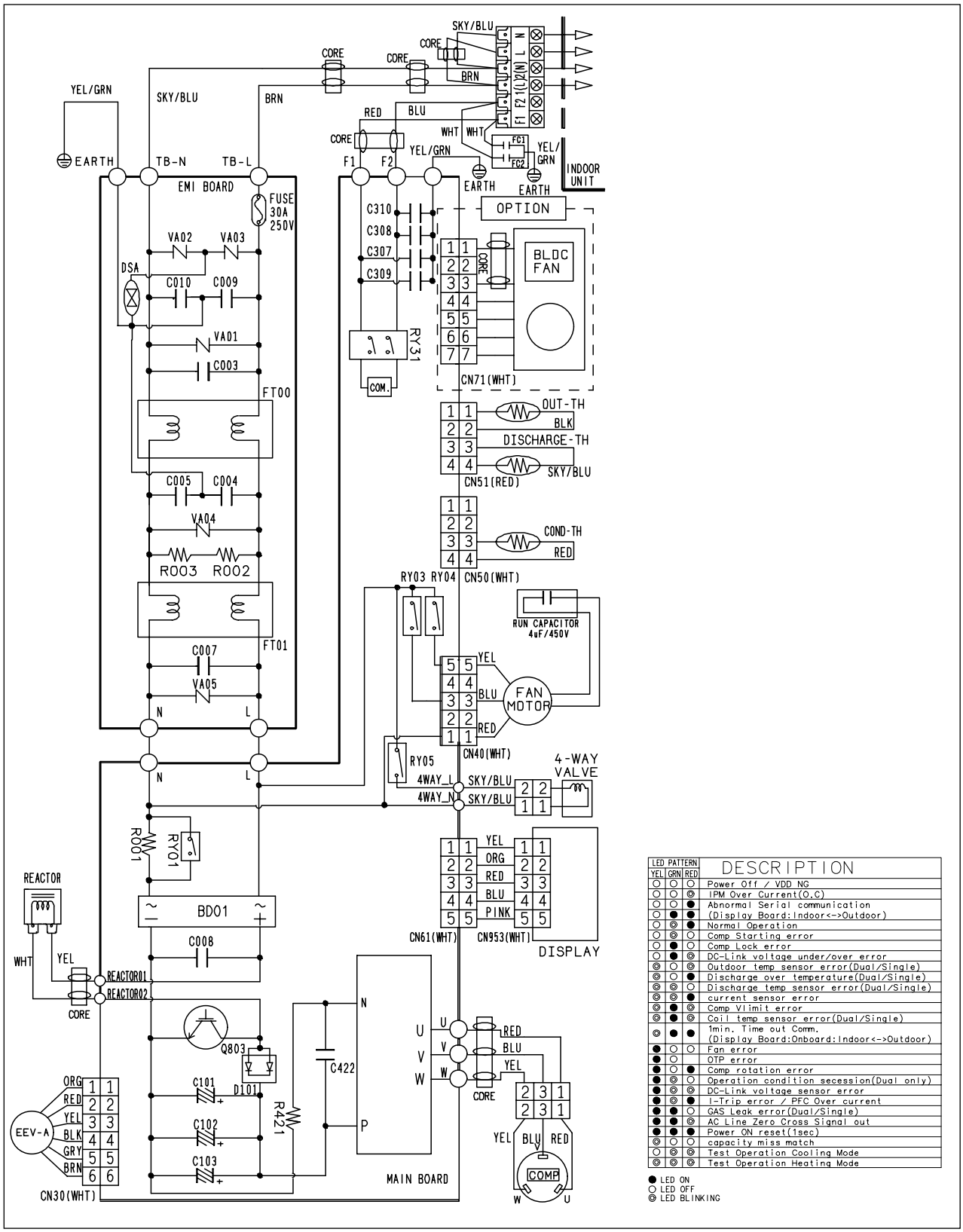


LED PATTERN YEL	LED PATTERN GRN	LED PATTERN RED	DESCRIPTION
○	○	○	Power Off / VDD NG
○	○	◎	IPM Over Current(O.C)
○	○	●	Abnormal Serial communication
○	●	●	(Display Board:Indoor<->Outdoor)
○	◎	●	Normal Operation
○	◎	○	Comp Starting error
○	●	○	Comp Lock error
○	●	◎	DC-Link voltage under/over error
◎	○	◎	Outdoor temp sensor error(Dual/Single)
◎	○	●	Discharge over temperature(Dual/Single)
◎	◎	○	Discharge temp sensor error(Dual/Single)
◎	◎	●	current sensor error
◎	●	◎	Comp Vlimit error
◎	●	◎	Coil temp sensor error(Dual/Single)
◎	●	●	1min. Time out Comm. (Display Board:Onboard:Indoor<->Outdoor)
●	○	○	Fan error
●	○		OTP error
●	○	●	Comp rotation error
●	◎	○	Operation condition secession(Dual only)
●	◎	◎	DC-Link voltage sensor error
●	◎	●	1-Trip error / PFC Over current
●	●	○	GAS Leak error(Dual/Single)
●	●	◎	AC Line Zero Cross Signal out
●	●	●	Power ON reset(1sec)
◎	○	○	capacity miss match
○	◎	◎	Test Operation Cooling Mode
◎	◎	◎	Test Operation Heating Mode

● LED ON
○ LED OFF
◎ LED BLINKING

2-7. Outdoor unit

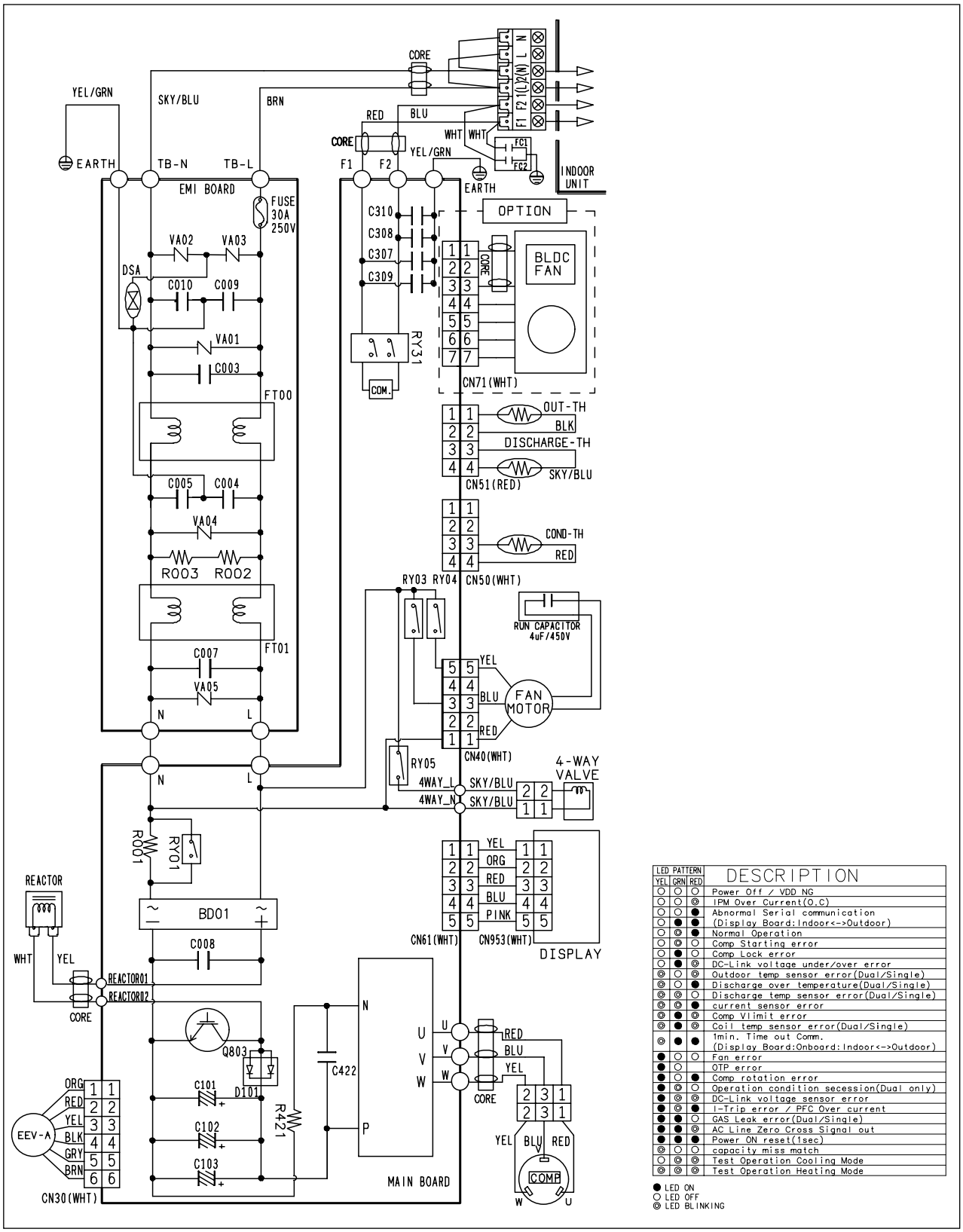
3) UH060EAV



LED PATTERN YEL	GRN	RED	DESCRIPTION
○	○	○	Power Off / VDD NG
○	○	◎	IPM Over Current(O.C)
○	○	●	Abnormal Serial communication
○	●	●	(Display Board:Indoor<->Outdoor)
○	◎	●	Normal Operation
○	◎	○	Comp Starting error
○	●	○	Comp Lock error
○	●	◎	DC-Link voltage under/over error
◎	○	◎	Outdoor temp sensor error(Dual/Single)
◎	○	●	Discharge over temperature(Dual/Single)
◎	◎	○	Discharge temp sensor error(Dual/Single)
◎	◎	●	current sensor error
◎	●	◎	Comp Ylimit error
◎	●	◎	Coil temp sensor error(Dual/Single)
◎	●	●	1min. Time out Comm. (Display Board:Onboard:Indoor<->Outdoor)
●	○	○	Fan error
●	○		OTP error
●	○	●	Comp rotation error
●	◎	○	Operation condition secession(Dual only)
●	◎	◎	DC-Link voltage sensor error
●	◎	●	I-Trip error / PFC Over current
●	●	○	GAS Leak error(Dual/Single)
●	●	◎	AC Line Zero Cross Signal out
●	●	●	Power ON reset(1sec)
◎	○	○	capacity miss match
○	◎	◎	Test Operation Cooling Mode
◎	◎	◎	Test Operation Heating Mode

● LED ON
○ LED OFF
◎ LED BLINKING

4) UH070EAV

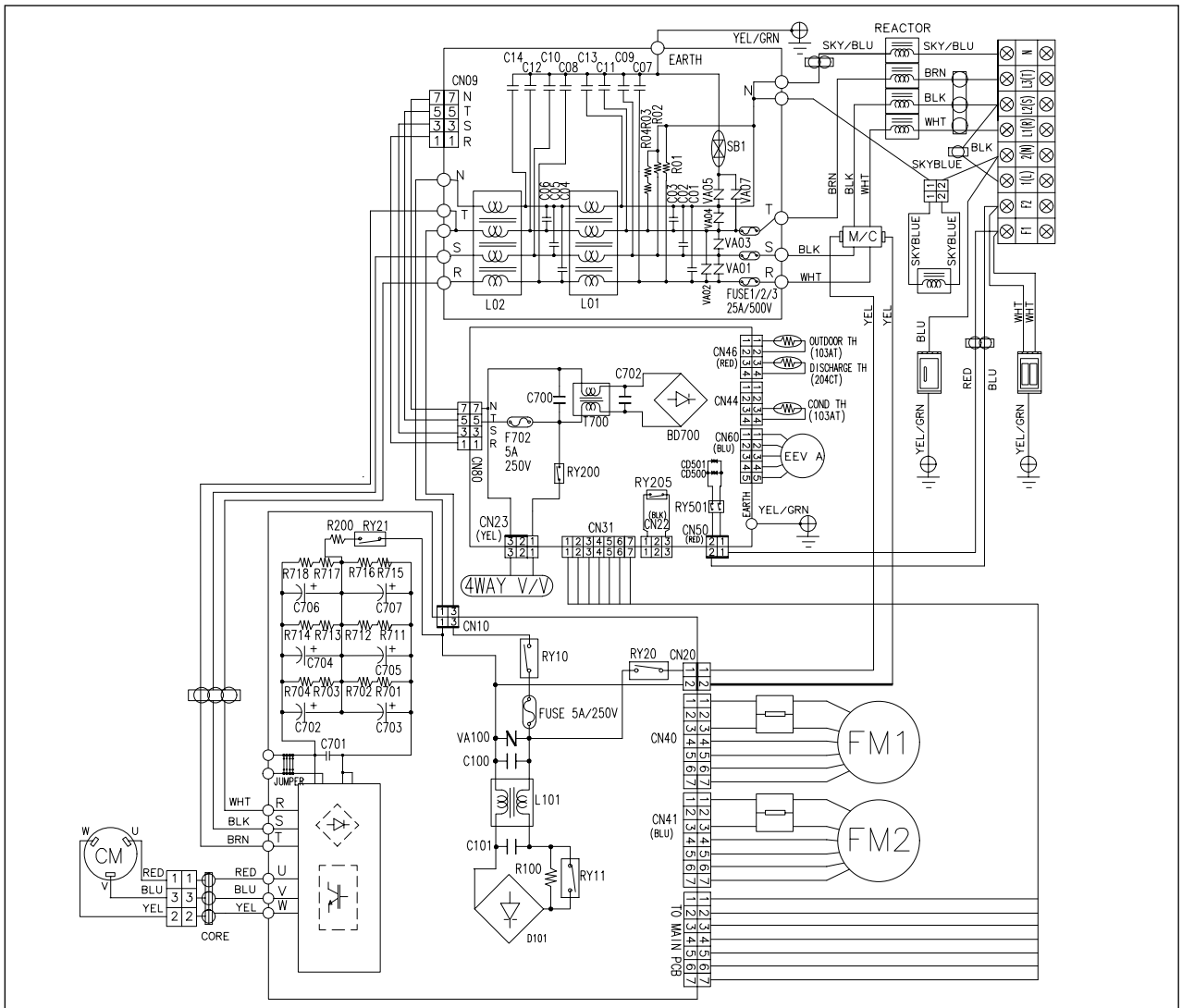


LED PATTERN YEL	GRN	RED	DESCRIPTION
○	○	○	Power Off / VDD NG
○	○	◎	IPM Over Current(O.C)
○	○	●	Abnormal Serial communication
○	●	●	(Display Board:Indoor<->Outdoor)
○	◎	●	Normal Operation
○	◎	○	Comp Starting error
○	●	○	Comp Lock error
○	●	◎	DC-Link voltage under/over error
◎	○	○	Outdoor temp sensor error(Dual/Single)
◎	○	●	Discharge over temperature(Dual/Single)
◎	◎	○	Discharge temp sensor error(Dual/Single)
◎	◎	●	current sensor error
◎	●	◎	Comp Vlimit error
◎	●	◎	Coil temp sensor error(Dual/Single)
◎	●	●	1min. Time out Comm. (Display Board:Onboard:Indoor<->Outdoor)
●	○	○	Fan error
●	○		OTP error
●	○	●	Comp rotation error
●	◎	○	Operation condition secession(Dual only)
●	◎	◎	DC-Link voltage sensor error
●	◎	●	I-Trip error / PFC Over current
●	●	○	GAS Leak error(Dual/Single)
●	●	◎	AC Line Zero Cross Signal out
●	●	●	Power ON reset(1sec)
◎	○	○	capacity miss match
○	◎	◎	Test Operation Cooling Mode
◎	◎	◎	Test Operation Heating Mode

● LED ON
○ LED OFF
◎ LED BLINKING

2-7. Outdoor unit

5) UH105GAV/UH140GAV



ERROR MODE			
LAMP of PBA			Description
YELLOW	GREEN	RED	
STATUS INDICATION			
○	○	○	POWER OFF/MISS-CONNECTOIN
●	●	◎	POWER CABLE MISS-CONNECTING
○	◎	●	NORMAL OPERATION
◎	○	○	INDOOR OPTION ERROR
◎	●	●	NO COMMUNICATION(INDOOR-OUTDOOR)
◎	◎	●	CURRENT SENSOR ERROR
●	◎	◎	DC-LINK VOLTAGE SENSOR ERROR
◎	○	◎	OUTDOOR TEMP SENSOR ERROR
◎	●	◎	COND TEMP SENSOR ERROR
◎	◎	○	DISCHARGE TEMP SENSOR ERROR
●	○	○	OUTDOOR FAN ERROR
●	○	◎	OPTION ERROR (EEPROM)
○	○	◎	COMP PEAK CURRENT (O.C.)
○	◎	○	COMP STARTING ERROR
●	○	●	COMP ROTATION ERROR
○	●	◎	DC-LINK VOLTAGE ERROR
●	●	○	NO GAS ERROR

● : LAMP ON, ○ : LAMP OFF, ◎ : LAMP BLINKING

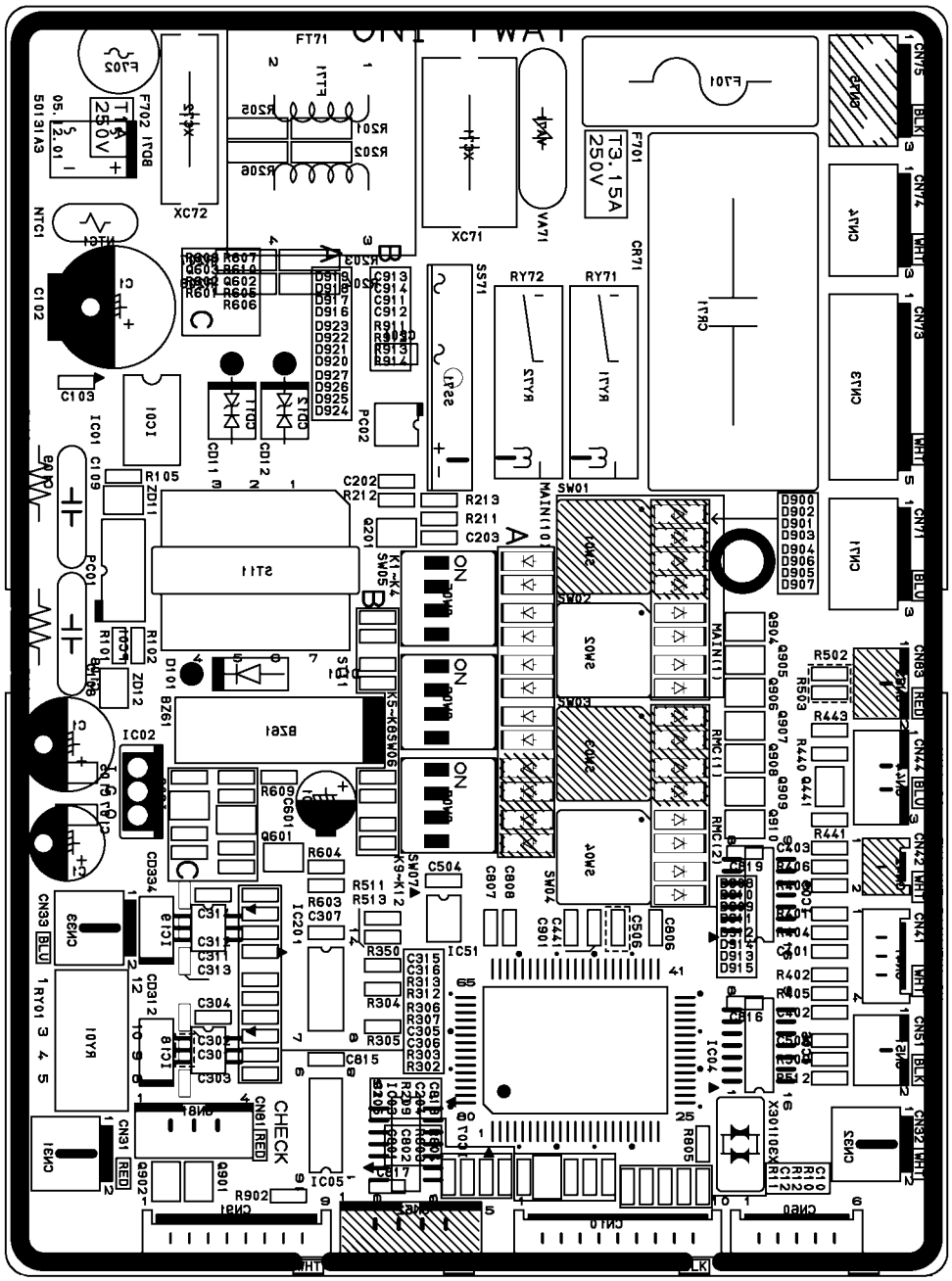
3. PCB

3-1. Ass'y PCB List

PRODUCT	INDOOR UNIT		OUTDOOR UNIT	
	Model Name	PBA Code	Model Name	Ass'y Control Out Code
1 way cassette	KH026EAV	DB93-03654A	UH026EAV	DB93-03453B
	KH035EAV		UH035EAV	DB93-03453A
4 way cassette	CH070EAV	DB93-02833E	UH070EAV	DB93-03665E
	CH105EAV	DB93-04120C	UH105GAV	DB93-04389B
	CH140EAV		UH140GAV	DB93-04389A
Mini 4 way cassette	TH026EAV	DB93-03451A	UH026EAV	DB93-03453B
	TH035EAV		UH035EAV	DB93-03453A
	TH052EAV		UH052EAV	DB93-03665D
	TH060EAV		UH060EAV	DB93-03665C
Slim duct	EH035EAV	DB93-03213G	UH035EAV	DB93-03453A
	EH052EAV		UH052EAV	DB93-03665D
	EH070EAV		UH070EAV	DB93-03665E
MSP duct	DH105EAV	DB93-03213H	UH105GAV	DB93-04389B
	DH140EAV		UH140GAV	DB93-04389A
Ceiling	FH052EAV	DB93-03375A	UH052EAV	DB93-03665D
	FH070EAV		UH070EAV	DB93-03665E

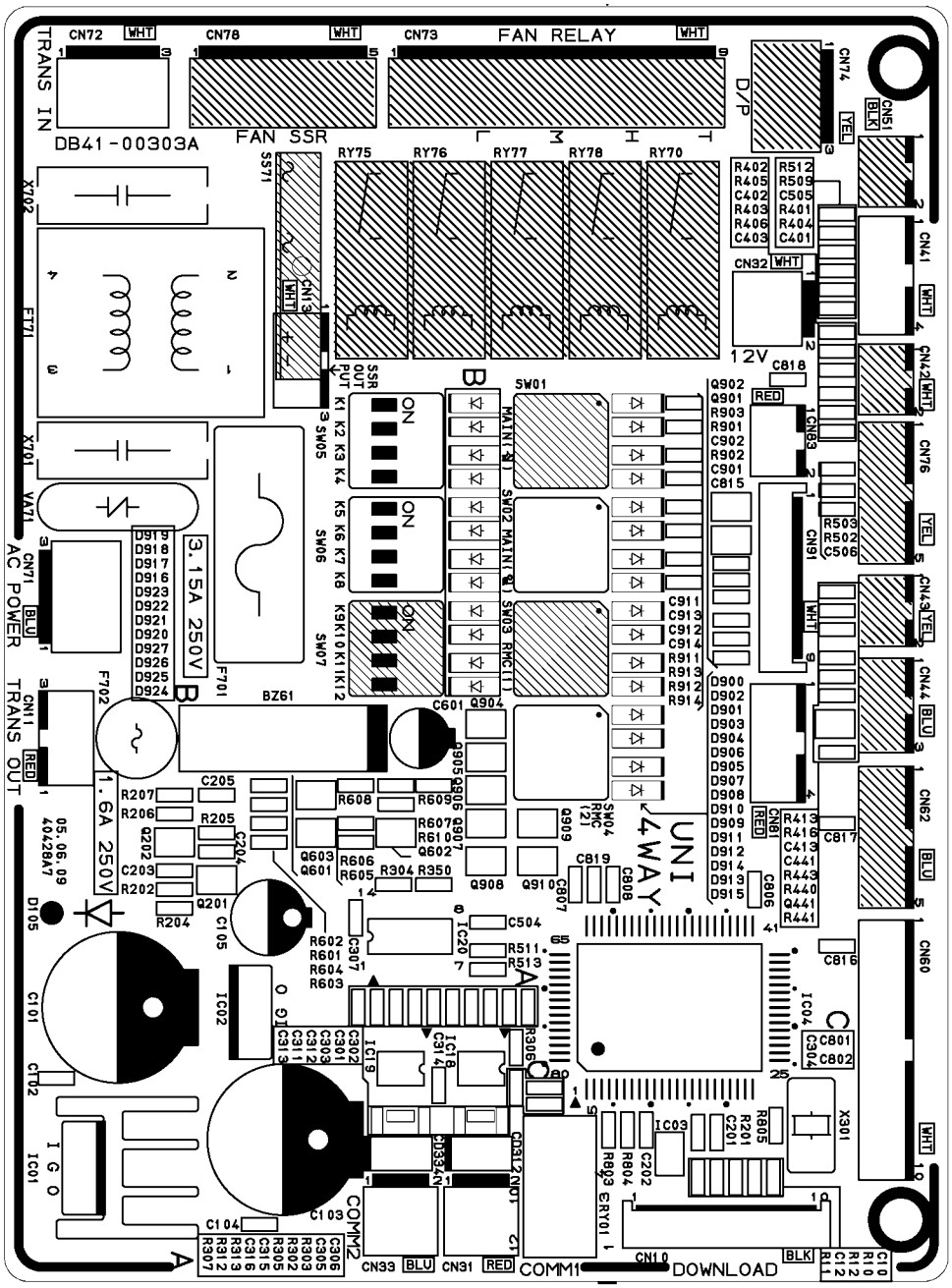
3-2. 1 way cassette

1) KH026EAV/KH035EAV



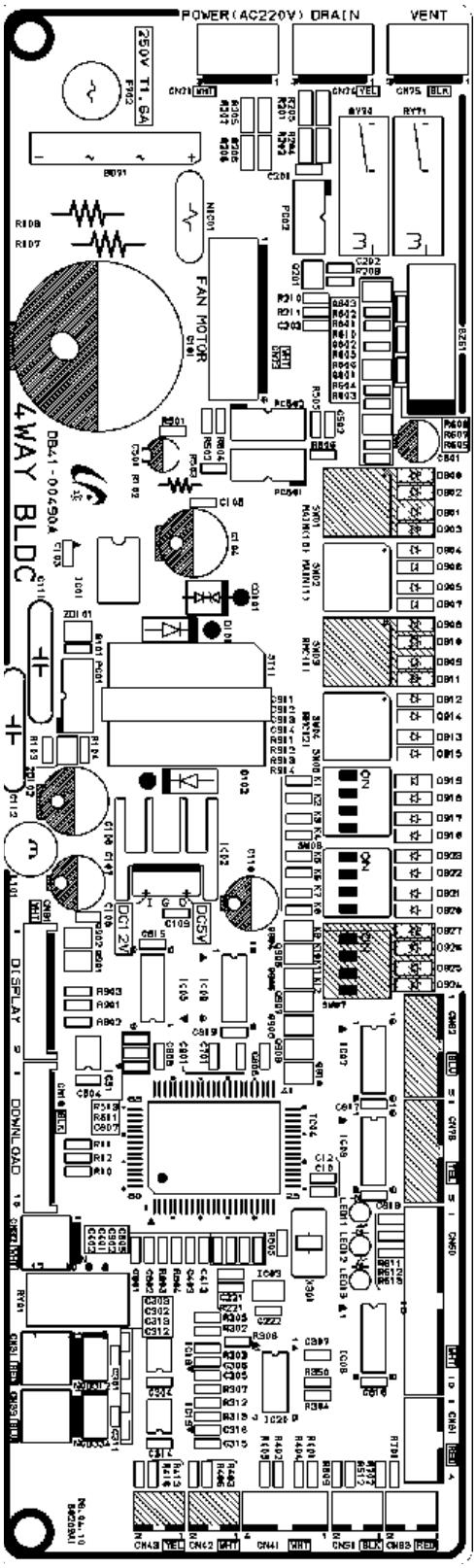
3-3. 4 way cassette

1) CH070EAV



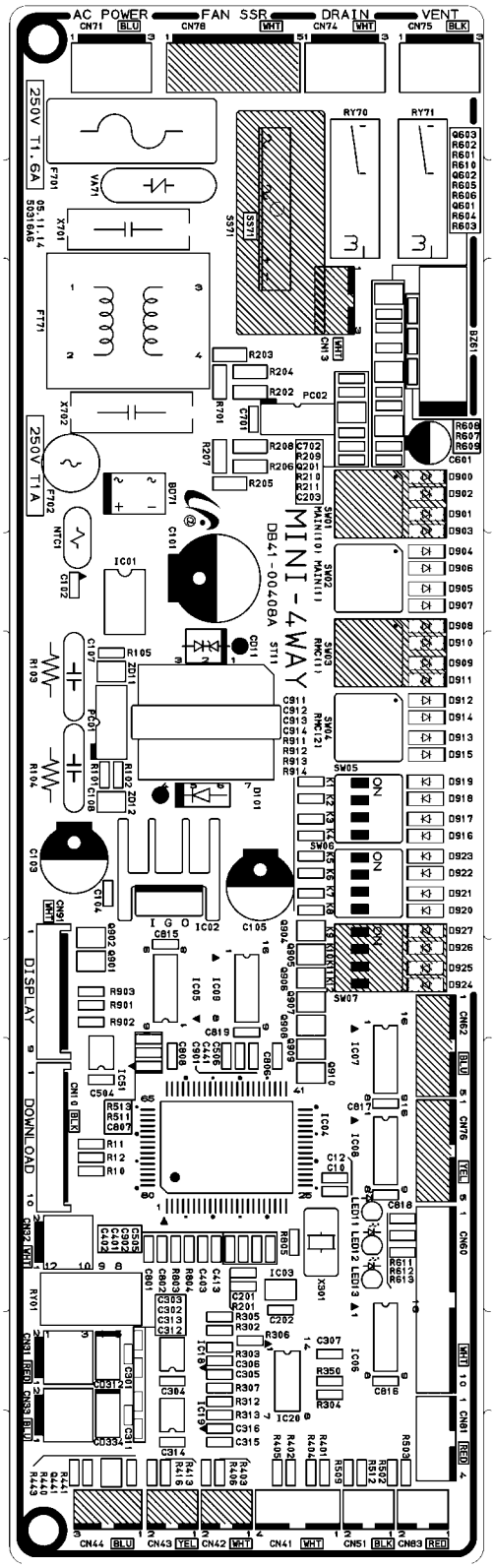
3-3. 4 way cassette

2) CH105EAV/CH140EAV



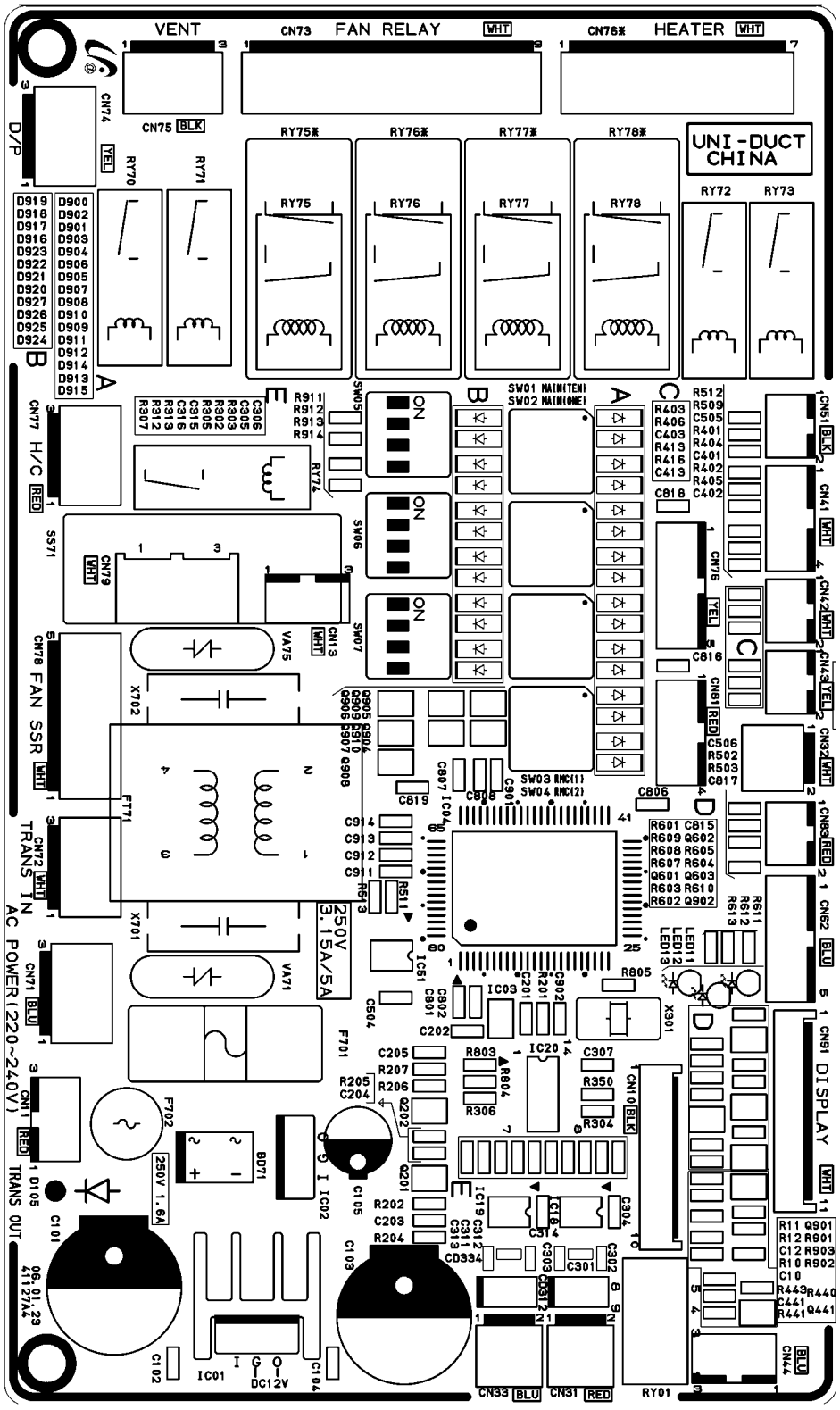
3-4. Mini 4 way cassette

1) TH026EAV/TH035EAV/TH052EAV/TH060EAV



3-5. Slim duct

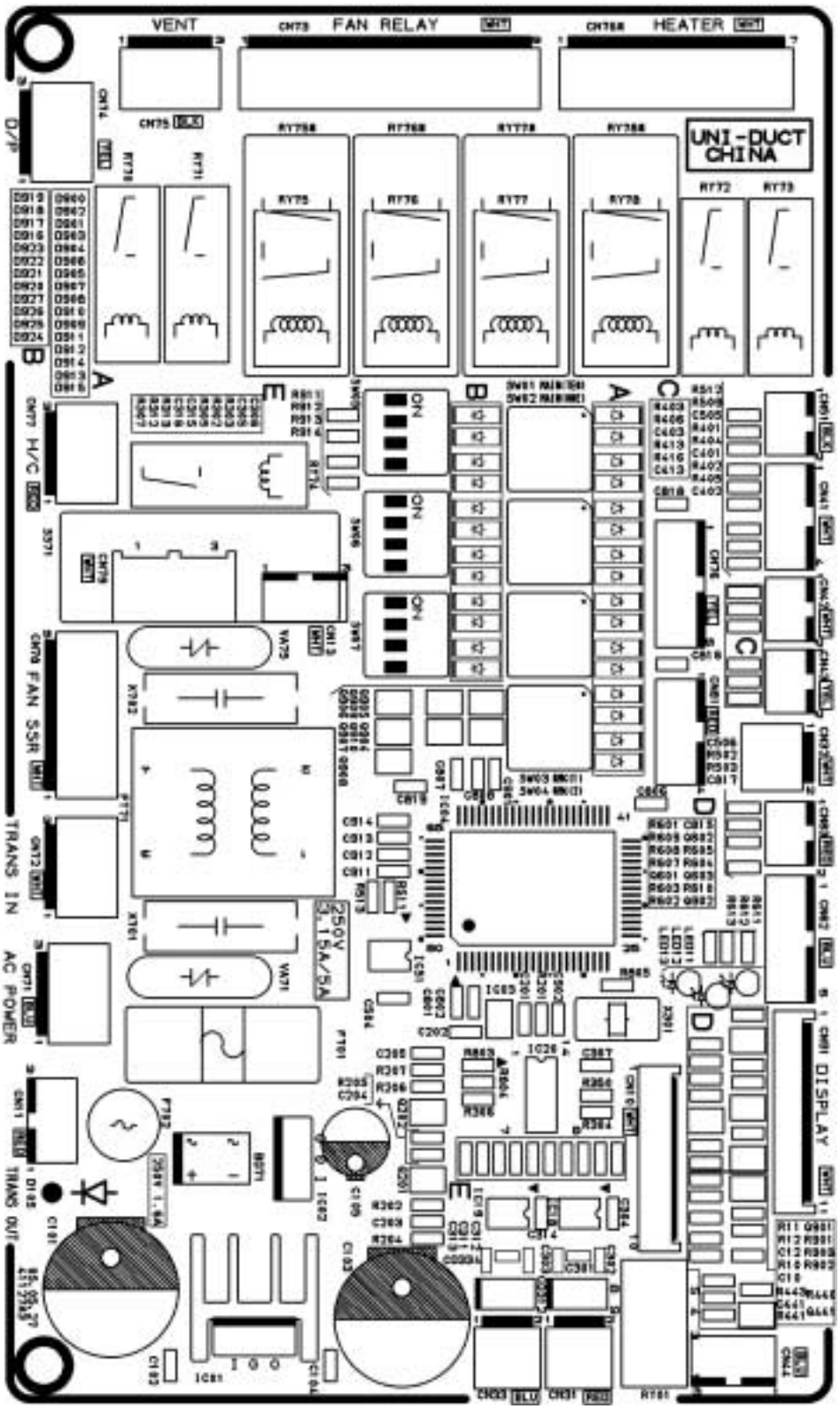
1) EH035EAV/EH052EAV/EH070EAV



✳ This Document can not be used without Samsung's authorization.

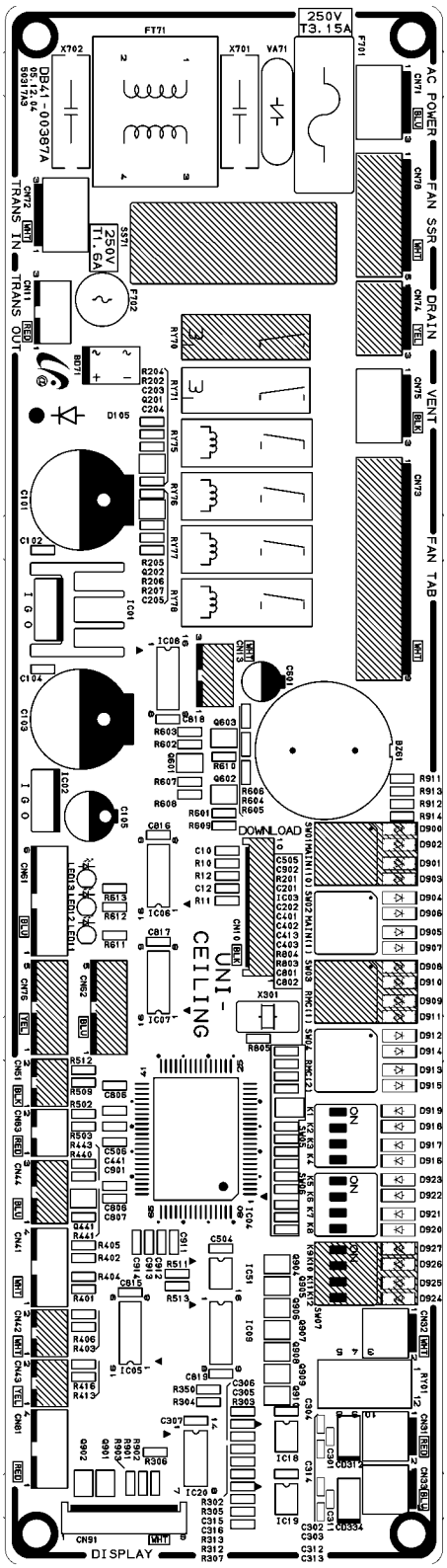
3-6. MSP duct

1) DH105EAV/DH140EAV



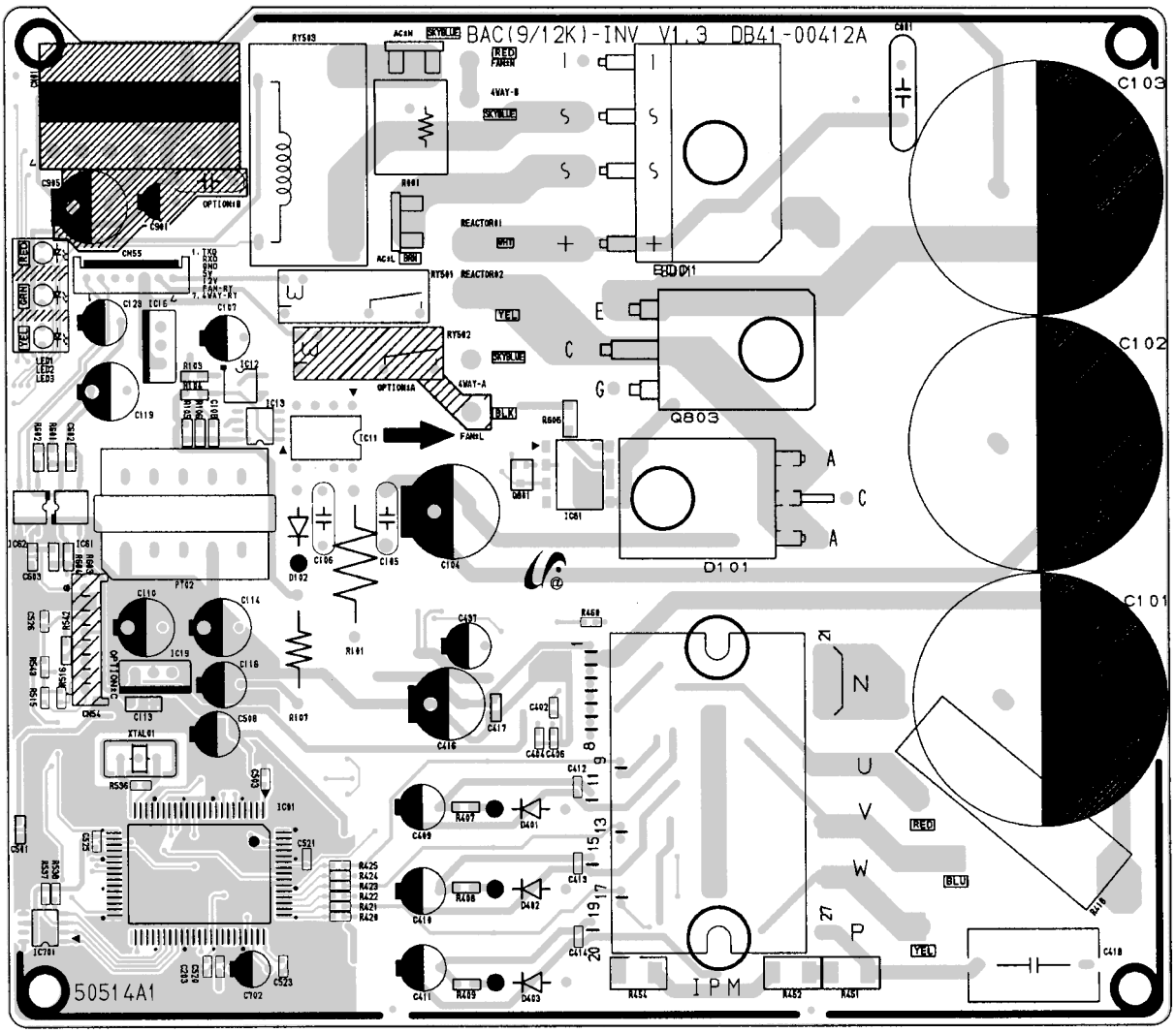
3-7. Ceiling

1) FH052EAV/FH070EAV



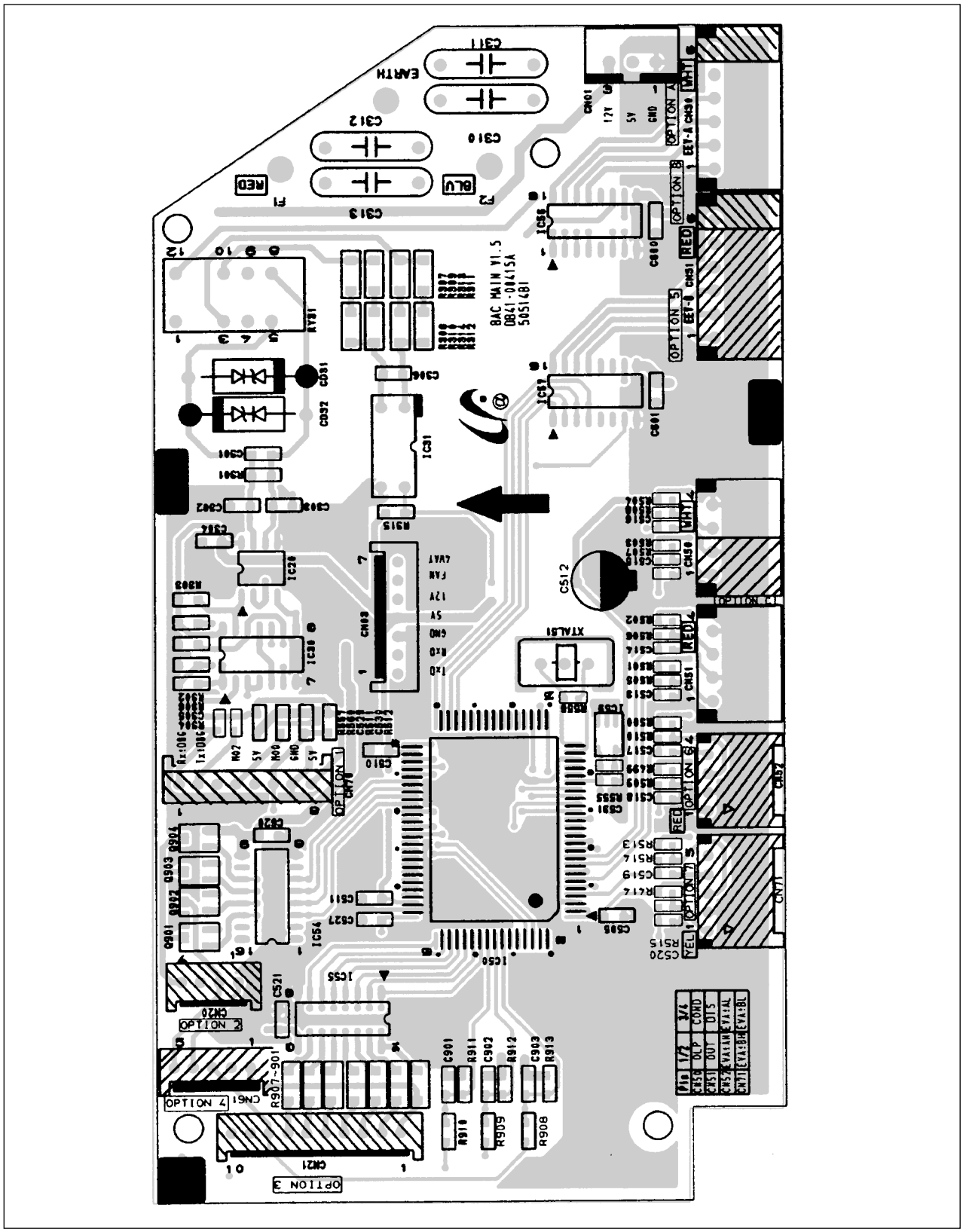
3-8. Outdoor unit

1) UH026EAV/UH035EAV (Inverter PCB)

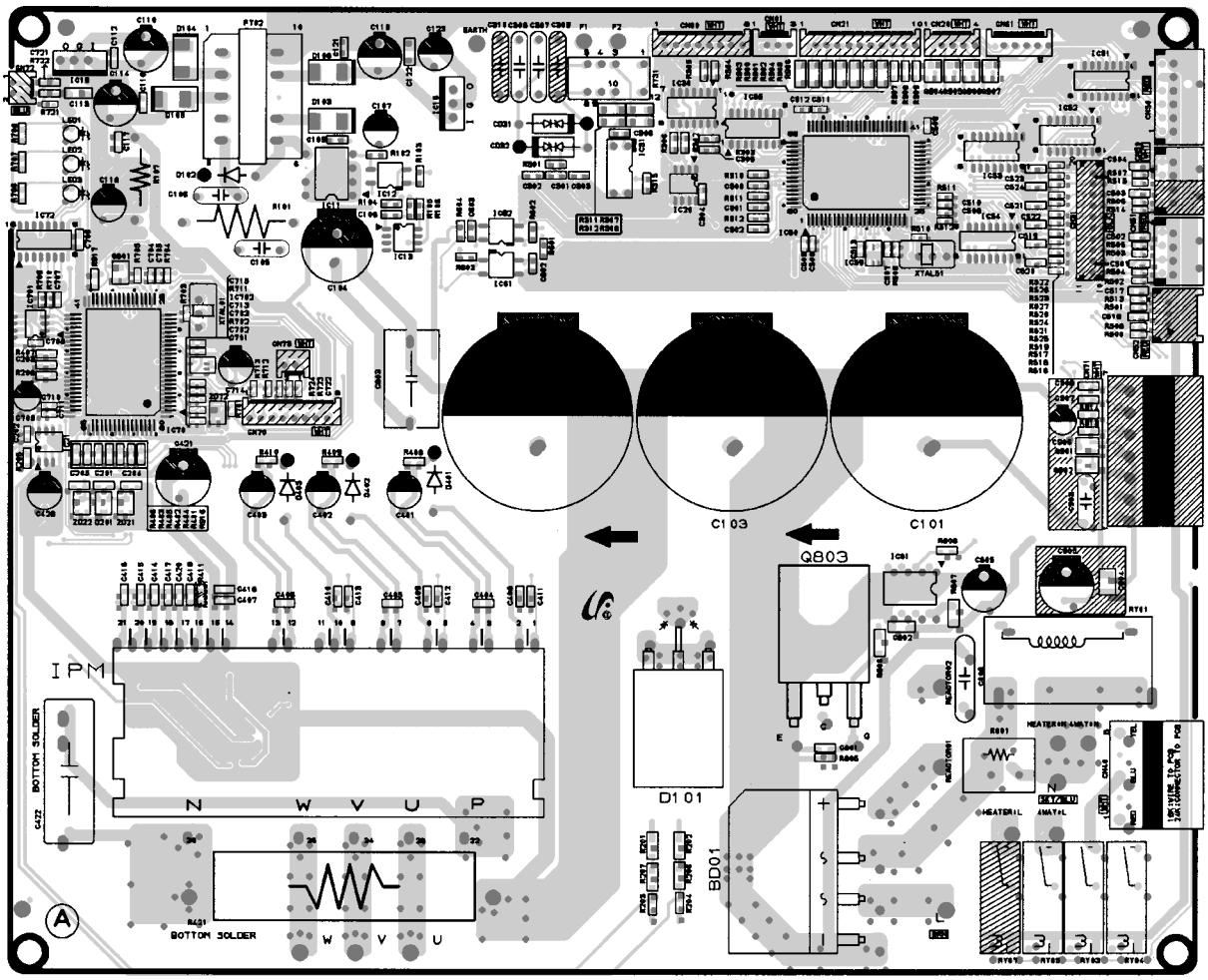


3-8. Outdoor unit

2) UH026EAV/UH035EAV (Main PCB)

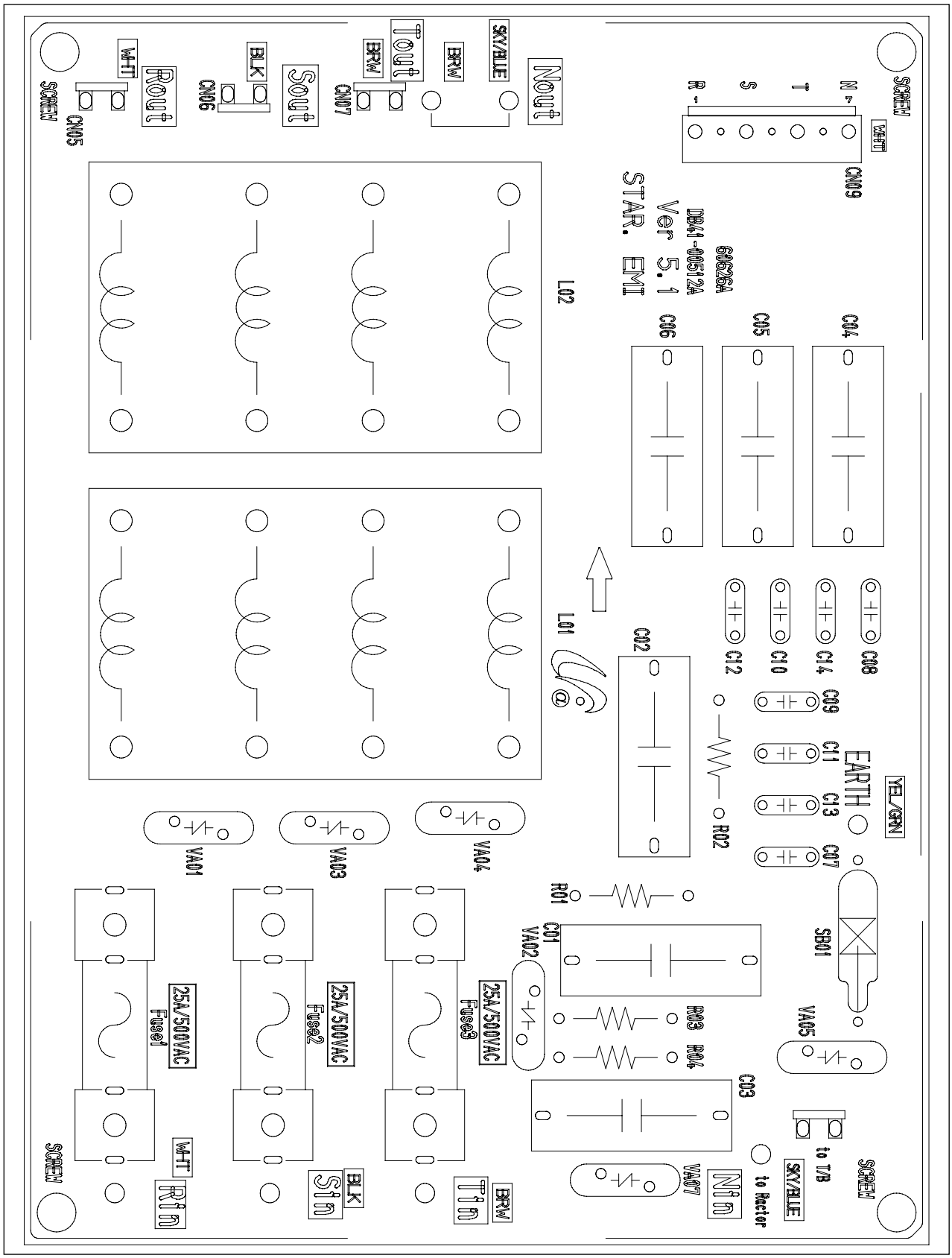


3) UH052EAV/UH060EAV/UH070EAV

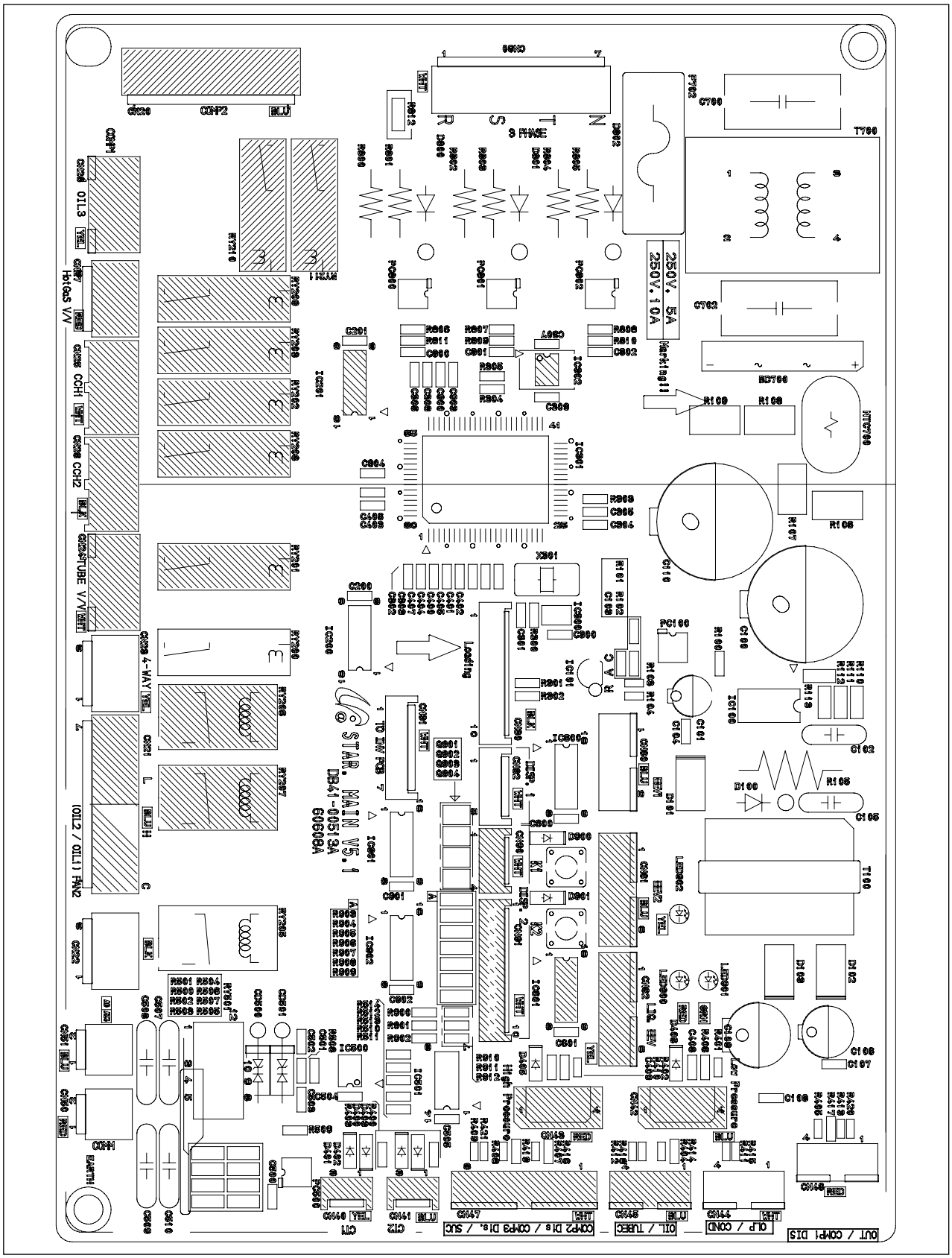


3-8. Outdoor unit

4) UH105GAV/UH140GAV (EMI PCB)

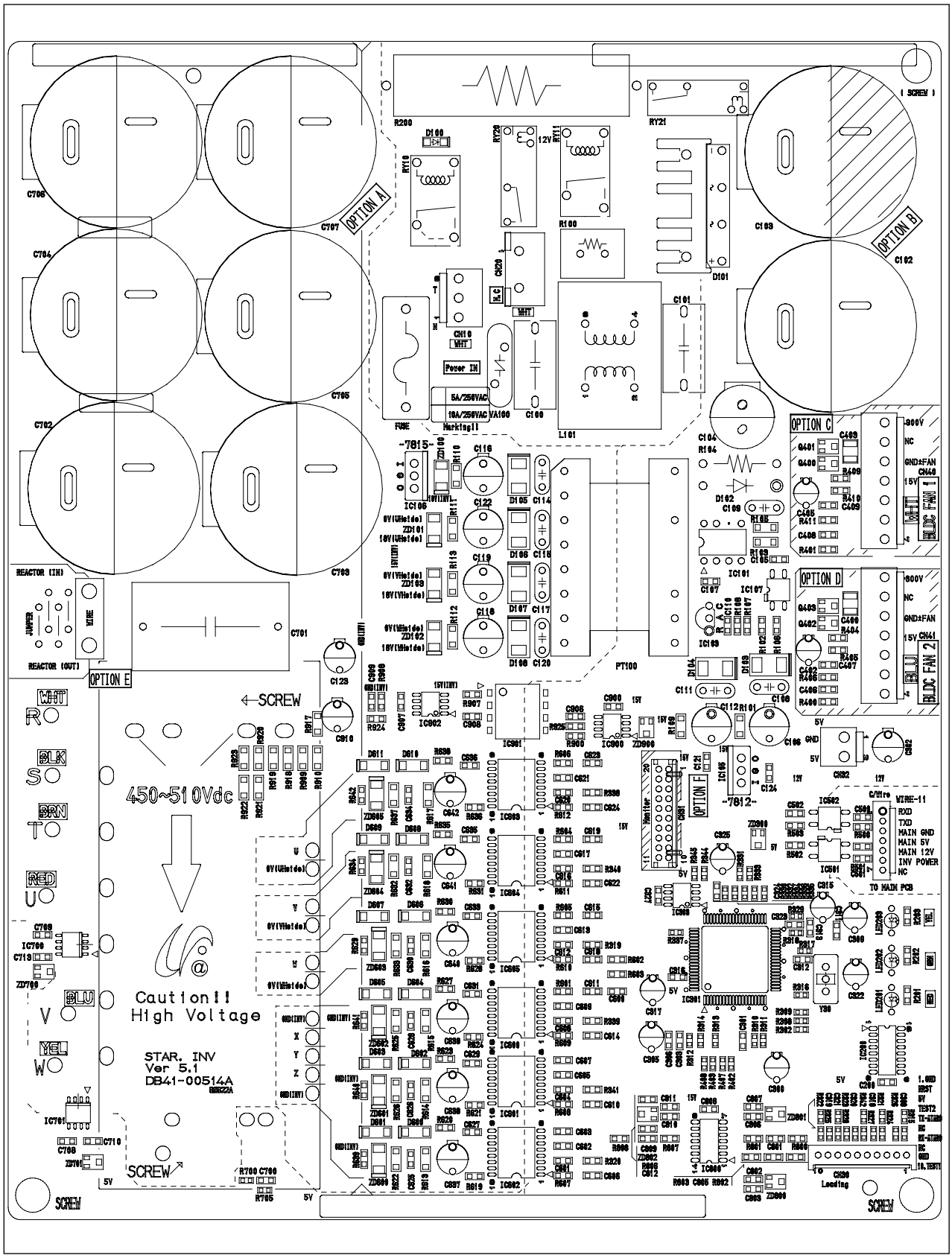


5) UH105GAV/UH140GAV (Main PCB)



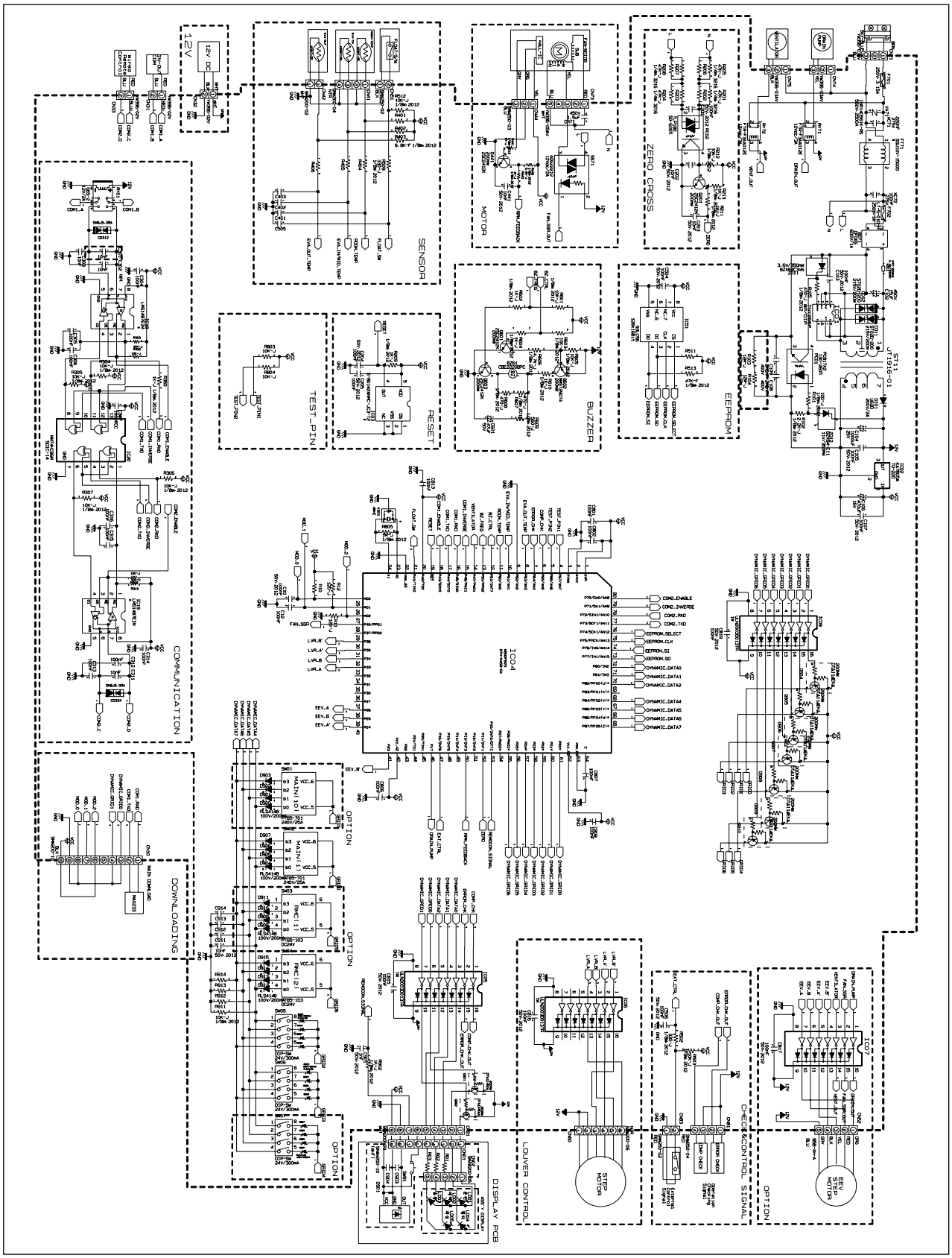
3-8. Outdoor unit

6) UH105GAV/UH140GAV (Inverter PCB)



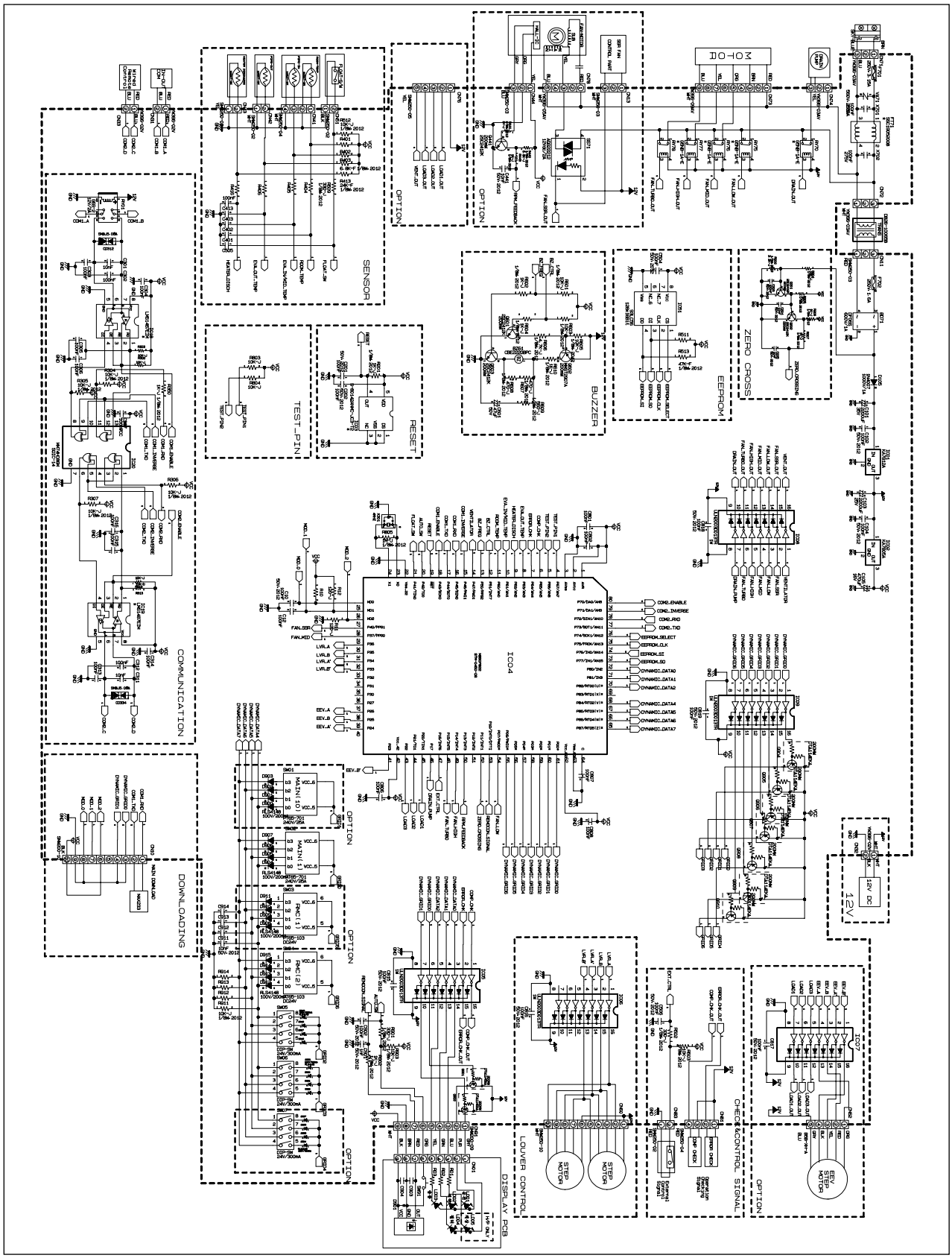
4-1. 1 way cassette

1) KH026EAV/KH035EAV

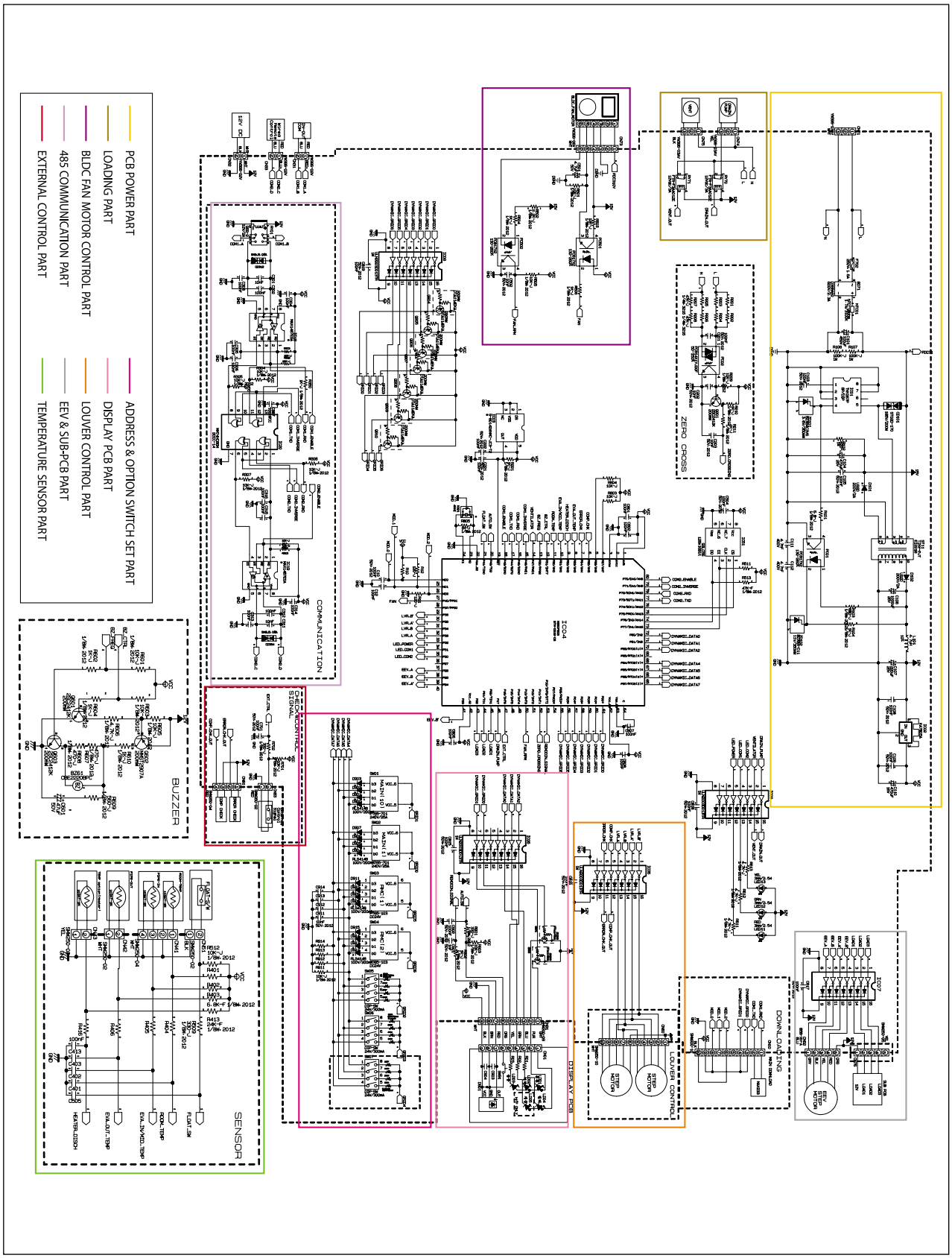


4-2. 4 way cassette

1) CH070EAV

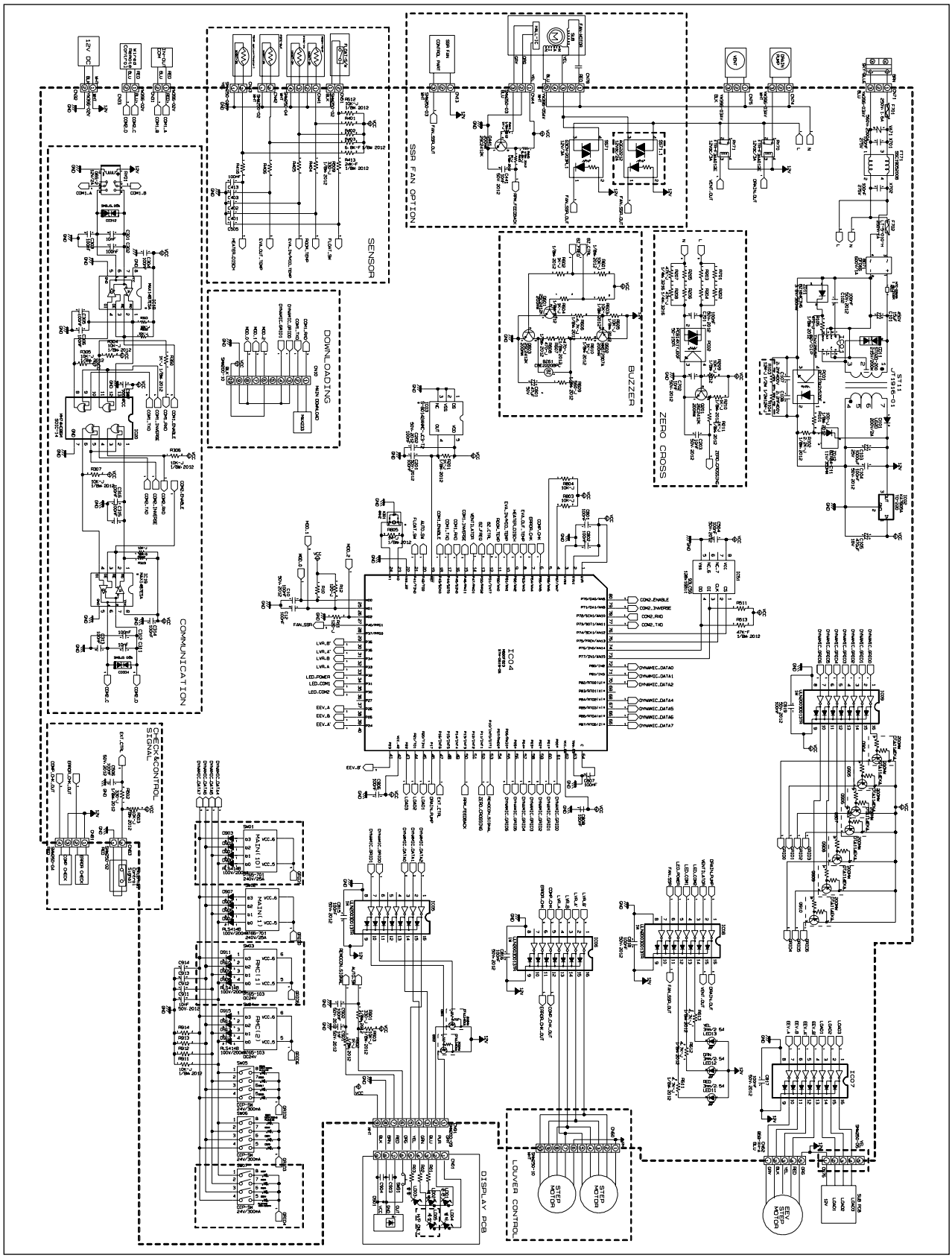


2) CH105EAV/CH140EAV



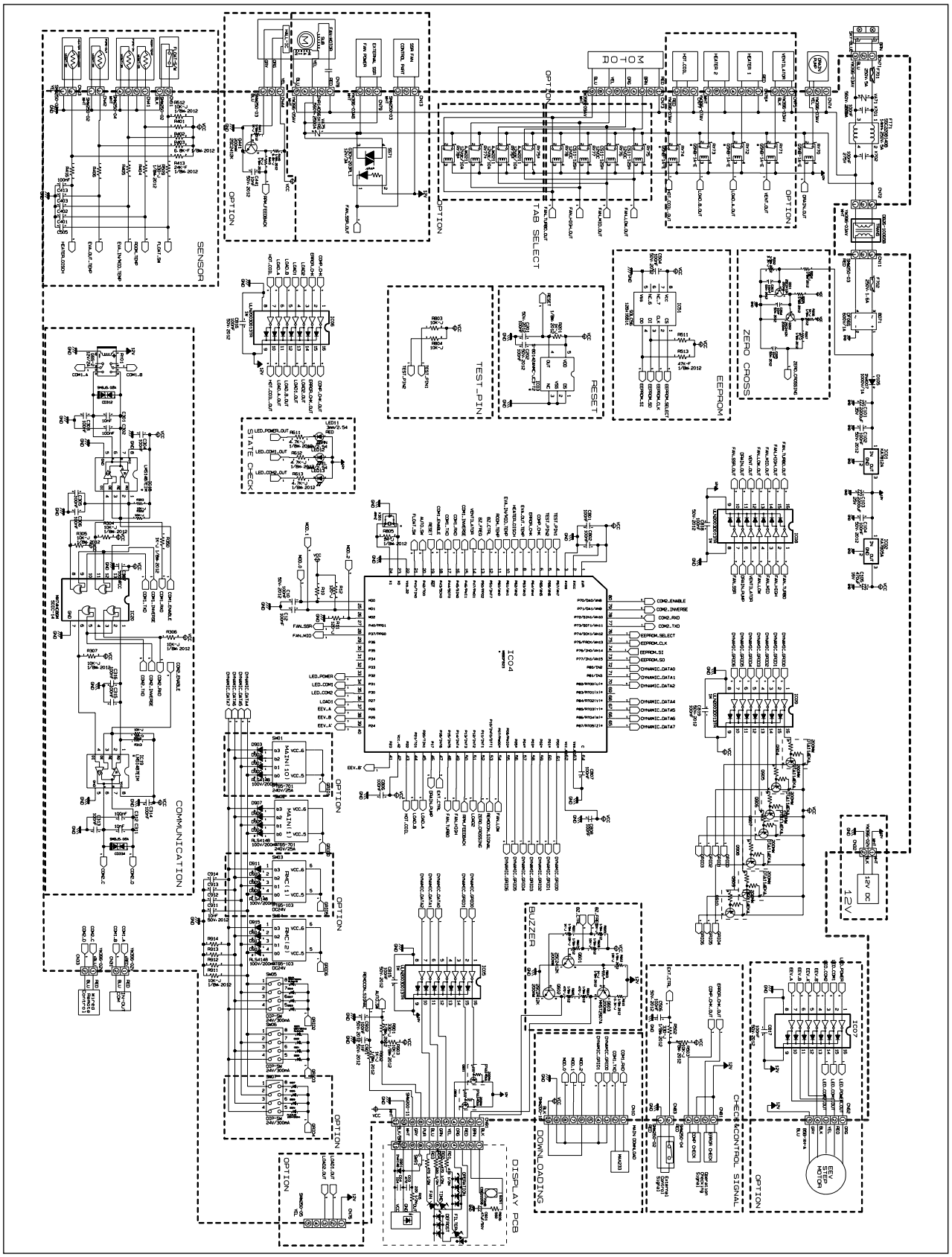
4-3. Mini 4 way cassette

1) TH026EAV/TH035EAV/TH052EAV/TH060EAV



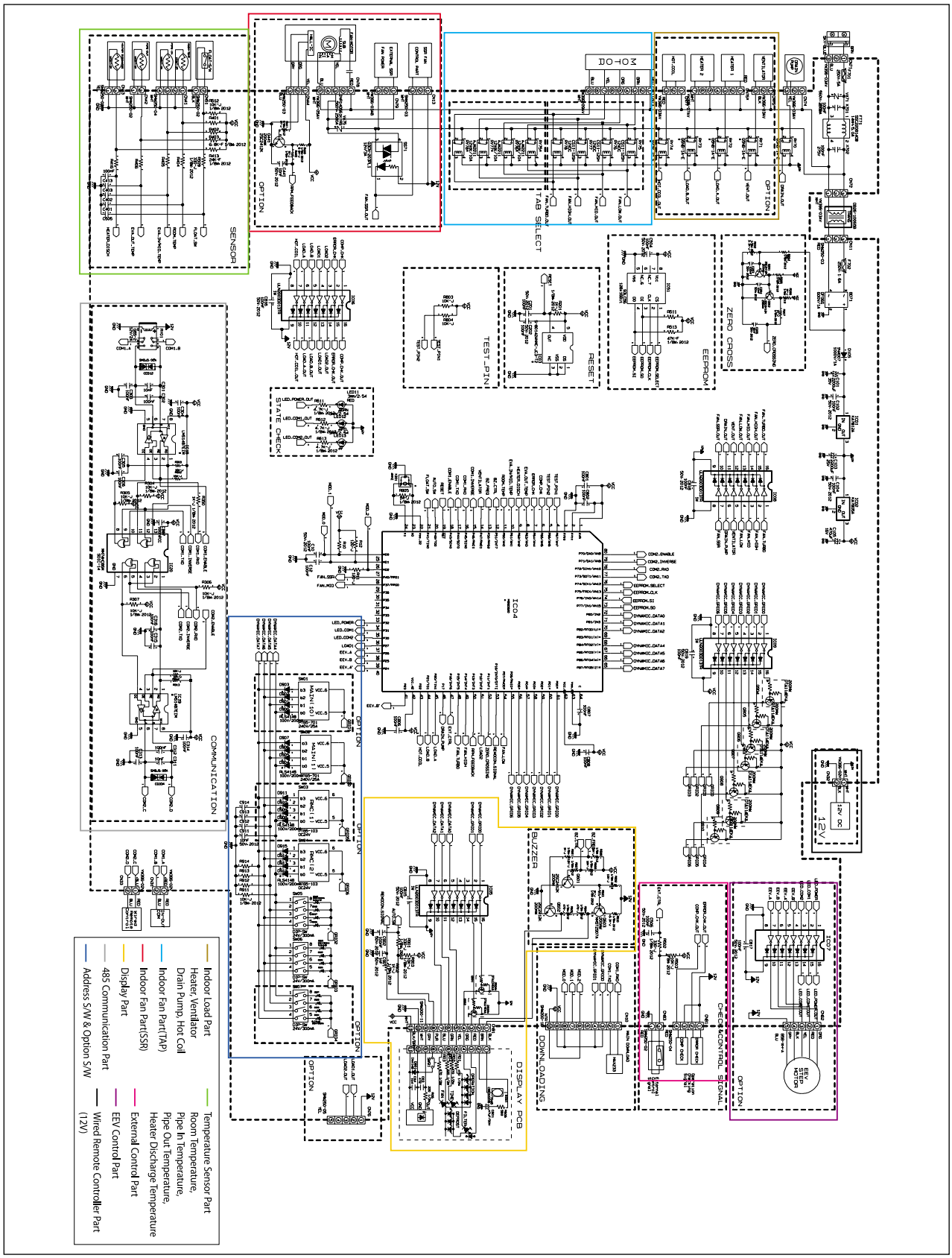
4-4. Slim duct

1) EH035EAV/EH052EAV/EH070EAV



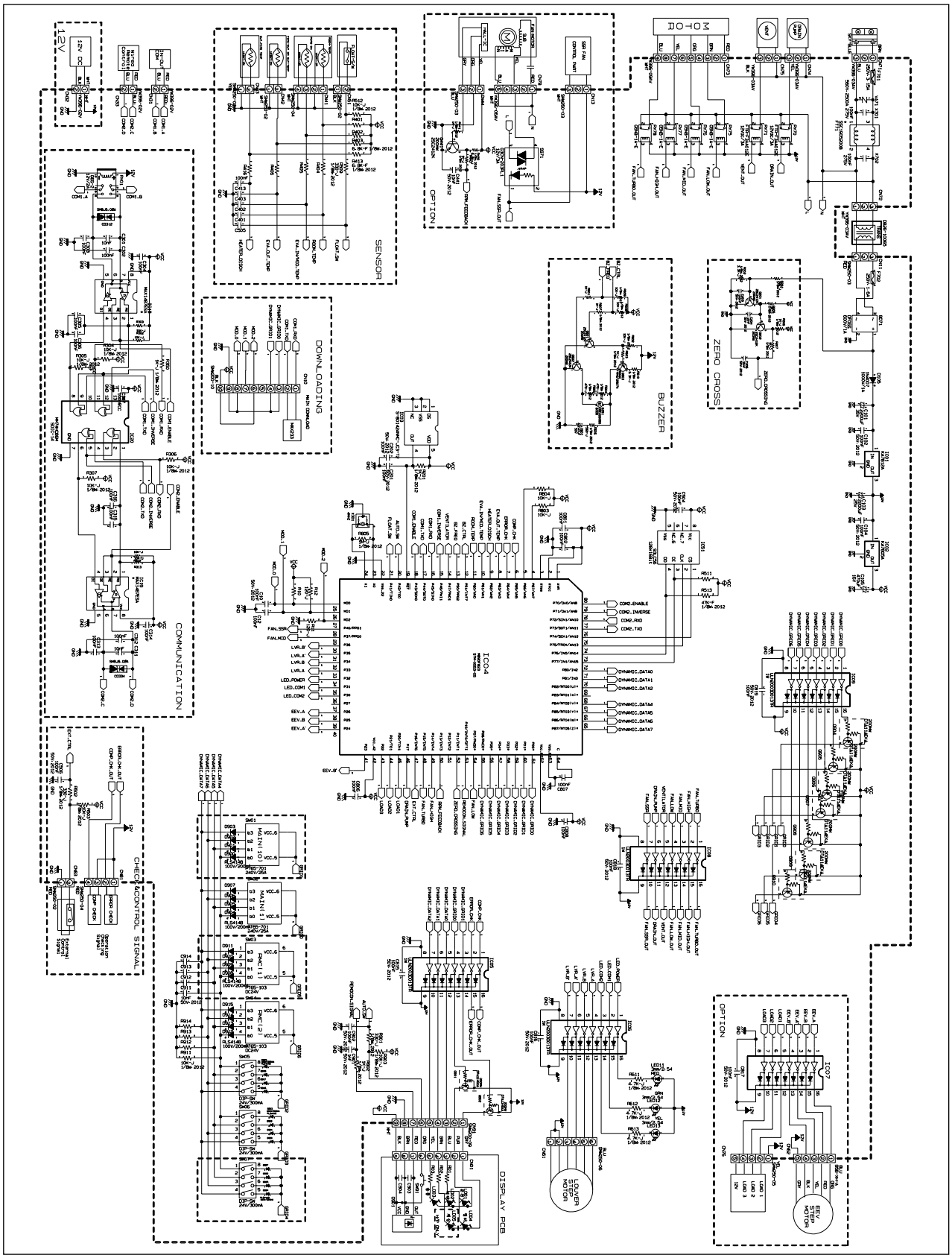
4-5. MSP duct

1) DH105EAV/DH140EAV



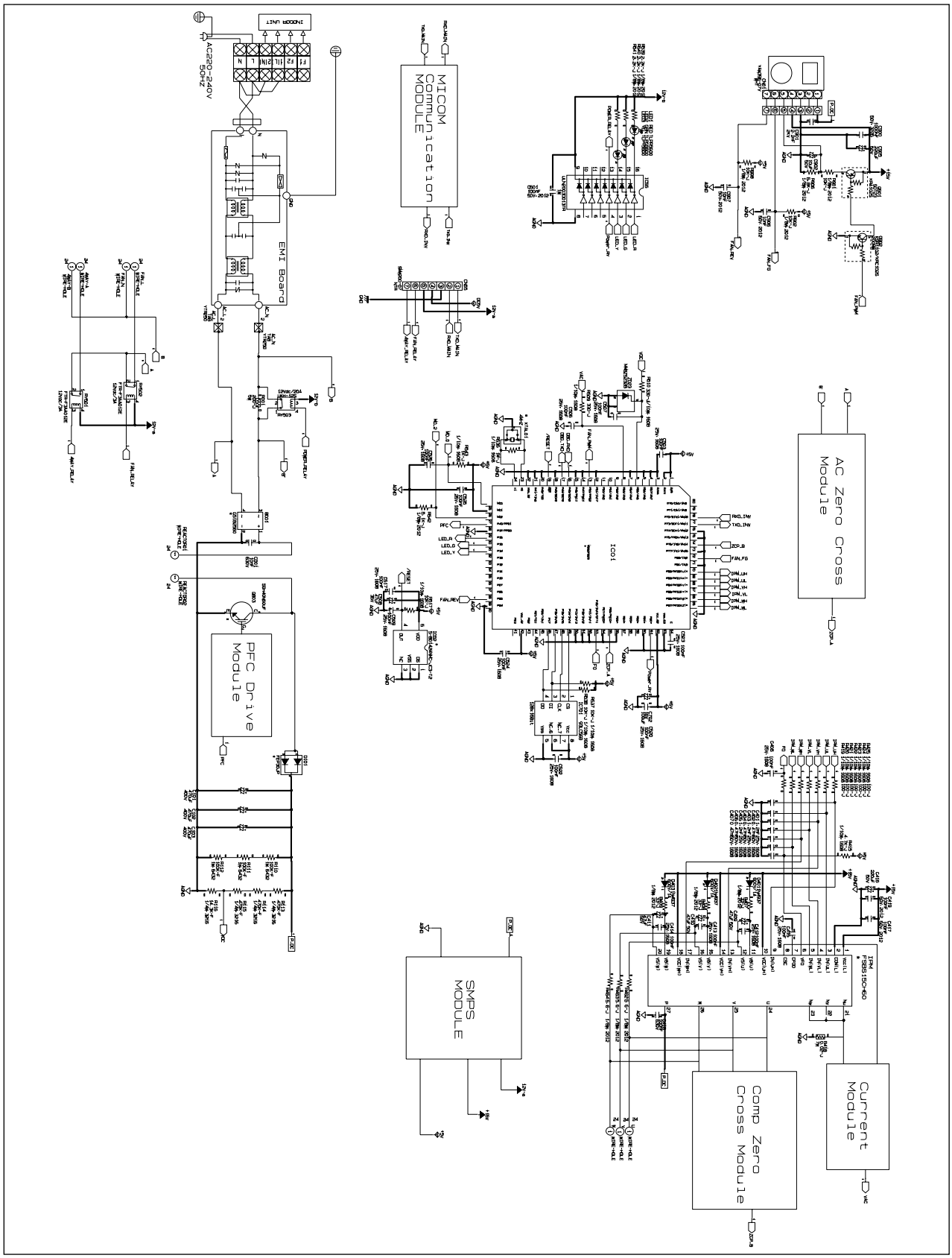
4-6. Ceiling

1) FH052EAV/FH070EAV

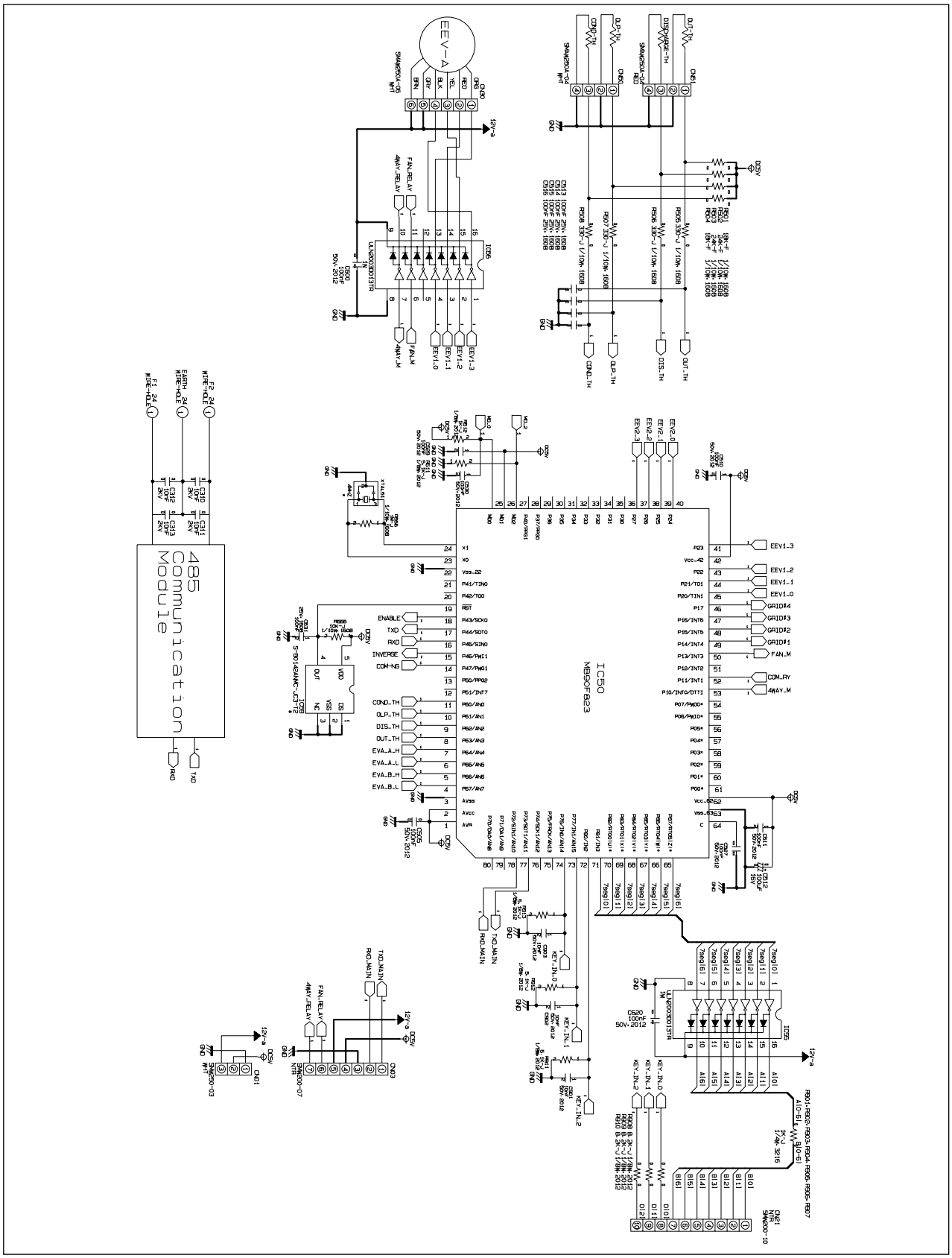


4-7. Outdoor unit

1) UH026EAV/UH035EAV (Inverter PCB)

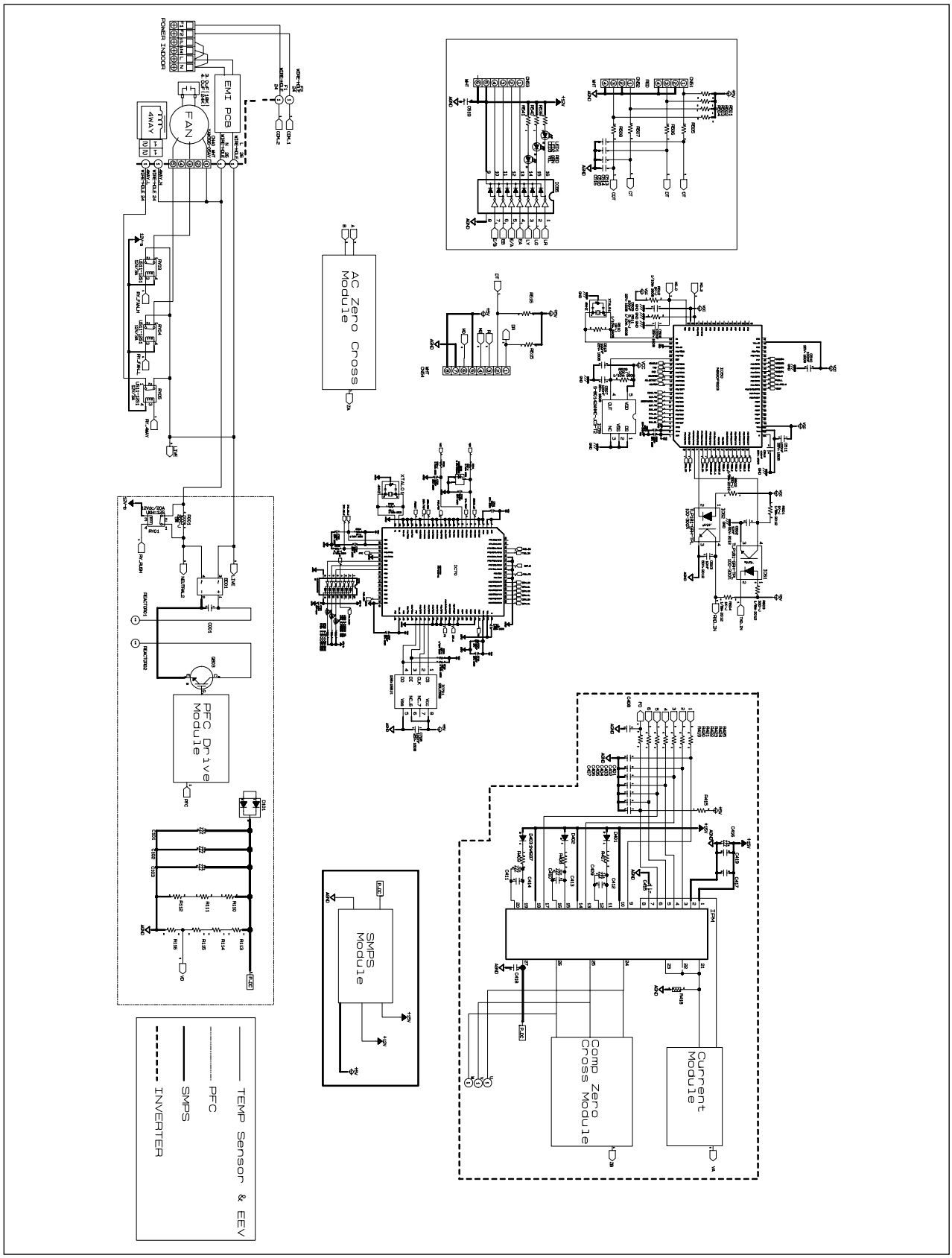


2) UH026EAV/UH035EAV (Main PCB)

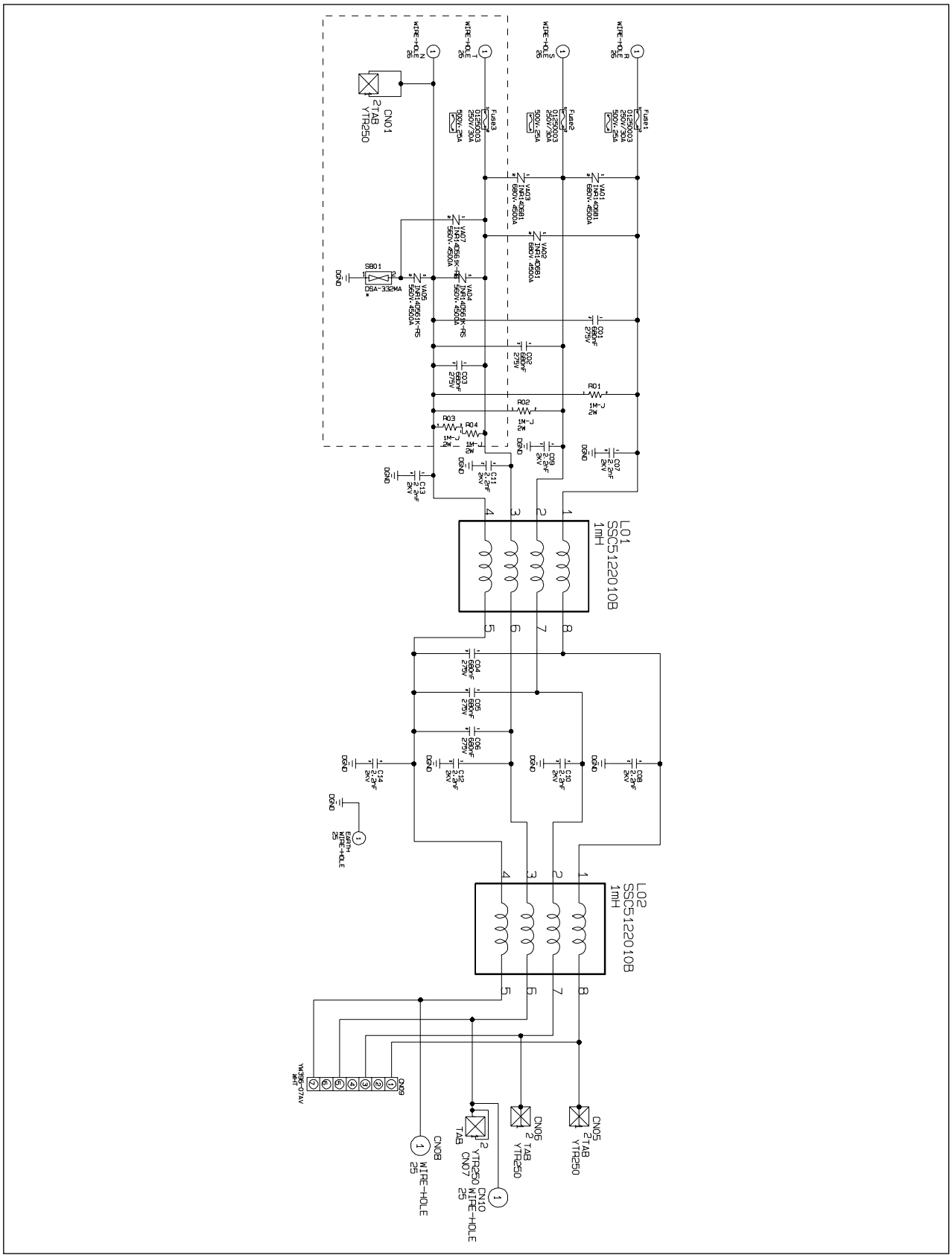


4-7. Outdoor unit

3) UH052EAV/UH060EAV/UH070EAV

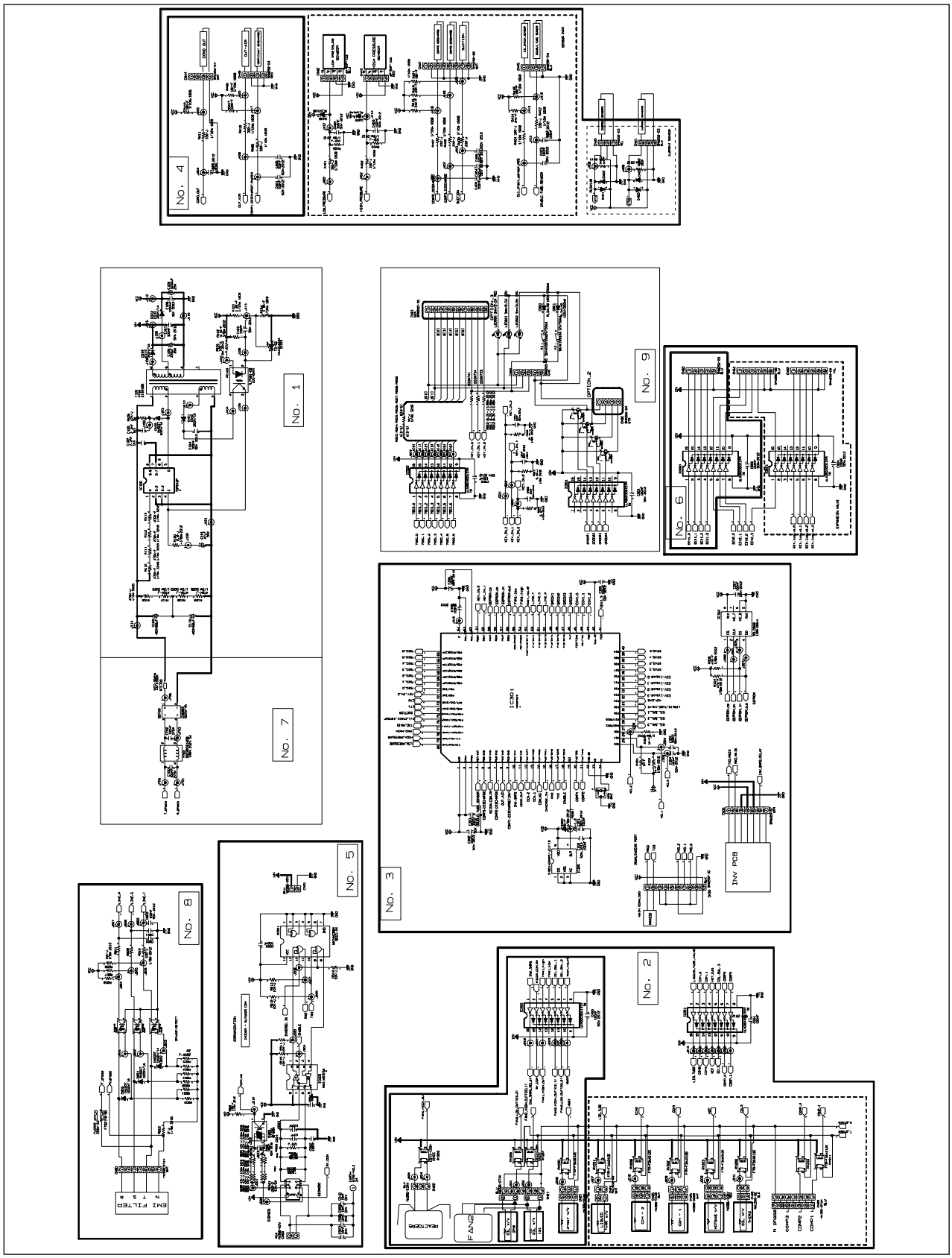


4) UH105GAV/UH140GAV (EMI PCB)

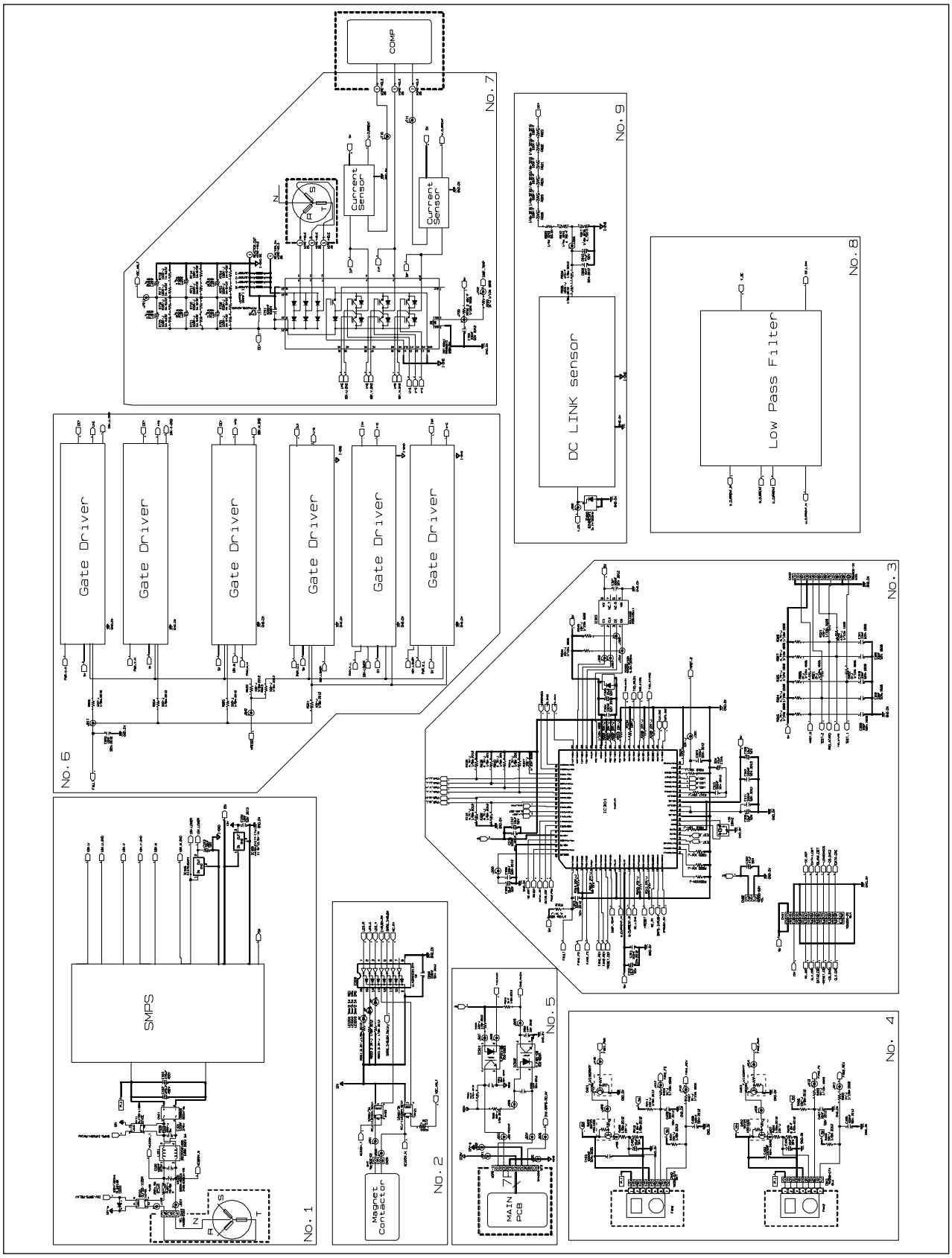


4-7. Outdoor unit

5) UH105GAV/UH140GAV (Main PCB)



6) UH105GAV/UH140GAV (Inverter PCB)



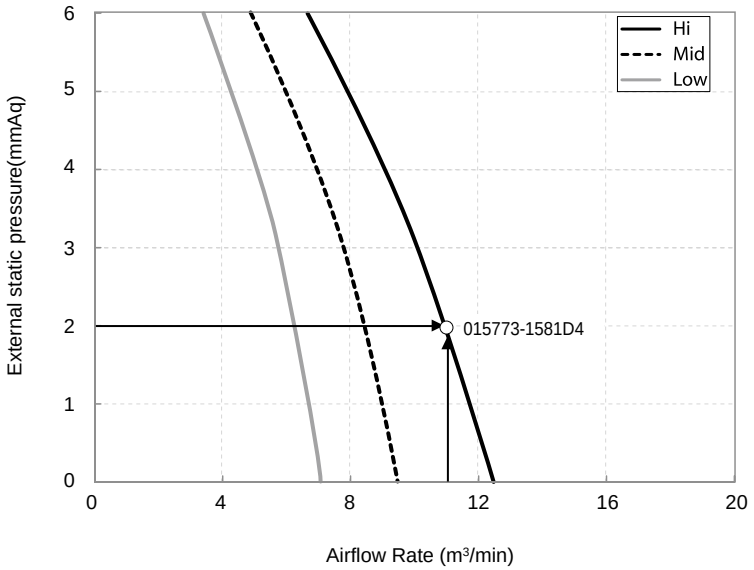
Technical Data Book

06 Performance Data

1. Graph of Air-Flow Rate vs External Static Pressure

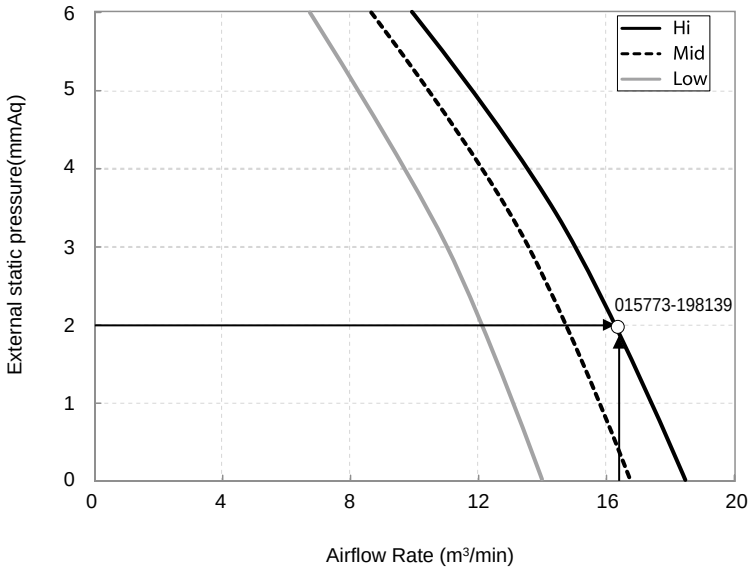
1-1. Duct Type

1) EH035EAV



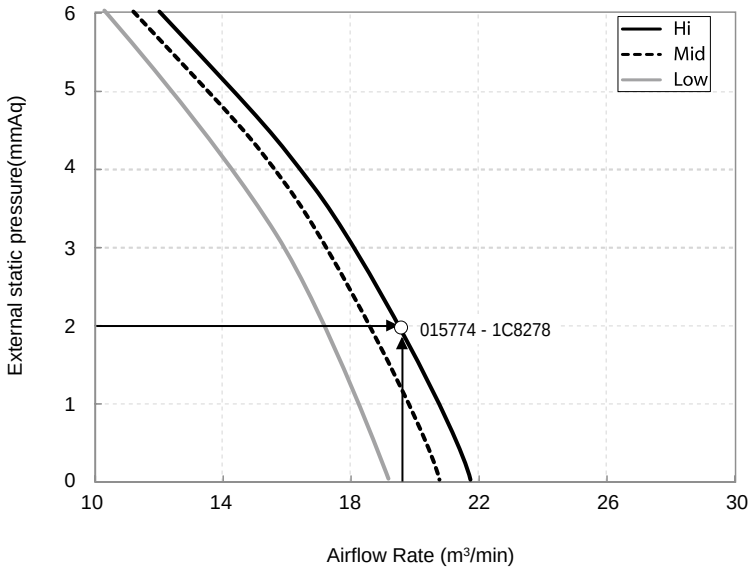
EXTERNAL STATIC PRESSURE(mmAq)	OPTION CODE
0	015773-15808D
2	015773-1581D4
4	015773-15835B

2) EH052EAV



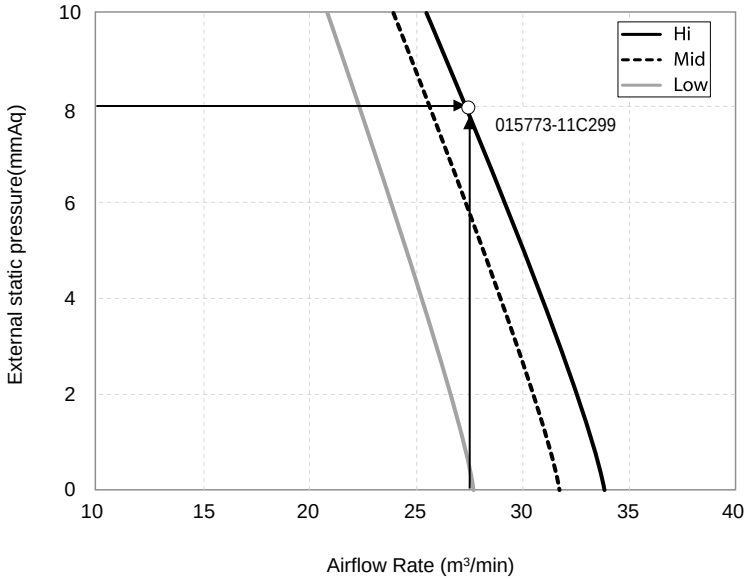
EXTERNAL STATIC PRESSURE(mmAq)	OPTION CODE
0	015771-1983E6
2	015773-198139
4	015773-1983CE

3) EH070EAV



EXTERNAL STATIC PRESSURE(mmAq)	OPTION CODE
0	015773 - 1C8178
2	015774 - 1C8278
4	015774 - 1C82FF

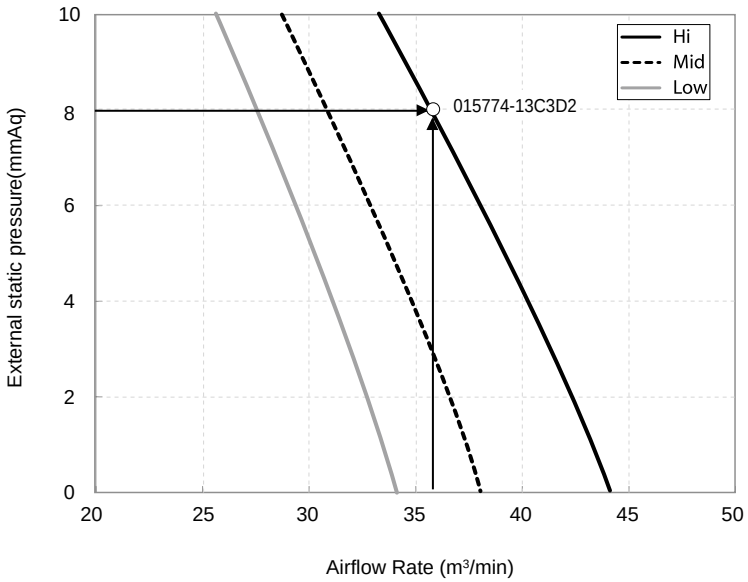
4) DH105EAV



EXTERNAL STATIC PRESSURE(mmAq)	OPTION CODE
0	015773-11C15F
2	015773-11C070
4	015773-11C092
6	015773-11C0E4
8	015773-11C299
10	015773-11C3F2

1. Graph of Air-Flow Rate vs External Static Pressure

5) DH140EAV



EXTERNAL STATIC PRESSURE(mmAq)	OPTION CODE
0	015774-13C25A
2	015774-13C26D
4	015774-13C27E
6	015774-13C391
8	015774-13C3D2
10	015774-13C3F5

2. Capacity/Power Consumption

2-1. 1 way cassette

1) KH026EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	2.60	1.88	0.52	2.54	1.86	0.58	2.42	1.80	0.64	2.37	1.78	0.66	2.30	1.74	0.68	2.18	1.68	0.74
16.0	22	2.79	1.88	0.54	2.66	1.83	0.58	2.54	1.77	0.64	2.50	1.75	0.66	2.42	1.72	0.70	2.30	1.67	0.74
18.0	25	2.90	1.98	0.54	2.79	1.92	0.59	2.66	1.86	0.64	2.61	1.84	0.66	2.54	1.81	0.70	2.42	1.76	0.74
19.0	27	2.96	2.08	0.54	2.84	2.03	0.59	2.72	1.98	0.64	2.67	1.95	0.66	2.60	1.92	0.70	2.48	1.87	0.75
22.0	30	3.14	2.00	0.55	3.03	1.95	0.59	2.90	1.91	0.65	2.85	1.89	0.67	2.78	1.86	0.70	2.66	1.82	0.75
24.0	32	3.27	1.94	0.55	3.14	1.90	0.61	3.02	1.86	0.65	2.97	1.85	0.67	2.90	1.82	0.71	2.78	1.78	0.75

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE (WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	2.14	0.94	2.94	1.03	3.12	1.11	3.25	1.03	3.39	0.89	3.69	0.93
18.0	2.30	0.95	2.87	1.04	3.06	1.15	3.21	1.04	3.35	0.90	3.64	0.93
20.0	2.39	0.96	2.80	1.06	3.01	1.17	3.16	1.04	3.30	0.92	3.60	0.94
21.0	2.44	0.96	2.78	1.06	2.98	1.17	3.13	1.06	3.28	0.92	3.57	0.95
22.0	2.59	0.96	2.74	1.06	2.95	1.19	3.10	1.06	3.25	0.92	3.55	0.95
24.0	2.69	0.98	2.68	1.07	2.90	1.20	3.06	1.07	3.21	0.93	3.50	0.96

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-1. 1 way cassette

2) KH035EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	3.50	2.53	0.81	3.42	2.51	0.91	3.26	2.42	1.00	3.19	2.40	1.04	3.09	2.34	1.07	2.94	2.26	1.16
16.0	22	3.75	2.53	0.84	3.58	2.47	0.91	3.42	2.38	1.00	3.36	2.36	1.04	3.26	2.31	1.09	3.09	2.25	1.16
18.0	25	3.91	2.66	0.84	3.75	2.59	0.93	3.58	2.51	1.00	3.51	2.48	1.04	3.42	2.44	1.09	3.26	2.37	1.16
19.0	27	3.99	2.80	0.84	3.82	2.73	0.93	3.67	2.66	1.00	3.60	2.63	1.04	3.50	2.59	1.09	3.33	2.52	1.18
22.0	30	4.23	2.69	0.86	4.07	2.63	0.93	3.91	2.58	1.02	3.84	2.55	1.05	3.74	2.51	1.09	3.58	2.45	1.18
24.0	32	4.40	2.62	0.86	4.23	2.56	0.95	4.06	2.51	1.02	4.00	2.49	1.05	3.91	2.45	1.11	3.74	2.40	1.18

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	2.60	1.20	3.56	1.32	3.78	1.42	3.94	1.32	4.11	1.14	4.47	1.18
18.0	2.79	1.21	3.47	1.34	3.71	1.48	3.89	1.33	4.06	1.16	4.41	1.18
20.0	2.90	1.23	3.40	1.35	3.65	1.50	3.83	1.33	4.00	1.17	4.36	1.20
21.0	2.96	1.23	3.36	1.35	3.61	1.50	3.80	1.35	3.98	1.17	4.33	1.21
22.0	3.14	1.23	3.32	1.35	3.58	1.52	3.76	1.35	3.94	1.17	4.31	1.21
24.0	3.26	1.25	3.25	1.37	3.51	1.54	3.71	1.37	3.89	1.18	4.25	1.23

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-2. 4 way cassette

1) CH070EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	7.10	5.14	1.62	6.93	5.09	1.83	6.62	4.92	2.00	6.48	4.86	2.07	6.28	4.75	2.14	5.96	4.58	2.32
16.0	22	7.61	5.14	1.69	7.27	5.00	1.83	6.93	4.83	2.00	6.82	4.78	2.07	6.62	4.70	2.18	6.28	4.56	2.32
18.0	25	7.92	5.39	1.69	7.61	5.25	1.86	7.27	5.09	2.00	7.13	5.03	2.07	6.93	4.95	2.18	6.62	4.81	2.32
19.0	27	8.09	5.67	1.69	7.75	5.53	1.86	7.44	5.39	2.00	7.30	5.34	2.07	7.10	5.25	2.18	6.76	5.11	2.36
22.0	30	8.58	5.45	1.72	8.26	5.34	1.86	7.92	5.23	2.04	7.78	5.17	2.11	7.58	5.09	2.18	7.27	4.97	2.36
24.0	32	8.92	5.31	1.72	8.58	5.20	1.90	8.24	5.09	2.04	8.12	5.06	2.11	7.92	4.97	2.22	7.58	4.86	2.36

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	5.20	2.55	7.13	2.80	7.56	3.02	7.89	2.80	8.21	2.43	8.94	2.52
18.0	5.57	2.58	6.95	2.84	7.42	3.14	7.78	2.84	8.12	2.46	8.82	2.52
20.0	5.80	2.62	6.79	2.88	7.30	3.19	7.65	2.84	8.00	2.49	8.73	2.55
21.0	5.92	2.62	6.73	2.88	7.22	3.19	7.60	2.87	7.95	2.49	8.66	2.58
22.0	6.28	2.62	6.63	2.88	7.16	3.23	7.52	2.87	7.88	2.49	8.61	2.58
24.0	6.53	2.66	6.51	2.92	7.02	3.27	7.42	2.91	7.79	2.52	8.49	2.61

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-2. 4 way cassette

2) CH105EAV/UH105GAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	-15			-10			21			35			45			50		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	14.0	11.88	8.14	2.79	11.85	8.15	2.86	10.22	7.38	3.02	9.11	7.19	3.34	7.69	6.30	3.91	6.98	5.82	4.19
16.0	16.0	12.73	8.14	2.91	12.43	8.01	2.86	10.70	7.25	3.02	9.59	7.09	3.34	8.10	6.23	3.96	7.34	5.78	4.19
18.0	18.0	13.26	8.55	2.91	13.01	8.42	2.92	11.23	7.63	3.02	10.03	7.45	3.34	8.49	6.55	3.96	7.74	6.11	4.19
19.0	19.0	13.54	9.00	2.91	13.26	8.87	2.92	11.49	8.10	3.02	10.27	7.91	3.34	8.69	6.96	3.96	7.91	6.48	4.27
22.0	22.0	14.35	8.64	2.98	14.13	8.56	2.92	12.23	7.85	3.06	10.95	7.66	3.39	9.29	6.73	3.96	8.50	6.30	4.27
24.0	24.0	14.92	8.41	2.98	14.67	8.33	2.97	12.72	7.63	3.06	11.43	7.49	3.39	9.70	6.58	4.04	8.87	6.16	4.27

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-20		-15		-5		2		7		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	9.97	5.00	10.50	4.59	10.93	4.27	11.06	3.93	11.29	3.16	14.29	3.62
18.0	9.59	5.06	10.23	4.67	10.72	4.46	10.93	3.97	11.17	3.20	14.10	3.62
20.0	9.04	5.15	9.99	4.71	10.56	4.50	10.74	3.97	11.00	3.24	13.95	3.66
21.0	8.85	5.15	9.91	4.71	10.43	4.50	10.67	4.04	10.93	3.24	13.82	3.70
22.0	8.51	5.15	9.78	4.71	10.35	4.56	10.56	4.04	10.84	3.24	13.75	3.70
24.0	7.94	5.20	9.58	4.79	10.14	4.63	10.41	4.08	10.71	3.28	13.56	3.75

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

3) CH140EAV/UH140GAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	-15			-10			21			35			45			50		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	12.84	9.19	3.61	13.58	9.62	4.13	14.01	9.83	4.69	12.65	8.83	5.69	10.63	8.08	5.46	8.65	7.30	5.27
16.0	22.0	13.77	9.19	3.77	14.25	9.46	4.13	14.67	9.66	4.69	13.32	8.70	5.69	11.21	7.98	5.53	9.10	7.26	5.27
18.0	25.0	14.33	9.65	3.77	14.92	9.94	4.23	15.39	10.17	4.69	13.93	9.14	5.69	11.74	8.39	5.53	9.59	7.67	5.27
19.0	27.0	14.64	10.16	3.77	15.20	10.48	4.23	15.75	10.80	4.69	14.26	9.71	5.69	12.03	8.93	5.53	9.80	8.14	5.37
22.0	30.0	15.51	9.75	3.86	16.20	10.10	4.23	16.77	10.46	4.76	15.20	9.40	5.77	12.85	8.64	5.53	10.54	7.91	5.37
24.0	32.0	16.13	9.50	3.86	16.81	9.84	4.29	17.43	10.17	4.76	15.87	9.19	5.77	13.43	8.44	5.64	10.99	7.73	5.37

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-20		-15		-5		2		7		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	12.01	5.98	12.44	6.06	13.74	5.54	14.13	5.82	18.08	6.31	19.77	5.33
18.0	11.54	6.05	12.12	6.16	13.47	5.78	13.96	5.88	17.87	6.39	19.51	5.33
20.0	10.88	6.16	11.84	6.22	13.28	5.84	13.72	5.88	17.61	6.47	19.30	5.39
21.0	10.66	6.16	11.75	6.22	13.11	5.84	13.62	5.97	17.49	6.47	19.12	5.45
22.0	10.24	6.16	11.58	6.22	13.01	5.92	13.48	5.97	17.35	6.47	19.03	5.45
24.0	9.56	6.23	11.35	6.32	12.75	6.01	13.29	6.04	17.14	6.55	18.77	5.52

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-3. Mini 4 way cassette

1) TH026EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	2.60	1.88	0.53	2.54	1.86	0.60	2.42	1.80	0.65	2.37	1.78	0.68	2.30	1.74	0.70	2.18	1.68	0.76
16.0	22	2.79	1.88	0.55	2.66	1.83	0.60	2.54	1.77	0.65	2.50	1.75	0.68	2.42	1.72	0.71	2.30	1.67	0.76
18.0	25	2.90	1.98	0.55	2.79	1.92	0.61	2.66	1.86	0.65	2.61	1.84	0.68	2.54	1.81	0.71	2.42	1.76	0.76
19.0	27	2.96	2.08	0.55	2.84	2.03	0.61	2.72	1.98	0.65	2.67	1.95	0.68	2.60	1.92	0.71	2.48	1.87	0.77
22.0	30	3.14	2.00	0.56	3.03	1.95	0.61	2.90	1.91	0.66	2.85	1.89	0.69	2.78	1.86	0.71	2.66	1.82	0.77
24.0	32	3.27	1.94	0.56	3.14	1.90	0.62	3.02	1.86	0.66	2.97	1.85	0.69	2.90	1.82	0.72	2.78	1.78	0.77

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	2.14	0.91	2.94	1.00	3.12	1.07	3.25	1.00	3.39	0.86	3.69	0.90
18.0	2.30	0.92	2.87	1.01	3.06	1.12	3.21	1.01	3.35	0.87	3.64	0.90
20.0	2.39	0.93	2.80	1.02	3.01	1.13	3.16	1.01	3.30	0.89	3.60	0.91
21.0	2.44	0.93	2.78	1.02	2.98	1.13	3.13	1.02	3.28	0.89	3.57	0.92
22.0	2.59	0.93	2.74	1.02	2.95	1.15	3.10	1.02	3.25	0.89	3.55	0.92
24.0	2.69	0.94	2.68	1.04	2.90	1.16	3.06	1.03	3.21	0.90	3.50	0.93

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2) TH035EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	3.50	2.53	0.81	3.42	2.51	0.91	3.26	2.42	1.00	3.19	2.40	1.04	3.09	2.34	1.07	2.94	2.26	1.16
16.0	22	3.75	2.53	0.84	3.58	2.47	0.91	3.42	2.38	1.00	3.36	2.36	1.04	3.26	2.31	1.09	3.09	2.25	1.16
18.0	25	3.91	2.66	0.84	3.75	2.59	0.93	3.58	2.51	1.00	3.51	2.48	1.04	3.42	2.44	1.09	3.26	2.37	1.16
19.0	27	3.99	2.80	0.84	3.82	2.73	0.93	3.67	2.66	1.00	3.60	2.63	1.04	3.50	2.59	1.09	3.33	2.52	1.18
22.0	30	4.23	2.69	0.86	4.07	2.63	0.93	3.91	2.58	1.02	3.84	2.55	1.05	3.74	2.51	1.09	3.58	2.45	1.18
24.0	32	4.40	2.62	0.86	4.23	2.56	0.95	4.06	2.51	1.02	4.00	2.49	1.05	3.91	2.45	1.11	3.74	2.40	1.18

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	2.60	1.13	3.56	1.24	3.78	1.34	3.94	1.24	4.11	1.08	4.47	1.12
18.0	2.79	1.15	3.47	1.26	3.71	1.39	3.89	1.26	4.06	1.09	4.41	1.12
20.0	2.90	1.16	3.40	1.28	3.65	1.41	3.83	1.26	4.00	1.11	4.36	1.13
21.0	2.96	1.16	3.36	1.28	3.61	1.41	3.80	1.28	3.98	1.11	4.33	1.14
22.0	3.14	1.16	3.32	1.28	3.58	1.43	3.76	1.28	3.94	1.11	4.31	1.14
24.0	3.26	1.18	3.25	1.30	3.51	1.45	3.71	1.29	3.89	1.12	4.25	1.16

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-3. Mini 4 way cassette

3) TH052EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	4.70	3.40	1.12	4.59	3.37	1.27	4.38	3.26	1.39	4.29	3.22	1.44	4.15	3.15	1.49	3.95	3.03	1.61
16.0	22	5.04	3.40	1.17	4.81	3.31	1.27	4.59	3.20	1.39	4.51	3.16	1.44	4.38	3.11	1.51	4.15	3.02	1.61
18.0	25	5.25	3.57	1.17	5.04	3.48	1.29	4.81	3.37	1.39	4.72	3.33	1.44	4.59	3.27	1.51	4.38	3.18	1.61
19.0	27	5.36	3.76	1.17	5.13	3.66	1.29	4.93	3.57	1.39	4.83	3.53	1.44	4.70	3.48	1.51	4.47	3.39	1.63
22.0	30	5.68	3.61	1.19	5.47	3.53	1.29	5.25	3.46	1.41	5.15	3.42	1.46	5.02	3.37	1.51	4.81	3.29	1.63
24.0	32	5.90	3.52	1.19	5.68	3.44	1.32	5.45	3.37	1.41	5.38	3.35	1.46	5.25	3.29	1.53	5.02	3.22	1.63

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	3.57	1.70	4.90	1.87	5.20	2.01	5.42	1.87	5.65	1.62	6.15	1.68
18.0	3.83	1.72	4.78	1.90	5.10	2.10	5.35	1.89	5.58	1.64	6.07	1.68
20.0	3.99	1.75	4.67	1.92	5.02	2.12	5.26	1.89	5.50	1.66	6.00	1.70
21.0	4.07	1.75	4.63	1.92	4.96	2.12	5.22	1.92	5.47	1.66	5.95	1.72
22.0	4.32	1.75	4.56	1.92	4.92	2.15	5.17	1.92	5.42	1.66	5.92	1.72
24.0	4.49	1.77	4.47	1.95	4.83	2.18	5.10	1.94	5.35	1.68	5.84	1.74

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

4) TH060EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.80	4.20	1.42	5.66	4.16	1.61	5.41	4.02	1.77	5.29	3.97	1.83	5.13	3.88	1.89	4.87	3.74	2.04
16.0	22	6.22	4.20	1.49	5.94	4.09	1.61	5.66	3.95	1.77	5.57	3.90	1.83	5.41	3.84	1.92	5.13	3.72	2.04
18.0	25	6.47	4.41	1.49	6.22	4.29	1.64	5.94	4.16	1.77	5.82	4.11	1.83	5.66	4.04	1.92	5.41	3.93	2.04
19.0	27	6.61	4.63	1.49	6.33	4.52	1.64	6.08	4.41	1.77	5.96	4.36	1.83	5.80	4.29	1.92	5.52	4.18	2.07
22.0	30	7.01	4.45	1.52	6.75	4.36	1.64	6.47	4.27	1.80	6.36	4.22	1.86	6.19	4.16	1.92	5.94	4.06	2.07
24.0	32	7.28	4.34	1.52	7.01	4.25	1.67	6.73	4.16	1.80	6.64	4.13	1.86	6.47	4.06	1.95	6.19	3.97	2.07

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	4.55	2.23	6.24	2.45	6.62	2.64	6.90	2.45	7.19	2.13	7.82	2.21
18.0	4.87	2.26	6.08	2.49	6.49	2.75	6.81	2.48	7.10	2.15	7.72	2.21
20.0	5.08	2.29	5.94	2.52	6.39	2.79	6.70	2.48	7.00	2.18	7.64	2.23
21.0	5.18	2.29	5.89	2.52	6.32	2.79	6.65	2.52	6.96	2.18	7.58	2.26
22.0	5.49	2.29	5.80	2.52	6.27	2.83	6.58	2.52	6.90	2.18	7.54	2.26
24.0	5.71	2.33	5.69	2.56	6.14	2.86	6.49	2.55	6.81	2.21	7.43	2.29

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-4. Slim duct

1) EH035EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	3.50	2.53	0.79	3.42	2.51	0.89	3.26	2.42	0.97	3.19	2.40	1.01	3.09	2.34	1.04	2.94	2.26	1.13
16.0	22	3.75	2.53	0.82	3.58	2.47	0.89	3.42	2.38	0.97	3.36	2.36	1.01	3.26	2.31	1.06	3.09	2.25	1.13
18.0	25	3.91	2.66	0.82	3.75	2.59	0.91	3.58	2.51	0.97	3.51	2.48	1.01	3.42	2.44	1.06	3.26	2.37	1.13
19.0	27	3.99	2.80	0.82	3.82	2.73	0.91	3.67	2.66	0.97	3.60	2.63	1.01	3.50	2.59	1.06	3.33	2.52	1.15
22.0	30	4.23	2.69	0.84	4.07	2.63	0.91	3.91	2.58	0.99	3.84	2.55	1.03	3.74	2.51	1.06	3.58	2.45	1.15
24.0	32	4.40	2.62	0.84	4.23	2.56	0.92	4.06	2.51	0.99	4.00	2.49	1.03	3.91	2.45	1.08	3.74	2.40	1.15

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	2.60	1.11	3.56	1.22	3.78	1.31	3.94	1.22	4.11	1.05	4.47	1.09
18.0	2.79	1.12	3.47	1.23	3.71	1.36	3.89	1.23	4.06	1.07	4.41	1.09
20.0	2.90	1.14	3.40	1.25	3.65	1.38	3.83	1.23	4.00	1.08	4.36	1.11
21.0	2.96	1.14	3.36	1.25	3.61	1.38	3.80	1.25	3.98	1.08	4.33	1.12
22.0	3.14	1.14	3.32	1.25	3.58	1.40	3.76	1.25	3.94	1.08	4.31	1.12
24.0	3.26	1.15	3.25	1.27	3.51	1.42	3.71	1.26	3.89	1.09	4.25	1.13

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2) EH052EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.00	3.62	1.15	4.88	3.58	1.30	4.66	3.46	1.43	4.56	3.42	1.48	4.42	3.35	1.53	4.20	3.23	1.65
16.0	22	5.36	3.62	1.20	5.12	3.52	1.30	4.88	3.40	1.43	4.80	3.37	1.48	4.66	3.31	1.55	4.42	3.21	1.65
18.0	25	5.58	3.80	1.20	5.36	3.70	1.33	5.12	3.58	1.43	5.02	3.54	1.48	4.88	3.48	1.55	4.66	3.39	1.65
19.0	27	5.70	4.00	1.20	5.46	3.90	1.33	5.24	3.80	1.43	5.14	3.76	1.48	5.00	3.70	1.55	4.76	3.60	1.68
22.0	30	6.04	3.84	1.23	5.82	3.76	1.33	5.58	3.68	1.45	5.48	3.64	1.50	5.34	3.58	1.55	5.12	3.50	1.68
24.0	32	6.28	3.74	1.23	6.04	3.66	1.35	5.80	3.58	1.45	5.72	3.56	1.50	5.58	3.50	1.58	5.34	3.42	1.68

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	3.90	1.70	5.35	1.87	5.67	2.01	5.91	1.87	6.16	1.62	6.71	1.68
18.0	4.18	1.72	5.21	1.90	5.56	2.10	5.84	1.89	6.09	1.64	6.62	1.68
20.0	4.35	1.75	5.09	1.92	5.48	2.12	5.74	1.89	6.00	1.66	6.55	1.70
21.0	4.44	1.75	5.05	1.92	5.41	2.12	5.70	1.92	5.96	1.66	6.49	1.72
22.0	4.71	1.75	4.98	1.92	5.37	2.15	5.64	1.92	5.91	1.66	6.46	1.72
24.0	4.90	1.77	4.88	1.95	5.26	2.18	5.56	1.94	5.84	1.68	6.37	1.74

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-4. Slim duct

3) EH070EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	7.10	5.14	1.69	6.93	5.09	1.91	6.62	4.92	2.10	6.48	4.86	2.17	6.28	4.75	2.24	5.96	4.58	2.43
16.0	22	7.61	5.14	1.77	7.27	5.00	1.91	6.93	4.83	2.10	6.82	4.78	2.17	6.62	4.70	2.28	6.28	4.56	2.43
18.0	25	7.92	5.39	1.77	7.61	5.25	1.95	7.27	5.09	2.10	7.13	5.03	2.17	6.93	4.95	2.28	6.62	4.81	2.43
19.0	27	8.09	5.67	1.77	7.75	5.53	1.95	7.44	5.39	2.10	7.30	5.34	2.17	7.10	5.25	2.28	6.76	5.11	2.46
22.0	30	8.58	5.45	1.80	8.26	5.34	1.95	7.92	5.23	2.13	7.78	5.17	2.21	7.58	5.09	2.28	7.27	4.97	2.46
24.0	32	8.92	5.31	1.80	8.58	5.20	1.99	8.24	5.09	2.13	8.12	5.06	2.21	7.92	4.97	2.32	7.58	4.86	2.46

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	5.20	2.21	7.13	2.43	7.56	2.62	7.89	2.43	8.21	2.11	8.94	2.19
18.0	5.57	2.24	6.95	2.47	7.42	2.73	7.78	2.46	8.12	2.13	8.82	2.19
20.0	5.80	2.27	6.79	2.50	7.30	2.76	7.65	2.46	8.00	2.16	8.73	2.21
21.0	5.92	2.27	6.73	2.50	7.22	2.76	7.60	2.49	7.95	2.16	8.66	2.24
22.0	6.28	2.27	6.63	2.50	7.16	2.80	7.52	2.49	7.88	2.16	8.61	2.24
24.0	6.53	2.31	6.51	2.54	7.02	2.84	7.42	2.52	7.79	2.19	8.49	2.26

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-5. MSP duct

1) DH105EAV/UH105GAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	-15			-10			21			35			45			50		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	8.86	7.13	3.48	9.27	7.35	3.46	10.71	8.00	2.97	9.21	7.27	3.32	7.85	6.74	4.02	7.17	6.44	4.38
16.0	22.0	9.50	7.13	3.63	9.73	7.23	3.46	11.22	7.86	2.97	9.69	7.17	3.32	8.27	6.66	4.08	7.54	6.40	4.38
18.0	25.0	9.89	7.49	3.63	10.18	7.60	3.54	11.77	8.28	2.97	10.14	7.53	3.32	8.66	7.00	4.08	7.95	6.75	4.38
19.0	27.0	10.10	7.88	3.63	10.37	8.01	3.54	12.05	8.79	2.97	10.38	7.99	3.32	8.88	7.45	4.08	8.12	7.17	4.46
22.0	30.0	10.71	7.57	3.72	11.06	7.72	3.54	12.83	8.51	3.01	11.07	7.74	3.36	9.48	7.21	4.08	8.74	6.97	4.46
24.0	32.0	11.31	7.37	3.72	11.47	7.52	3.59	13.33	8.28	3.01	11.55	7.57	3.36	9.91	7.04	4.15	9.11	6.81	4.46

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-20		-15		-5		2		7		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	9.65	4.89	10.53	4.70	11.12	4.48	11.06	4.05	11.01	3.13	14.69	3.54
18.0	9.28	4.95	10.26	4.78	10.91	4.68	10.93	4.09	10.89	3.17	14.49	3.54
20.0	8.74	5.04	10.02	4.83	10.75	4.73	10.74	4.09	10.73	3.21	14.34	3.59
21.0	8.57	5.04	9.94	4.83	10.61	4.73	10.67	4.16	10.65	3.21	14.21	3.63
22.0	8.23	5.04	9.81	4.83	10.53	4.79	10.55	4.16	10.57	3.21	14.14	3.63
24.0	7.68	5.10	9.61	4.91	10.32	4.86	10.40	4.20	10.44	3.25	13.95	3.67

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-5. MSP duct

2) DH140EAV/UH140GAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	-15			-10			21			35			45			50		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20.0	14.89	10.78	3.78	14.71	10.76	4.06	14.17	10.51	4.37	12.62	9.70	5.51	10.08	8.61	5.36	7.57	7.50	5.26
16.0	22.0	15.97	10.78	3.94	15.43	10.58	4.06	14.84	10.33	4.37	13.29	9.55	5.51	10.63	8.51	5.44	7.97	7.45	5.26
18.0	25.0	16.62	11.31	3.94	16.15	11.12	4.16	15.57	10.87	4.37	13.90	10.04	5.51	11.13	8.94	5.44	8.40	7.87	5.26
19.0	27.0	16.98	11.91	3.94	16.46	11.73	4.16	15.93	11.54	4.37	14.23	10.66	5.51	11.41	9.51	5.44	8.58	8.36	5.36
22.0	30.0	17.99	11.43	4.04	17.54	11.30	4.16	16.96	11.18	4.43	15.17	10.32	5.58	12.18	9.20	5.44	9.23	8.13	5.36
24.0	32.0	18.71	11.14	4.04	18.20	11.00	4.22	17.63	10.87	4.43	15.84	10.09	5.58	12.73	9.00	5.54	9.63	7.94	5.36

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-20		-15		-5		2		7		24	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	12.89	5.94	13.80	6.45	14.23	5.26	14.37	5.42	19.02	6.06	19.84	4.83
18.0	12.39	6.01	13.44	6.55	13.95	5.50	14.20	5.48	18.81	6.14	19.58	4.83
20.0	11.68	6.11	13.13	6.62	13.75	5.55	13.96	5.48	18.53	6.21	19.37	4.89
21.0	11.44	6.11	13.03	6.62	13.57	5.55	13.86	5.57	18.41	6.21	19.19	4.95
22.0	10.99	6.11	12.85	6.62	13.47	5.63	13.72	5.57	18.25	6.21	19.10	4.95
24.0	10.26	6.18	12.59	6.72	13.20	5.71	13.52	5.62	18.04	6.28	18.84	5.01

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-6. Ceiling

1) FH052EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	5.00	3.62	1.31	4.88	3.58	1.48	4.66	3.46	1.63	4.56	3.42	1.68	4.42	3.35	1.74	4.20	3.23	1.88
16.0	22	5.36	3.62	1.37	5.12	3.52	1.48	4.88	3.40	1.63	4.80	3.37	1.68	4.66	3.31	1.77	4.42	3.21	1.88
18.0	25	5.58	3.80	1.37	5.36	3.70	1.51	5.12	3.58	1.63	5.02	3.54	1.68	4.88	3.48	1.77	4.66	3.39	1.88
19.0	27	5.70	4.00	1.37	5.46	3.90	1.51	5.24	3.80	1.63	5.14	3.76	1.68	5.00	3.70	1.77	4.76	3.60	1.91
22.0	30	6.04	3.84	1.40	5.82	3.76	1.51	5.58	3.68	1.66	5.48	3.64	1.71	5.34	3.58	1.77	5.12	3.50	1.91
24.0	32	6.28	3.74	1.40	6.04	3.66	1.54	5.80	3.58	1.66	5.72	3.56	1.71	5.58	3.50	1.80	5.34	3.42	1.91

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	3.90	1.90	5.35	2.09	5.67	2.25	5.91	2.09	6.16	1.82	6.71	1.88
18.0	4.18	1.93	5.21	2.12	5.56	2.35	5.84	2.12	6.09	1.84	6.62	1.88
20.0	4.35	1.96	5.09	2.15	5.48	2.38	5.74	2.12	6.00	1.86	6.55	1.90
21.0	4.44	1.96	5.05	2.15	5.41	2.38	5.70	2.15	5.96	1.86	6.49	1.93
22.0	4.71	1.96	4.98	2.15	5.37	2.41	5.64	2.15	5.91	1.86	6.46	1.93
24.0	4.90	1.99	4.88	2.18	5.26	2.44	5.56	2.17	5.84	1.88	6.37	1.95

Note

1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

2-6. Ceiling

2) FH070EAV

(1) Cooling Capacity

Unit : °C

INDOOR		OUTDOOR TEMPERATURE(DB)																	
EWB	EDB	20			25			30			32			35			40		
		TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI	TC	SHC	PI
14.0	20	7.10	5.14	1.87	6.93	5.09	2.11	6.62	4.92	2.32	6.48	4.86	2.40	6.28	4.75	2.48	5.96	4.58	2.68
16.0	22	7.61	5.14	1.95	7.27	5.00	2.11	6.93	4.83	2.32	6.82	4.78	2.40	6.62	4.70	2.52	6.28	4.56	2.68
18.0	25	7.92	5.39	1.95	7.61	5.25	2.15	7.27	5.09	2.32	7.13	5.03	2.40	6.93	4.95	2.52	6.62	4.81	2.68
19.0	27	8.09	5.67	1.95	7.75	5.53	2.15	7.44	5.39	2.32	7.30	5.34	2.40	7.10	5.25	2.52	6.76	5.11	2.72
22.0	30	8.58	5.45	1.99	8.26	5.34	2.15	7.92	5.23	2.36	7.78	5.17	2.44	7.58	5.09	2.52	7.27	4.97	2.72
24.0	32	8.92	5.31	1.99	8.58	5.20	2.19	8.24	5.09	2.36	8.12	5.06	2.44	7.92	4.97	2.56	7.58	4.86	2.72

(2) Heating Capacity

Unit : °C

INDOOR	OUTDOOR TEMPERATURE(WB)											
EDB	-15		-10		-5		0		6		10	
	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI	TC	PI
16.0	5.20	2.91	7.13	3.20	7.56	3.44	7.89	3.20	8.21	2.77	8.94	2.87
18.0	5.57	2.95	6.95	3.24	7.42	3.58	7.78	3.24	8.12	2.81	8.82	2.87
20.0	5.80	2.99	6.79	3.29	7.30	3.63	7.65	3.24	8.00	2.84	8.73	2.91
21.0	5.92	2.99	6.73	3.29	7.22	3.63	7.60	3.28	7.95	2.84	8.66	2.94
22.0	6.28	2.99	6.63	3.29	7.16	3.68	7.52	3.28	7.88	2.84	8.61	2.94
24.0	6.53	3.03	6.51	3.33	7.02	3.73	7.42	3.32	7.79	2.87	8.49	2.98

Note

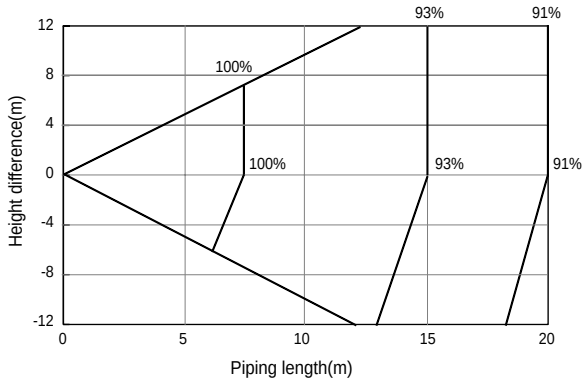
1. All capacities are net, indoor motor heat is deducted.
2. DB : Dry Bulb temperature (°C),
   WB : Wet Bulb temperature (°C)
3. TC : Total cooling/heating Capacity (kW)
   Corresponding refrigerant piping length : 7.5m
   Level difference : 0m
4. SHC : Sensible Heat Capacity (kW)
5. PI : Power Input (Comp+indoor fan motor+outdoor fan motor+PCB/kW)

3. Piping Correction

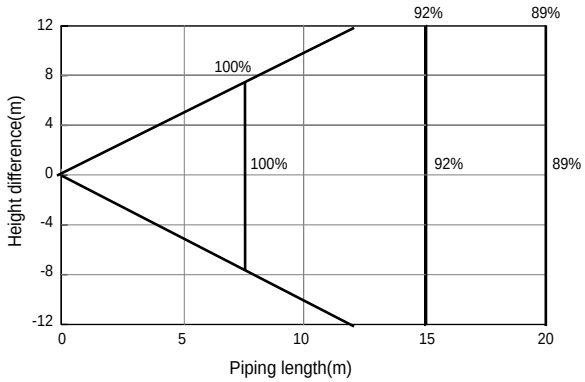
3-1. Capacity Correction

1) ✳H026/035EAV

Cooling

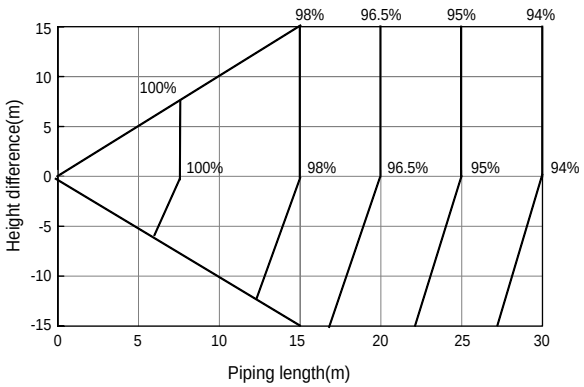


Heating

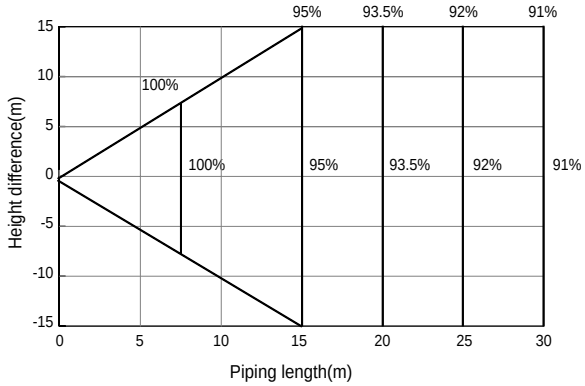


2) ✳H052EAV

Cooling



Heating

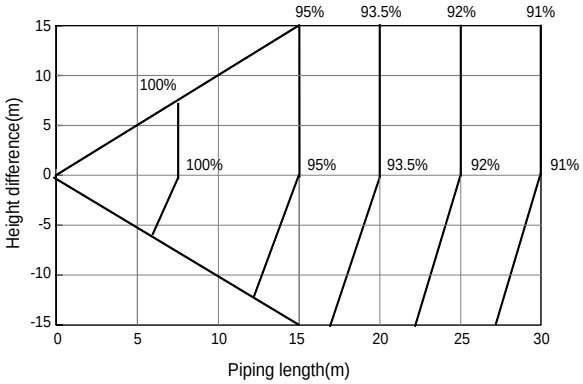


3. Piping Correcting

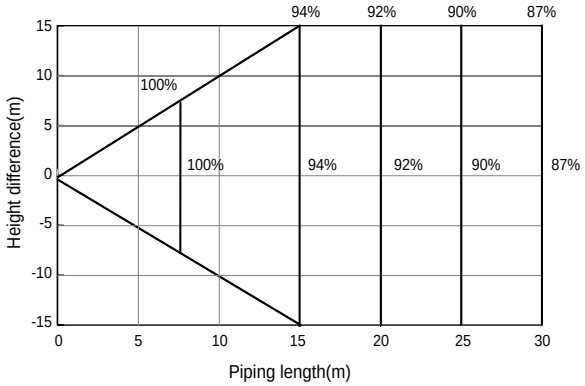
3-1. Capacity Correction

3) ✳H060EAV

Cooling

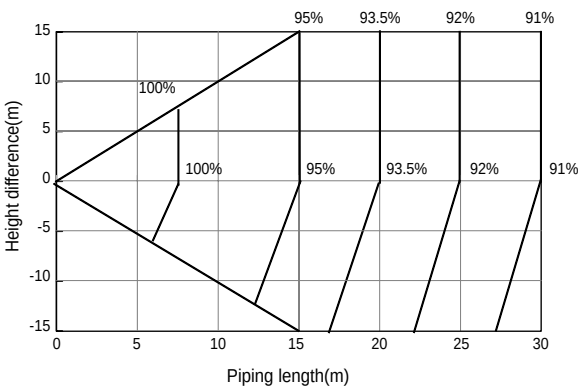


Heating

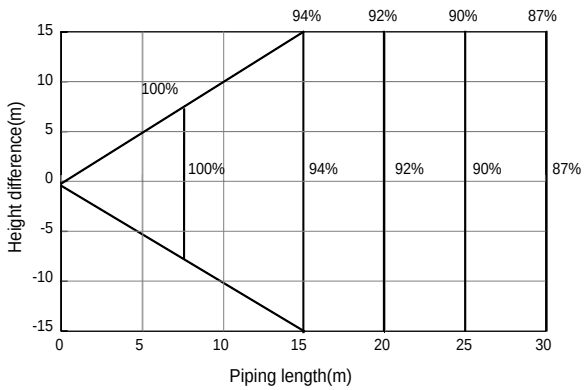


4) ✳H070EAV

Cooling

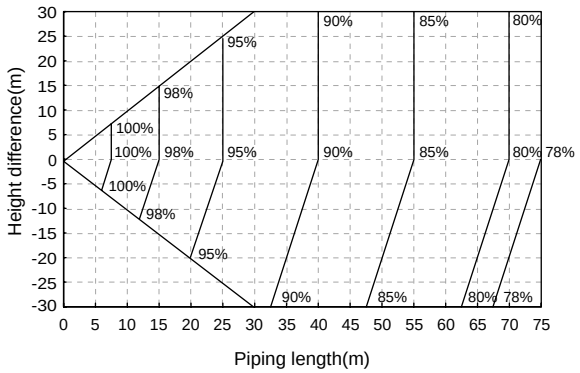


Heating

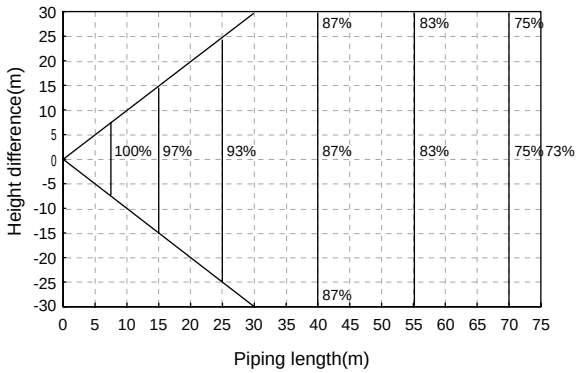


5) ✳H105/140EAV

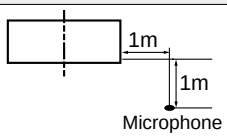
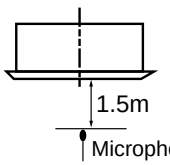
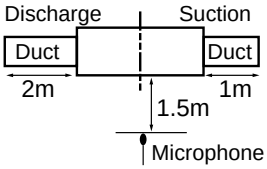
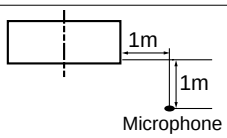
Cooling



Heating

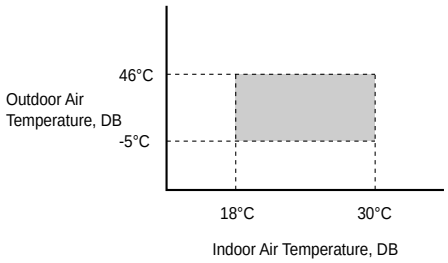
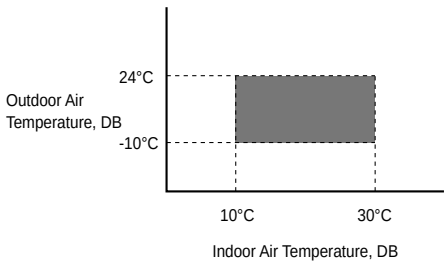


4. Sound(Pressure/Power)

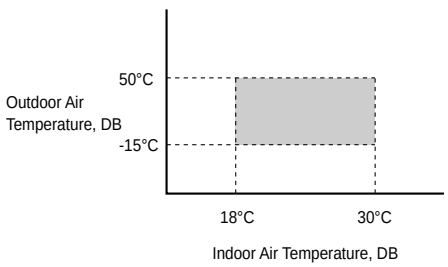
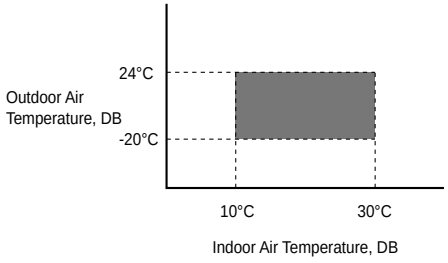
TYPE		MEASURING IOCATION	INDOOR UNIT MODEL	OUTDOOR UNIT MODEL	INDOOR UNIT				OUTDOOR UNIT	
					Sound Pressure Level		Sound Power Level		Sound Pressure Level	Sound Power Level
					Hi	Low	Hi	Low	Cooling/Heating	Cooling/Heating
Cassette	1 way		KH026EAV	UH026EAV	30	27	43	39	47	60
			KH035EAV	UH035EAV	32	28	45	39	47	60
	4 way		CH070EAV	UH070EAV	36	30	49	38	52	65
			CH105EAV	UH105GAV	40	33	53	40	56	69
			CH140EAV	UH140GAV	45	38	58	46	59	72
	Mini 4 way		TH026EAV	UH026EAV	30	25	43	38	47	60
			TH035EAV	UH035EAV	34	27	47	40	47	60
			TH052EAV	UH052EAV	41	33	54	46	49	62
			TH060EAV	UH060EAV	41	33	54	46	52	65
Duct	Slim		EH035EAV	UH035EAV	32	27	45	41	47	60
			EH052EAV	UH052EAV	33	30	46	44	49	62
			EH070EAV	UH070EAV	36	32	50	48	52	65
	MSP		DH105EAV	UH105GAV	39	35	52	48	56	69
			DH140EAV	UH140GAV	43	38	56	51	59	72
Ceiling			FH052EAV	UH052EAV	38	32	52	47	49	62
			FH070EAV	UH070EAV	41	36	54	49	52	65

5. Operation Range

◆ ✳✳026/035/052/060/070✳✳

OPERATING MODE	RANGE
Cooling Standard Operation	
Heating Standard Operation	
Power source voltage	Rating ±10%
Starting voltage	Min. 90% of Rating

◆ ✳✳105/140✳✳

OPERATING MODE	RANGE
Cooling Standard Operation	
Heating Standard Operation	
Power source voltage	Rating ±10%
Starting voltage	Min. 90% of Rating

Technical Data Book

07 Troubleshooting

1. Indoor Unit Error Display

1-1. KH026EAV/KH035EAV

1) Error Detection and Reoperation

◆ If error occurs during the operation, badness is indicated by LED flickering and all operation is stopped except LED.
◆ When reoperating by remote control and switch determine the error mode after normal operation.

2) Indoor Unit LED Lamp Display at Error Detecting

ABNORMAL CONDITIONS	INDICATORS					OPERATING
	Green	Red				
Power reset	◑	×	×	×	×	-
Error of temperature sensor in the indoor unit(Open/Short)	×	×	◑	×	×	-
Error of heat exchanger sensor in the indoor unit	◑	×	◑	×	×	-
Error of the outdoor temperature sensor Error of the condenser temperature sensor Error of the discharge temperature sensor	◑	×	×	◑	×	-
Indoor and outdoor unit time out Abnormal data reception more than 60 packet Indoor unit is not connected Communication error between the outdoor unit Main-Inverter Micom(After 1 minute of Main-Inverter detection)	×	×	◑	◑	×	1. Indoor unit error (Display is unrelated with operation) 2. Outdoor unit error (Display is unrelated with operation)

● : On, ◑ : Flickering, × : OFF

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

3) LED Display

ABNORMAL CONDITIONS	INDICATORS					OPERATING
	⏻		⏲	✣	▦	
	Green	Red				
[Self diagnosis] Power voltage detection between indoor and outdoor unit communication cable [Self diagnosis] Outdoor unit refrigerant leakage (Gas leak) [Self diagnosis] Outdoor fan restriction error [Inverter] Inverter compressor operation failure [Inverter] DC peak error [Inverter] DC Link voltage 150V or less, 410V or more [Inverter] Compressor rotation error [Inverter] Electric current error [Inverter] DC Link sensor error [Inverter] EEPROM READ/WRITE error [Inverter] Inverter zero crossing error Setting the outdoor unit capacity option error	×	×	◑	◑	◑	-
Detection of the float switch	×	×	×	◑	◑	-
Error of setting option switches for optional accessories	×	×	◑	×	◑	-
EEPROM error	◑	×	◑	◑	×	-
EEPROM option error	◑	◑	◑	◑	◑	-

● : On, ◑ : Flickering, × : OFF

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

1-2. FH052EAV/FH070EAV

1) Error Detection and Reoperation

◆ If error occurs during the operation, badness is indicated by LED flickering and all operation is stopped except LED.
◆ When reoperating by remote control and switch determine the error mode after normal operation.

2) Indoor Unit LED Lamp Display at Error Detecting

ERROR TYPE	LED LAMP DISPLAY						REMARK
	⏻	≋	⏲	✣	▦	✎	
Power reset	×	◑	×	×	×	×	
Error of temperature sensor in the indoor unit (Open/Short)	×	×	◑	×	×	×	Displayed on appropriate indoor unit which is operating
Error of heat exchanger sensorin the indoor unit	×	◑	◑	×	×	×	Displayed on appropriate indoor unit which is operating
Error of the outdoor temperature sensor Error of the condenser temperature sensor Error of the discharge temperature sensor	×	◑	×	◑	×	×	Displayed on appropriate indoor unit which is operating Displayed on outdoor unit
Indoor and outdoor unit time out Abnormal data reception more than 60 packet Indoor unit is not connected Communication error between the outdoor unit Main-Inverter Micom(After 1 minute of Main-Inverter detection)	×	×	◑	◑	×	×	Error of indoor unit : Displayed on the indoor unit regardless of operation
[Self diagnosis]Power voltage detection between indoor and outdoor unit communication cable [Self diagnosis]Outdoor unit refrigerant leakage (Gas leak) [Self diagnosis]Outdoor fan restriction error [Inverter]Inverter compressor operation failure [Inverter] DC peak error [Inverter]DC Link voltage 150V or less, 410V or more [Inverter] Compressor rotation error [Inverter]Electric current error [Inverter]DC Link sensor error [Inverter]EEPROM READ/WRITE error [Inverter]Inverter zero crossing error Setting the outdoor unit capacity option error	×	×	◑	◑	◑	×	-
Error of setting option switches for optional accessories	×	×	◑	×	◑	×	-
EEPROM error	×	◑	◑	◑	×	×	-
EEPROM option error	◑	◑	◑	◑	◑	◑	-

● : On, ◑ : Flickering, × : OFF
◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

1-3. TH026EAV/TH035EAV/TH052EAV/TH060EAV/CH070EAV/CH105EAV/ CH140EAV

1) Indoor Unit LED Lamp Display at Error Detecting

ERROR TYPE	LED LAMP DISPLAY					REMARK
	Operation	Defrost	Timer	Air flow	Filter	
	⏻	*💧	🕒	🌀	▦	
Power reset	◑	×	×	×	×	-
Error of temperature sensor in the indoor unit (Open/Short)	×	×	◑	×	×	-
Error of heat exchanger sensor in the indoor unit	◑	×	◑	×	×	-
Error of the outdoor temperature sensor Error of the condenser temperature sensor Error of the discharge temperature sensor	◑	×	×	◑	×	-
1. No communication for 2 minutes between indoor units (Communication error for more than 2 minutes) 2. Indoor unit receiving the communication error from outdoor unit 3. Outdoor unit tracking 3 minutes error 4. When sending the communication error from the outdoor unit, the mismatching of the communication numbers and installed numbers after completion of tracking (Communication error for more than 2 minutes)	×	×	◑	◑	×	-
1. Error of electronic expansion valve close 2. Error of electronic expansion valve open 3. 2'nd detection of high temperature cond 4. 2'nd detection of high temperature discharge 5. Error of reverse phase 6. Compressor down due to 6'th detection of freezing	×	×	◑	◑	◑	-
Detection of the float switch	×	×	×	◑	◑	-
Error of setting option switches for optional accessories	×	×	◑	×	◑	-
EEPROM option error	◑	◑	◑	◑	◑	-

● : On, ◑ : Flickering, × : OFF

◆ If you turn off the air conditioner when the LED is flickering, the LED is also turned off.

1-4. Wired Remote Controller Error Display(COM2)

DISPLAY	EXPLANATION	REMARK
101	Indoor unit Communication Error	Communication Error
102	Indoor/Outdoor unit Communication Time Out Error	
	60 Packet Over data	
201	Indoor unit is not connected	
203	Communication Error between Outdoor Main and Inverter Micom (Occurred after 1 minute detection in Main and Inverter)	
121	Indoor Temp. Sensor(OPEN/SHORT ERROR)	Indoor Sensor Error
122	Indoor Unit Eva in sensor(OPEN/SHORT ERROR)	
128	Indoor Unit Eva in sensor Separation	
221	Outdoor Temp. Sensor Error(OPEN/SHORT ERROR)	Outdoor Sensor Error
237	COND Temp. Sensor Error(OPEN/SHORT ERROR)	
260	Inverter Compressor Discharge Temp. sensor Error(OPEN/SHORT ERROR)	
153	Indoor Float S/W 2nd Detection	Self Diagnosis Error
460	Outdoor unit-Indoor unit Communication wire Voltage Detection	
554	Outdoor unit Refrigerant Full Leakage(Gas Leak)	
458	Outdoor door Fan Error	
461	[Inverter] Inverter Comp. Start Failure	Outdoor Unit Protection Control Error
464	[Inverter] DC PEAK Error	
466	[Inverter] DC LINK Voltage 150V below, 410V Over	
467	[Inverter] Comp. Rotation Error	
468	[Inverter] Current Sensor Error	
469	[Inverter] DC LINK Sensor Error	
471	[Inverter] EEPROM READ/WRITE Error	
472	[Inverter] Inverter ZERO CROSSING Error	
556	Outdoor unit Capacity Setup Option Error	
601	Wired Liquid Crystal ↔ Indoor unit Comm. Error	Wired Remote Control Error
602	Master Wired Liquid Crystal ↔ Slave Liquid Crystal Comm. Error	
606	Wired Liquid Crystal COM1/COM2 Cross Error	
Er	Error of setting option for wired remote controller COM2	

1-5. Outdoor LED Error Display and Check Method

No.	LED DISPLAY			EXPLANATION	ERROR CODE
	Yellow	Green	Red		
1	○	○	○	Power off/ VDD NG	-
2	○	○	◎	IPM Over Current(O.C)	464
3	○	○	●	Abnormal Serial communication/ Power Cable Miss Connection	203
	○	●	●		
4	○	◎	○	Compressor Starting error	461
5	○	◎	●	Normal Operation	-
6	○	●	○	Compressor Lock error	473
7	○	●	◎	DC-Link voltage under/over error	466
8	◎	○	◎	Outdoor temperature sensor error	221
9	◎	○	●	Discharge over temperature	416
10	◎	◎	○	Discharge temperature sensor error	251
11	◎	◎	●	Current sensor error	468
12	◎	●	○	Compressor Limit error	465
13	◎	●	◎	Coil temperature sensor error	237
14	◎	●	●	1min. Time out Communication	202
15	●	○	○	Fan error	458 (FAN1) 475 (FAN2)
16	●	○	◎	OTP error	471
17	●	○	●	Compressor rotation error	467
18	●	◎	○	Operation condition secession	440 (Heating) 441 (Cooling)
19	●	◎	◎	DC-Link voltage sensor error	469
20	●	◎	●	I_Trip error	462
21	●	●	○	GAS Leak error	554
22	●	●	◎	Power Cable miss connection	425
23	●	●	●	Power ON reset(1sec)	-
24	◎	○	○	Capacity miss match	556
25	○	◎	◎	Test Operation at Cooling Mode	-
26	◎	◎	◎	Test Operation at Heating Mode	-

●: LED ON, ○: LED OFF, ◎: LED BLINK

2. Check List

1) The input voltage should be rating voltage ±10% range.
   The air conditioner may not operate properly if the voltage is out of this range.

2) Is the link cable linking the indoor unit and the outdoor unit linked properly?
   The indoor unit and the outdoor unit shall be linked by 4 cables.
   Check the terminals if the indoor unit and outdoor unit are properly linked by the same number of cables.
   Otherwise the air conditioner may not operate properly.

3) When a problem occurs due to the contents illustrated in the table below it is a symptom not related to the malfunction of the air conditioner.

No.	OPERATION OF AIR CONDITIONER	EXPLANATION
1	In a COOL operation mode, the compressor does not operate at a room temperature higher than the setting temperature that the INDOOR FAN should operate. **[In case of heat pump model]** In a HEAT operation mode, the compressor does not operate at a room temperature lower than the setting temperature that indoor fan should operate.	In happens after a delay of 3 minutes when the compressor is reoperated. The same phenomenon occurs when a power is on. As a phenomenon that the compressor is reoperated after a delay of 3 minutes, the indoor fan is adjusted automatically with reference to a temperature of the air blew.
2	Compressor stops operation intermittently in DRY( ) mode.	Compressor operation is controlled automatically in DRY mode depending on the room temperature and humidity.
3	**[In case of heat pump model]** Compressor of the outdoor unit is operating although it is turned off in a HEAT mode.	When the unit is turned off while de-ice is activated, the compressor continues operation for up to 12 minutes(maximum) until the deice is completed.
4	**[In case of heat pump model]** The compressor and indoor fan stop intermittently in HEAT mode.	The compressor and indoor fan stop intermittently if room temperature exceeds a setting temperature in order to protect the compressor from overheated air in a HEAT mode.
5	**[In case of heat pump model]** Indoor fan and outdoor fan stop operation intermittently in a HEAT mode.	The compressor operates in a reverse cycle to remove exterior ice in a HEAT mode, and indoor fan and outdoor fan do not operate intermittently for within 20% of the total heater operation

3. Trouble Diagnosis

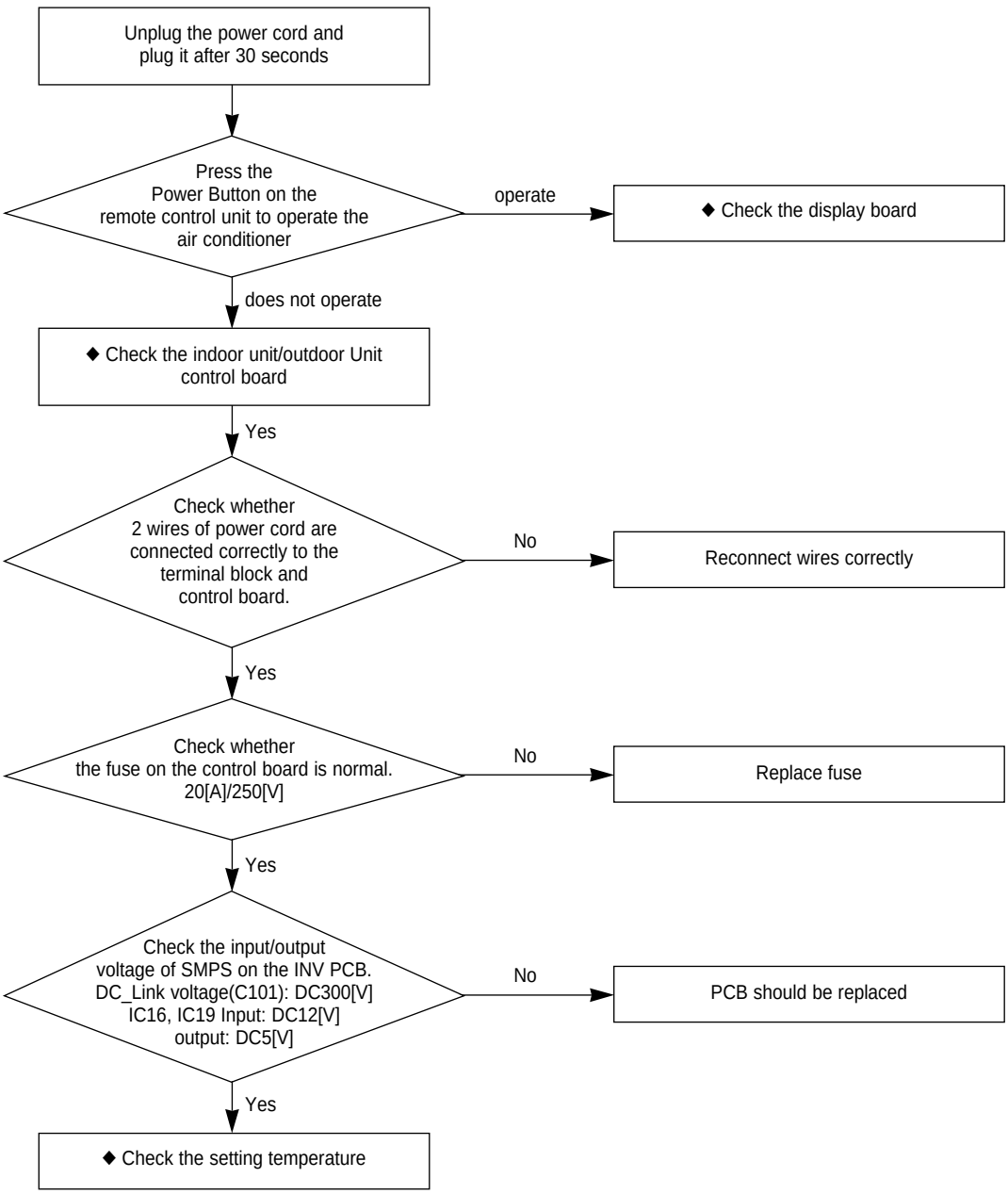
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

1) No Power(completely dead)-Initial Diagnosis

(1) Checklist :

- ◆ Is input voltage normal?
- ◆ Is AC power linked correctly?
- ◆ Is input voltage of DC regulator IC KA7805(IC16, IC19)normal?(11VDC-12.5VDC)-Outdoor Controller
- ◆ Is output voltage of DC regulator IC KA7805(IC16, IC19)normal?(4.5VDC-5.5VDC)-Outdoor Controller

(2) Troubleshooting procedure



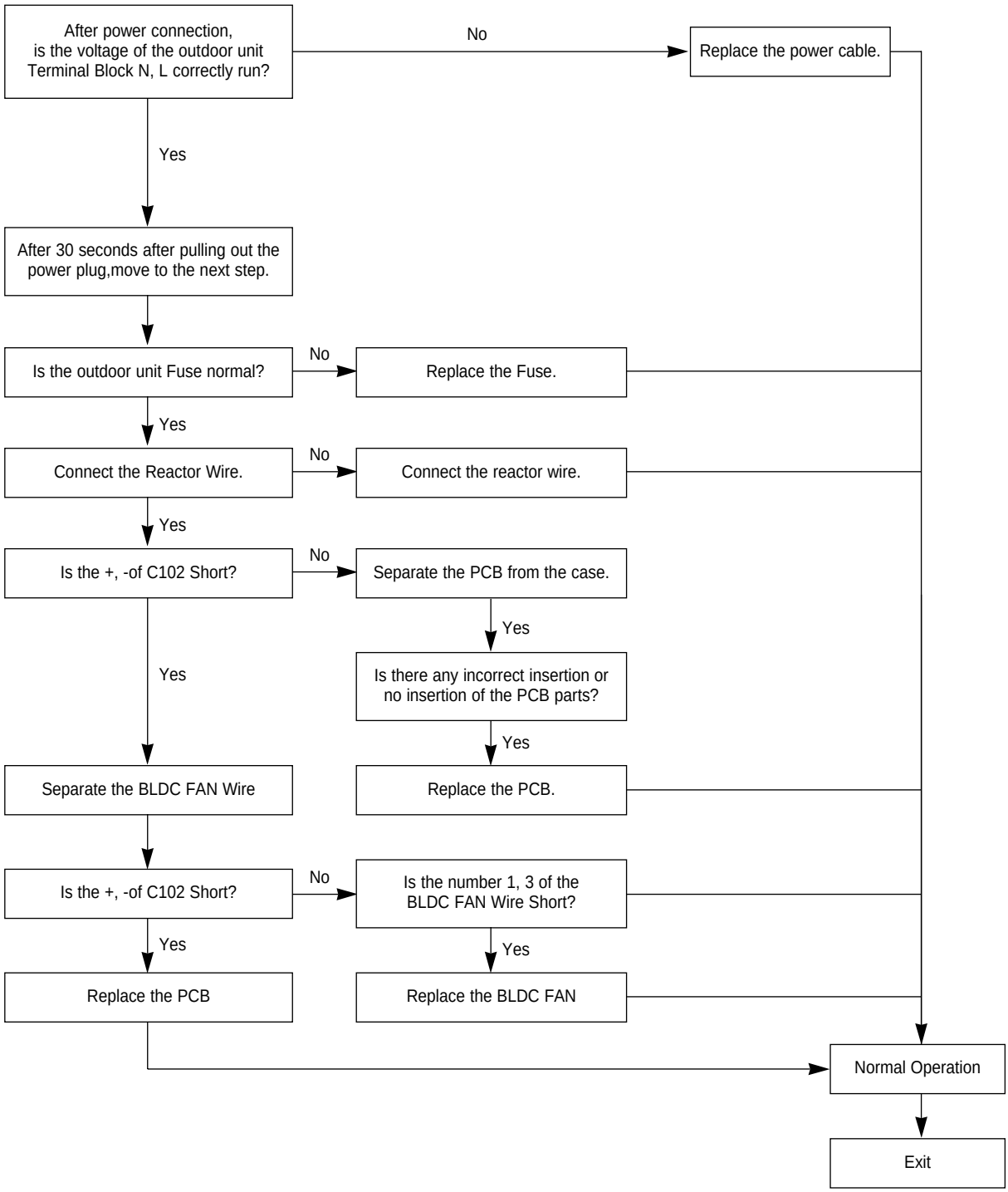
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

2) The Outdoor Unit Power Supply Error

(1) Checklist :

- ◆ Are the input power voltage and power connection correct?
- ◆ Is there any Fuse Short of the indoor? outdoor unit?
- ◆ Is the Reactor Wire of the outdoor unit correctly connected?

(2) Troubleshooting procedure

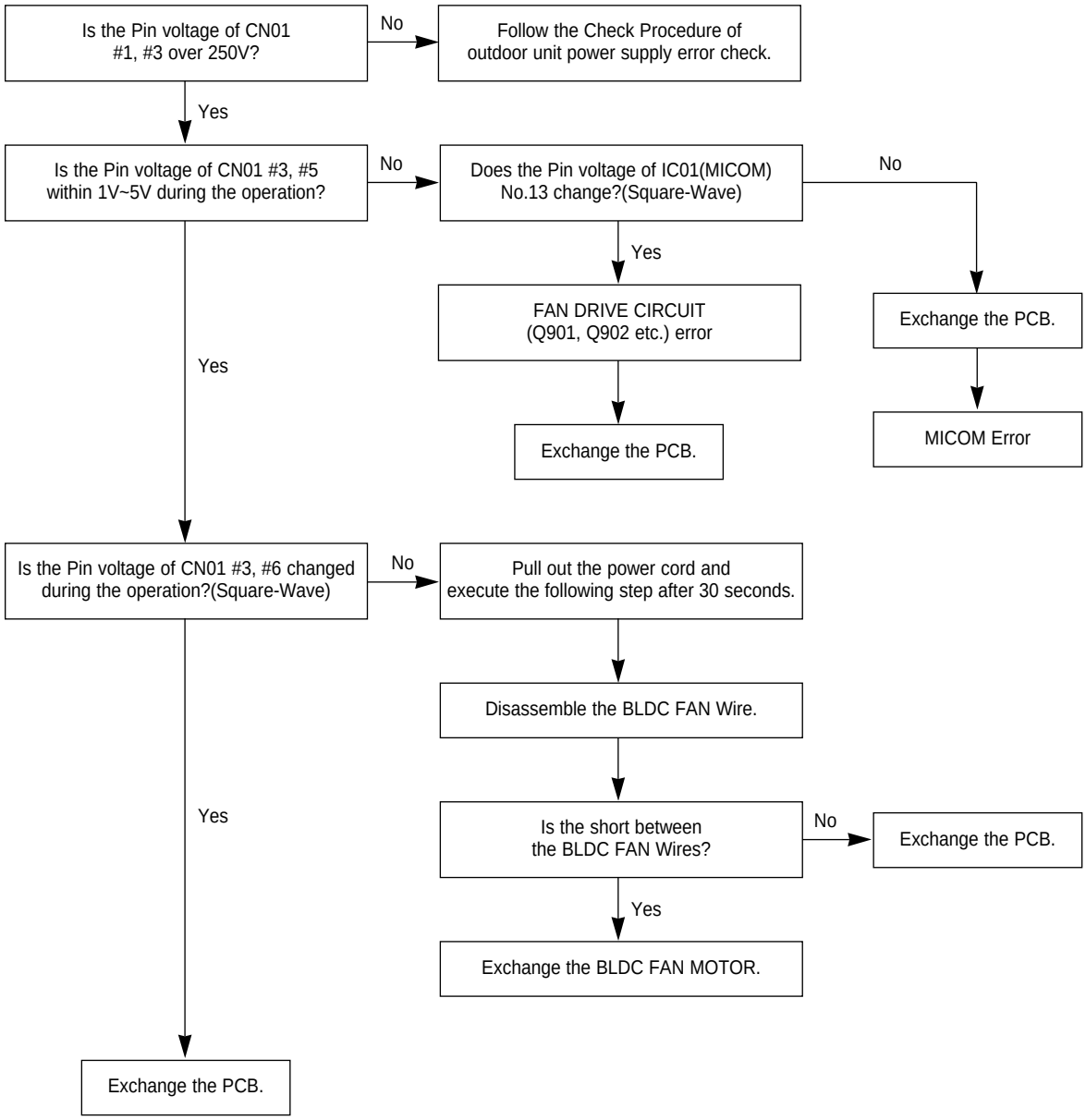


3) The Outdoor Unit Fan Error

(1) Checklist :

- ◆ Are the input power voltage and the power connection correct?
- ◆ Is the motor wire connected to the outdoor PCB correctly?
- ◆ Is there no assembly error or none-assembly in the terminal of motor wire connector?
- ◆ Is there no obstacle at the surrounding of motor and propeller?

2. Troubleshooting procedure



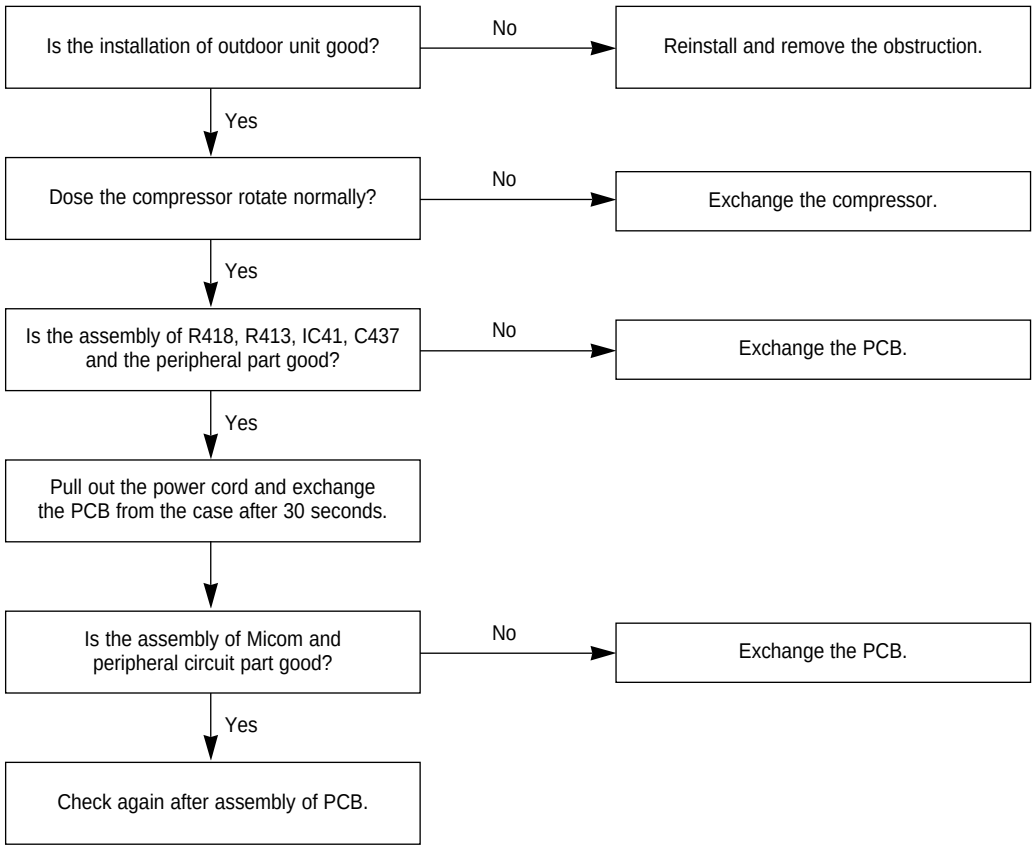
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

4) Total Current Trip Error

(1) Checklist :

- ◆ Is the input power voltage proper?
- ◆ Is the refrigerant charged properly?
- ◆ Does the compressor rotate normally?(Reverse rotation, Locking etc.)
- ◆ Dose the outdoor fan operate normally?(Fan propeller loss, Motor error etc.)
- ◆ Is the installation condition of outdoor unit good?(Piping, Space etc.)
- ◆ Is there no ventilation obstruction at the surrounding of outdoor?(Outdoor unit cover, Fan front obstruction etc.)

(2) Troubleshooting procedure

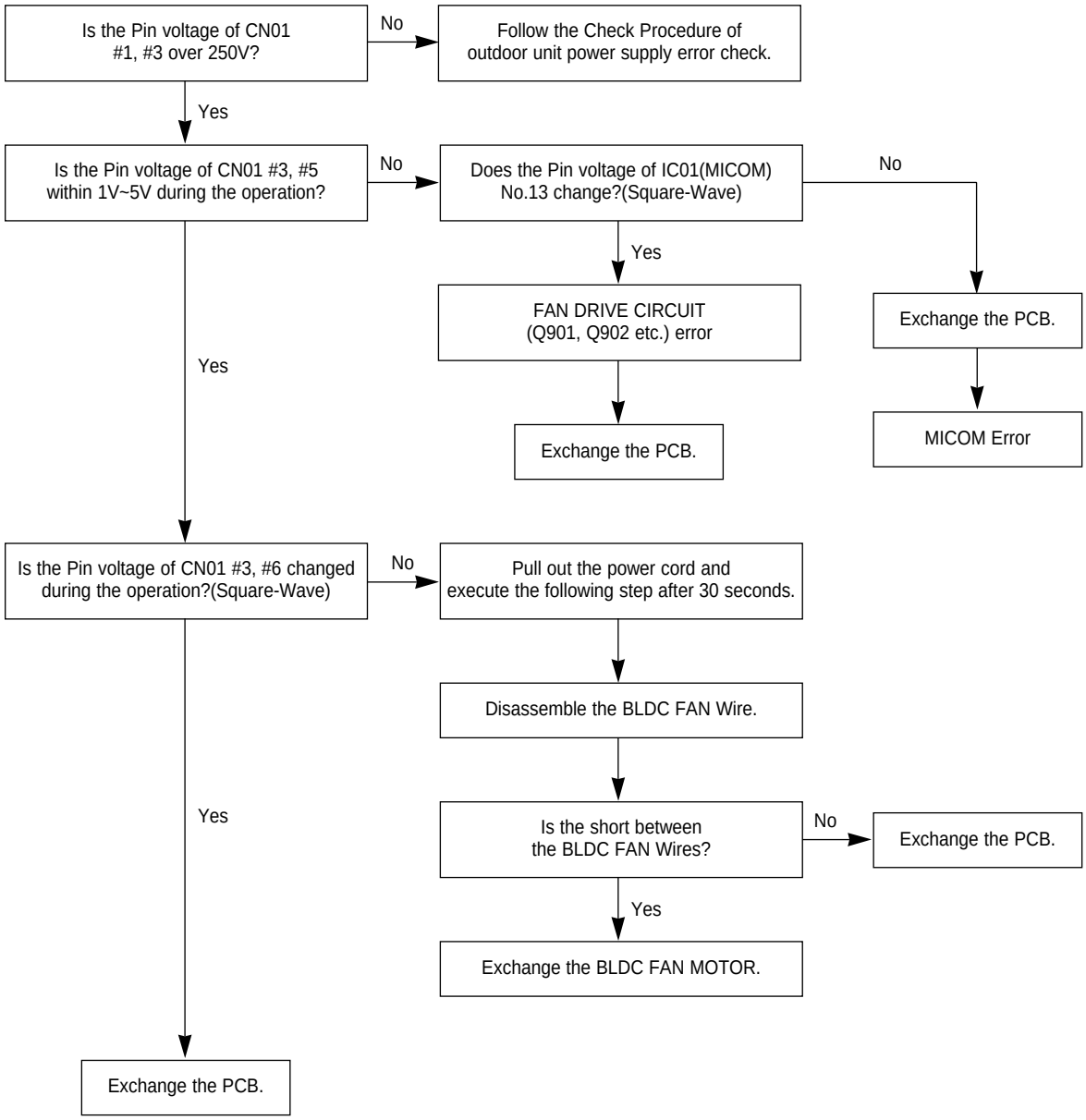


5) Total Current Trip Error

(1) Checklist :

- ◆ Are the input power voltage and the power connection correct?
- ◆ Is the motor wire connected to the outdoor PCB correctly?
- ◆ Is there no assembly error or none-assembly in the terminal of motor wire connector?
- ◆ Is there no obstacle at the surrounding of motor and propeller?

(2) Troubleshooting procedure



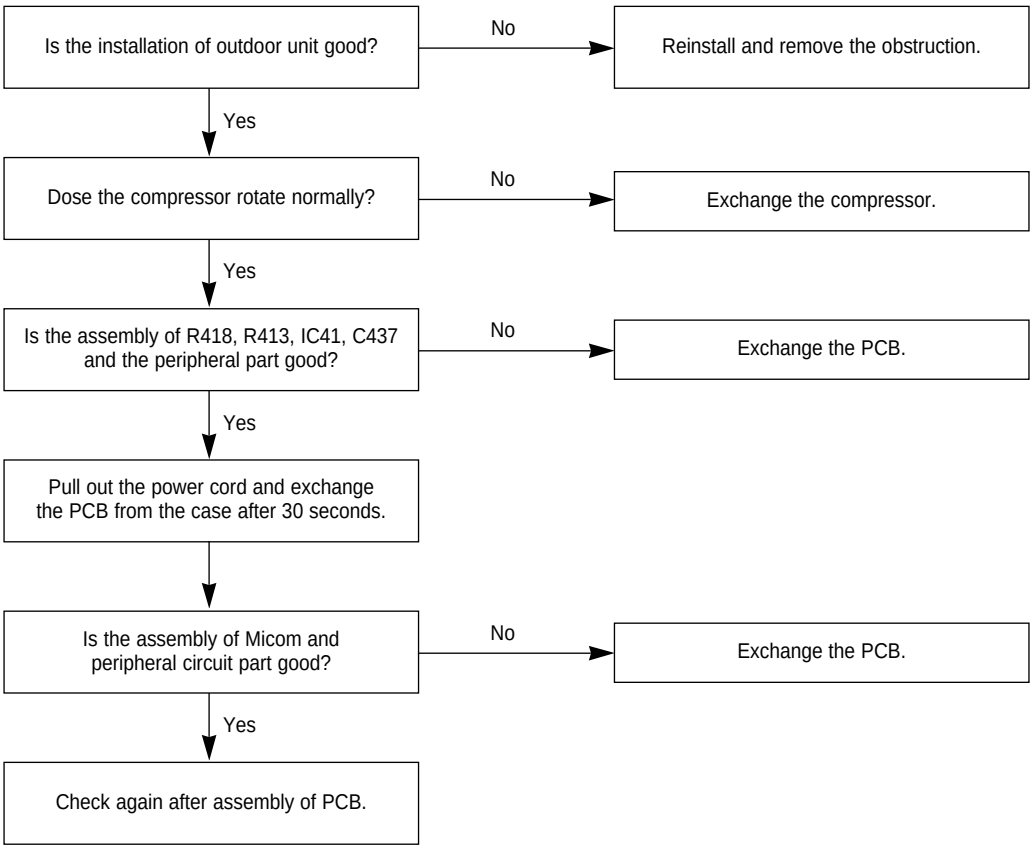
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

6) Total Current Trip Error

(1) Checklist :

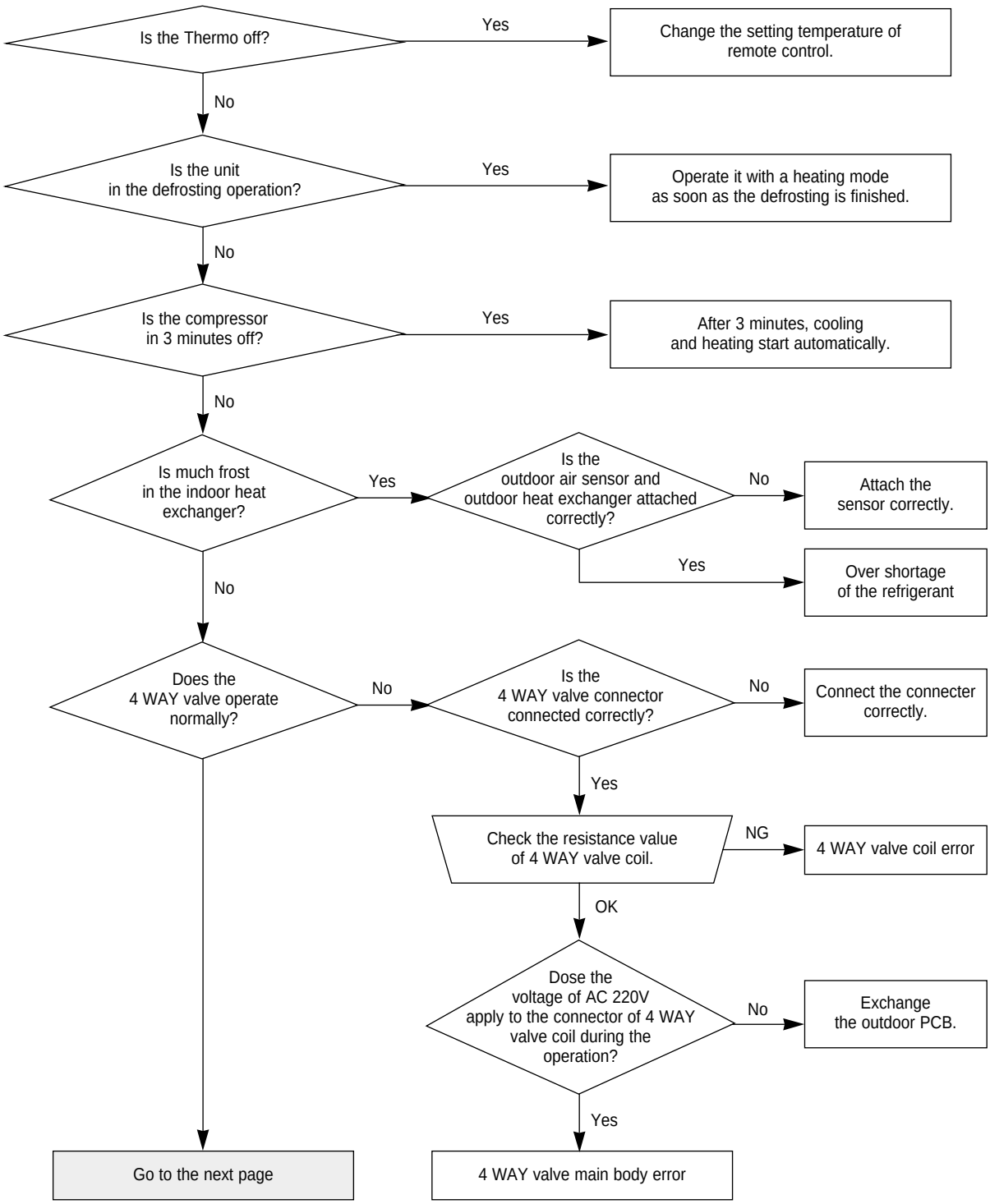
- ◆ Is the input power voltage proper?
- ◆ Is the refrigerant charged properly?
- ◆ Does the compressor rotate normally?(Reverse rotation, Locking etc.)
- ◆ Dose the outdoor fan operate normally?(Fan propeller loss, Motor error etc.)
- ◆ Is the installation condition of outdoor unit good?(Piping, Space etc.)
- ◆ Is there no ventilation obstruction at the surrounding of outdoor?(Outdoor unit cover, Fan front obstruction etc.)

(2) Troubleshooting procedure



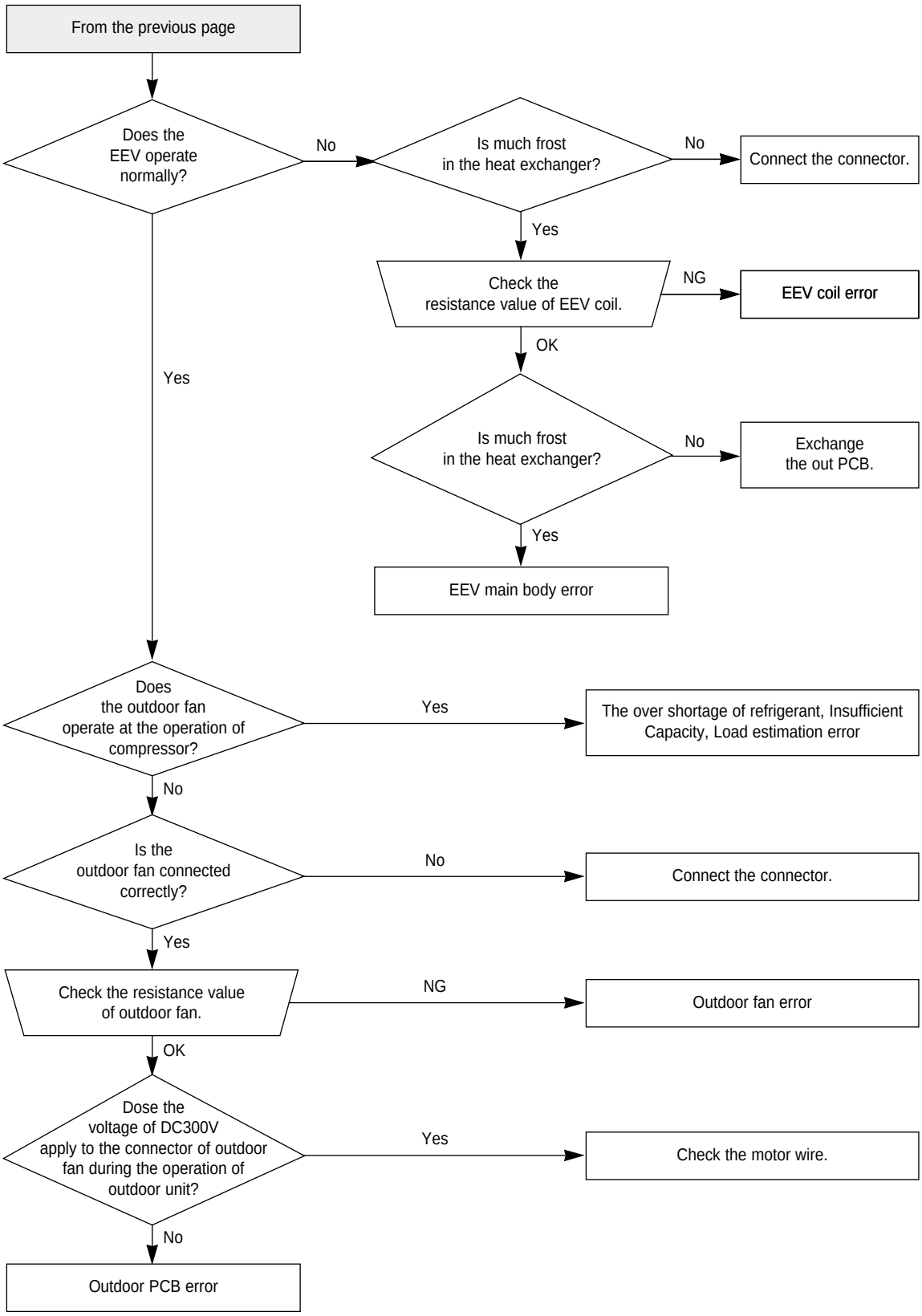
7) In Case of Heating at the Cooling Mode or Cooling at the Heating Mode

(1) Troubleshooting procedure



3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

7) In Case of Heating at the Cooling Mode or Cooling at the Heating Mode (Continued)

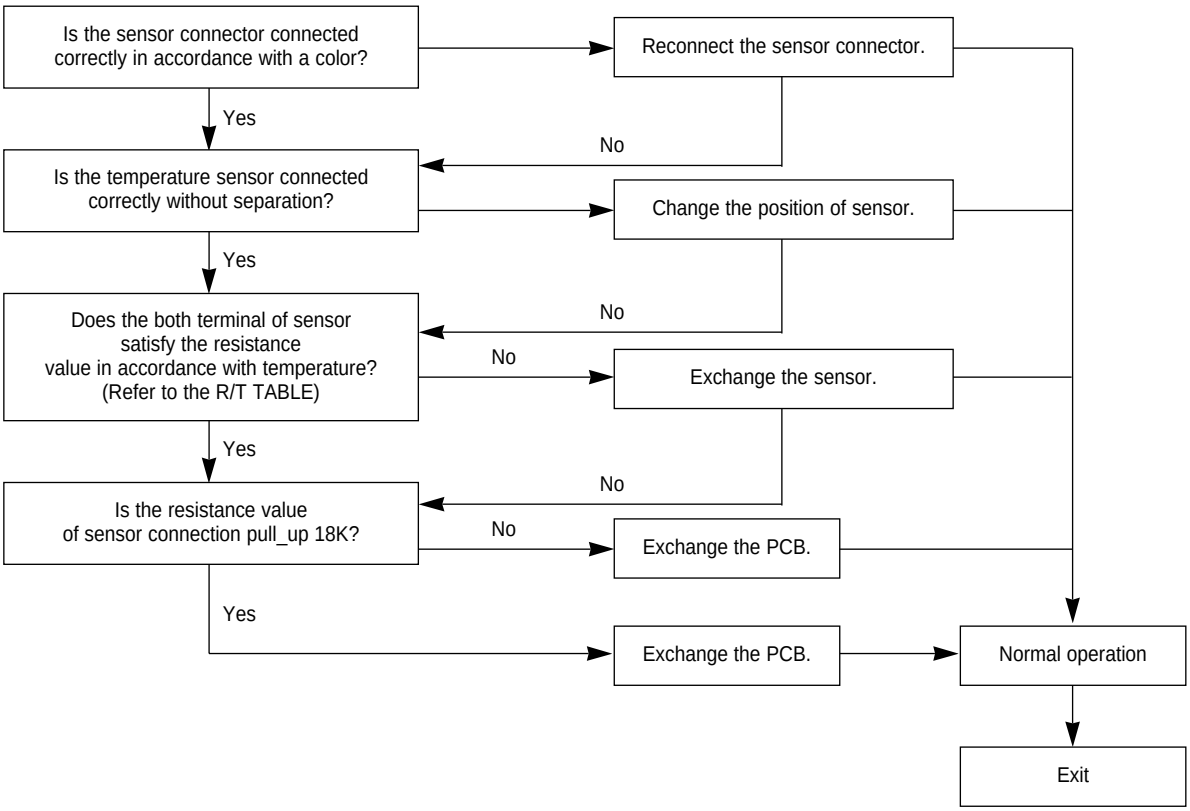


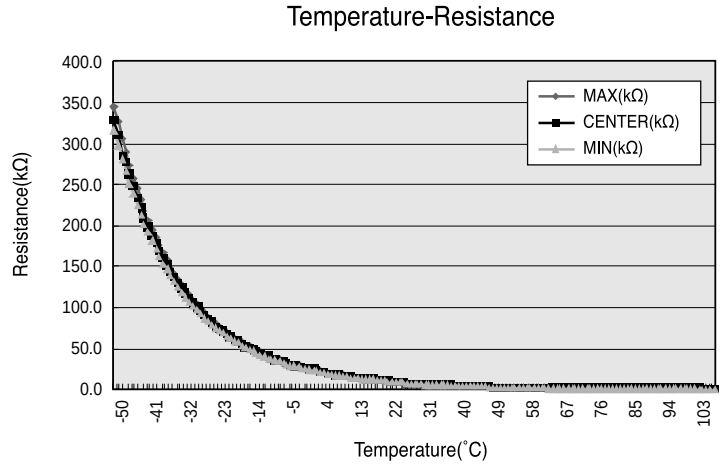
8) No Power (completely dead)-Initial Diagnosis

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure





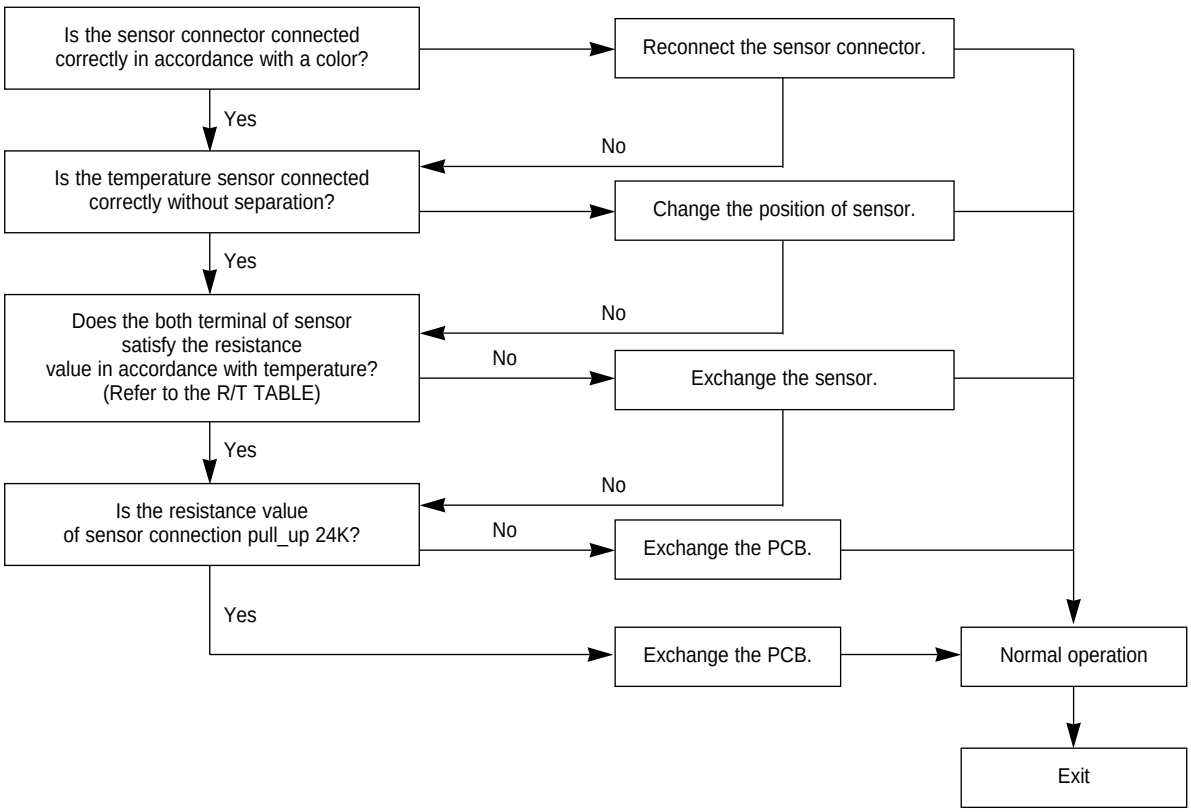
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

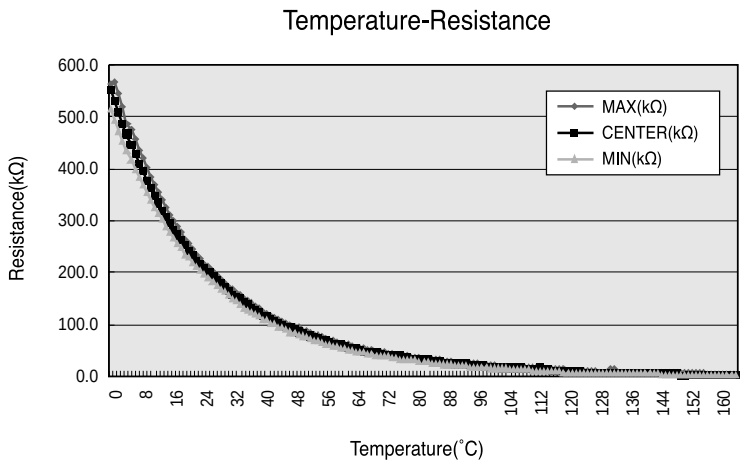
9) Discharge Temperature Sensor Error

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure



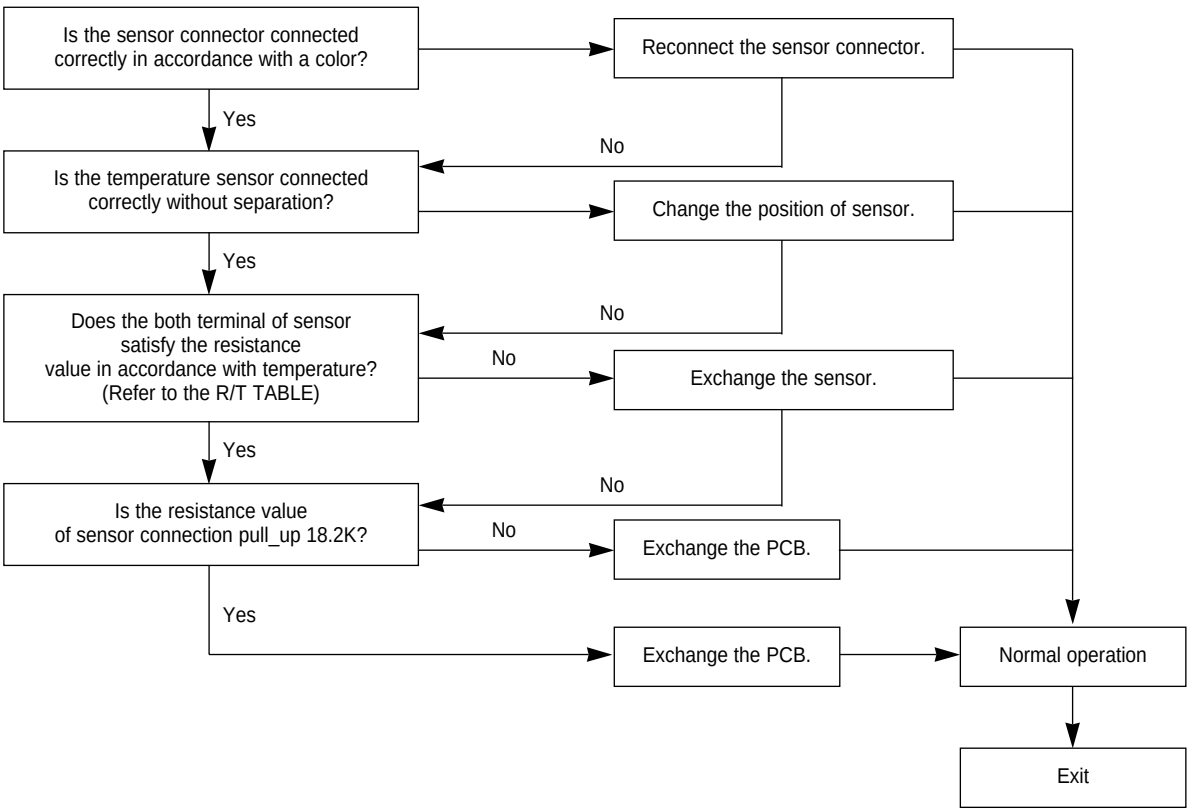


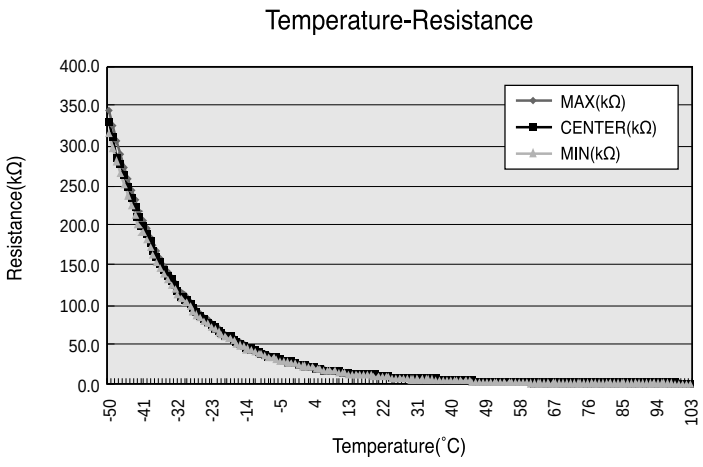
10) Discharge Temperature Sensor Error

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure





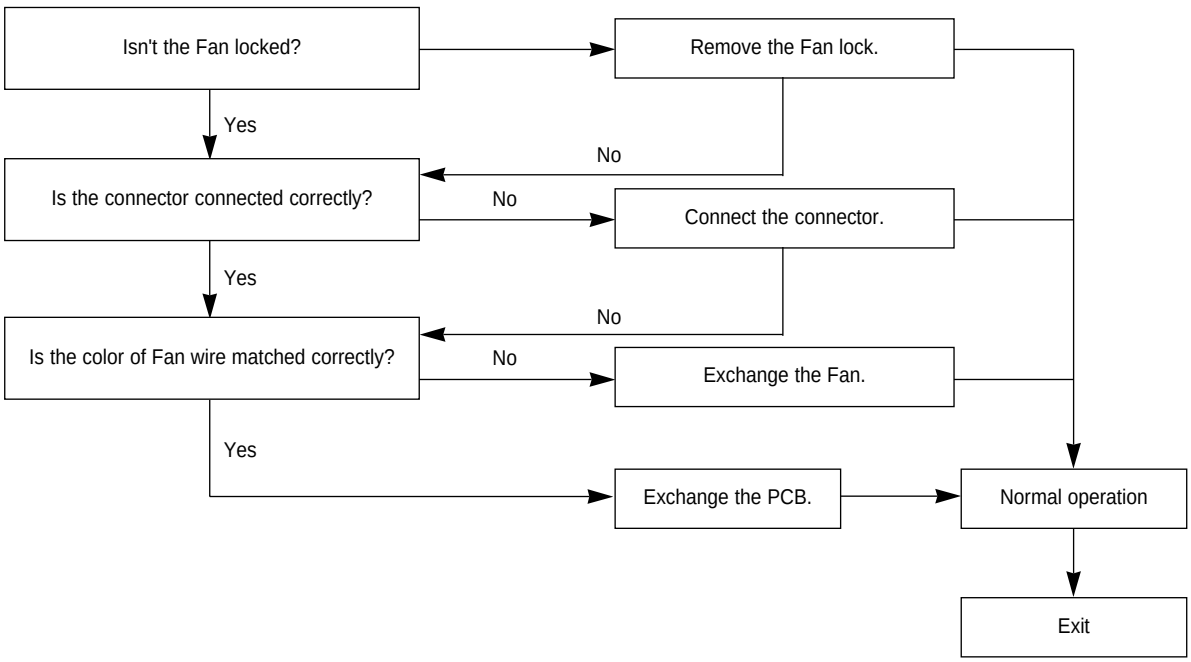
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

11) Fan Error

(1) Checklist :

- ◆ Isn't the fan locked?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure

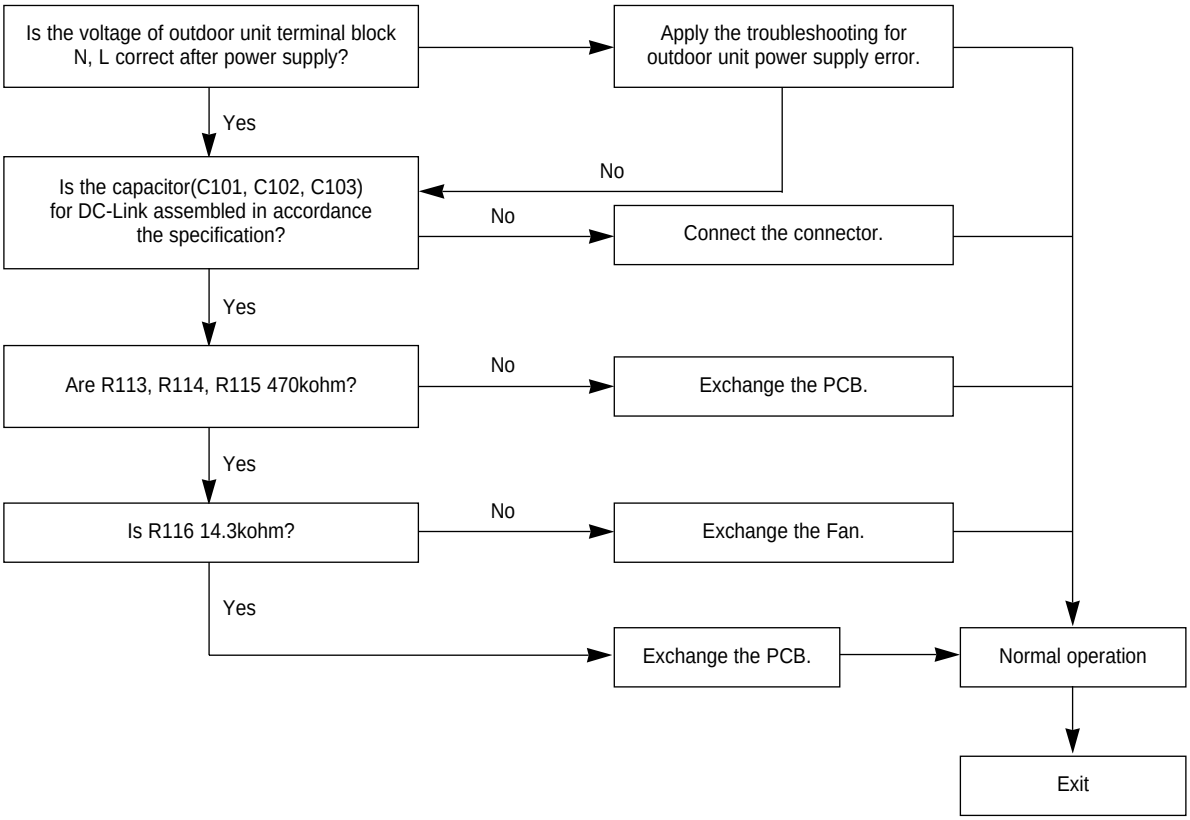


12) DC-Link Voltage Sensor Error

(1) Checklist :

- ◆ Is the voltage of outdoor unit terminal block N, L correct after power supply?
- ◆ Is the capacitor(C101, C102, C103) for DC-Link assembled in accordance the specification?
- ◆ Are R113, R114, R115 470Kohm?
- ◆ Is R116 14.3Kohm?

(2) Troubleshooting procedure



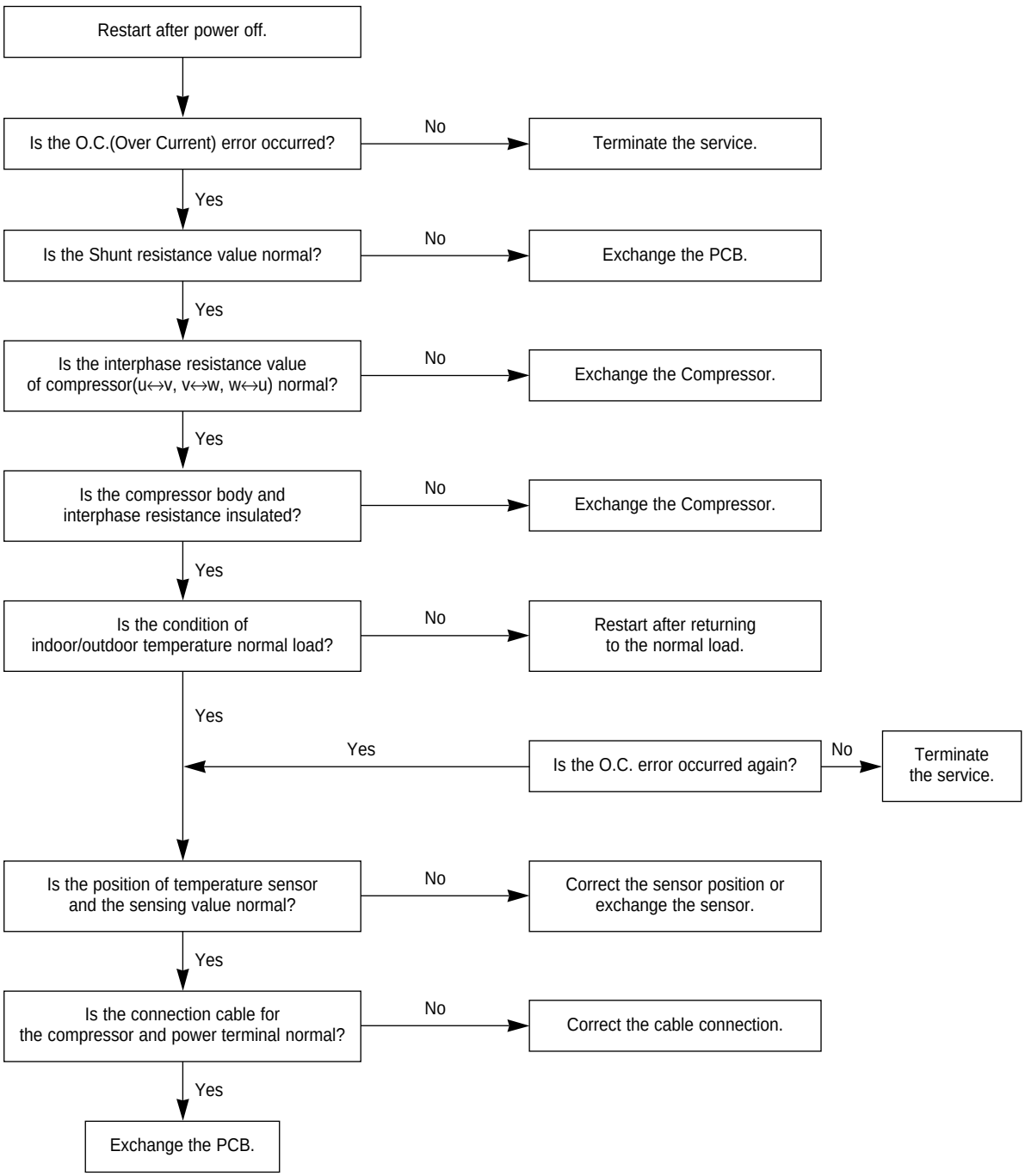
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

13) O.C.(Over Current) Error

(1) Checklist :

- ◆ Is the Shunt resistance value correct?
- ◆ Is the condition of surrounding temperature abnormal overload?
- ◆ Is there any problem as like the temperature sensor separation or measurement value error?
- ◆ Is the interphase resistance of compressor normal?

(2) Troubleshooting procedure

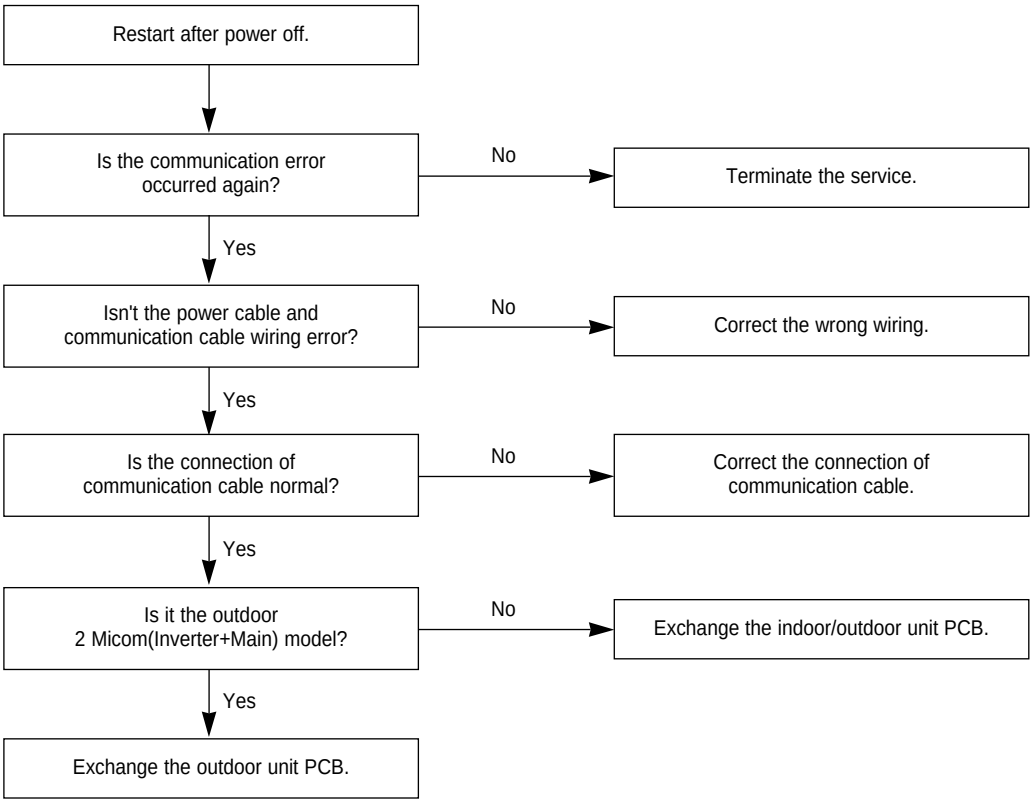


14) Communication Error

(1) Checklist :

- ◆ Is the communication cable between the indoor unit and outdoor unit connected correctly?
- ◆ Isn't the power cable and communication cable wiring error?

(2) Troubleshooting procedure



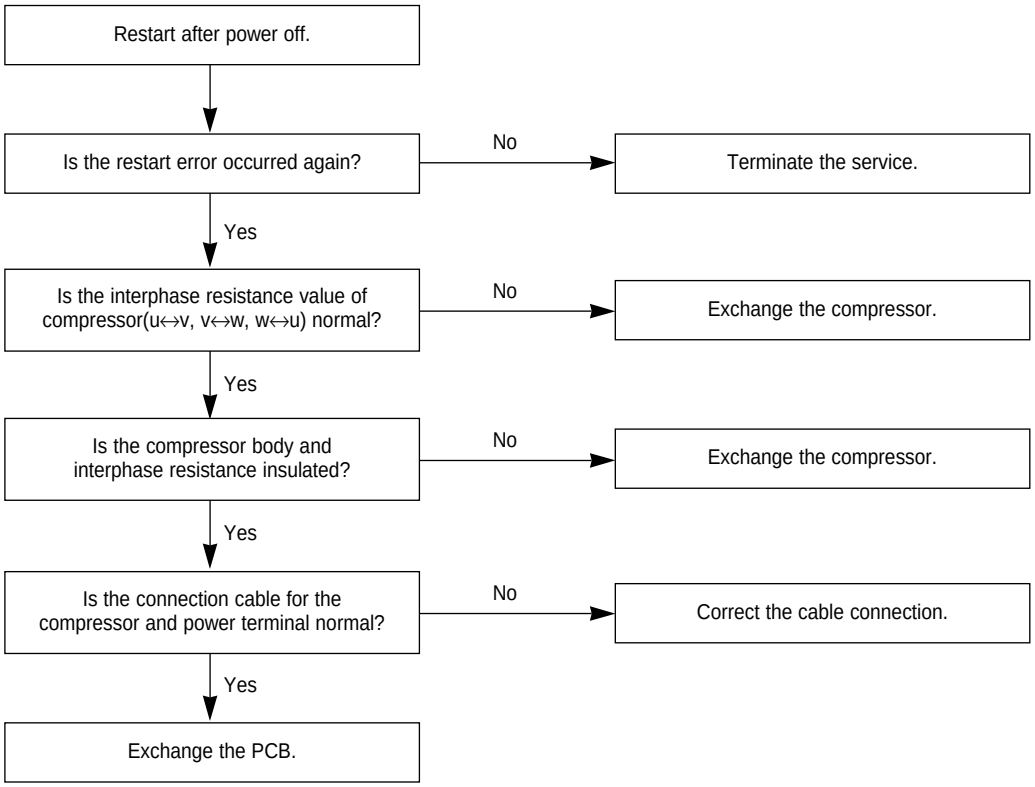
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

15) Compressor Start Error

(1) Checklist :

- ◆ Is the connection of cable for the compressor and power?
- ◆ Is the interphase resistance of compressor normal?

(2) Troubleshooting procedure

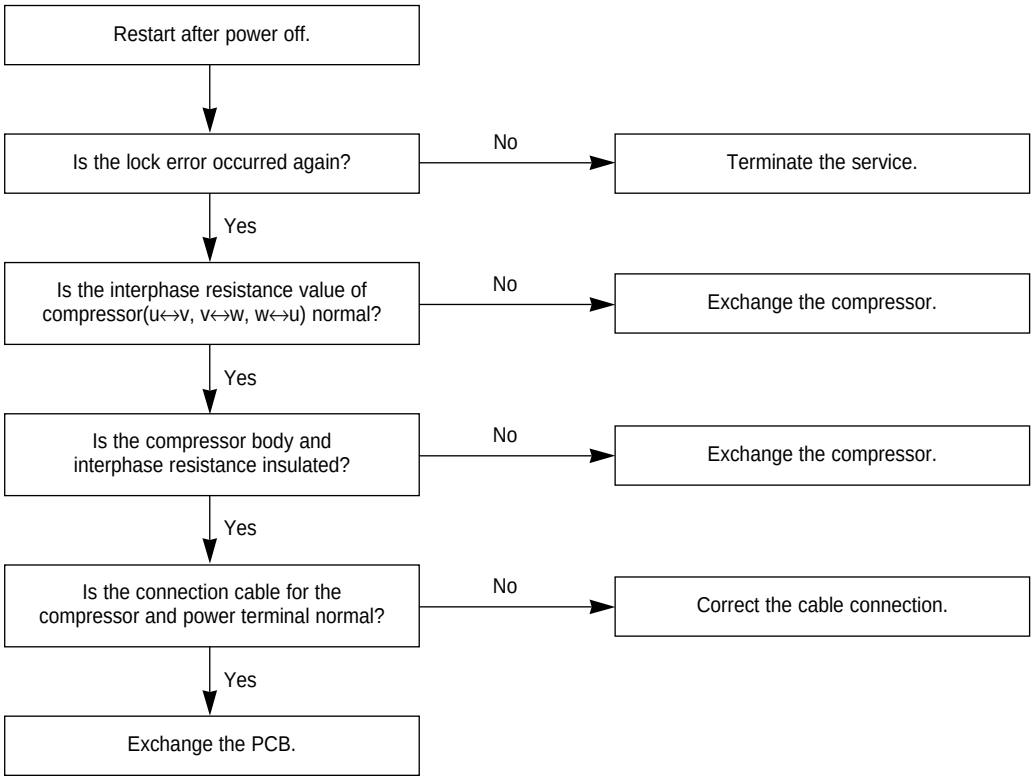


16) Compressor Lock Error

(1) Checklist :

- ◆ Is the communication cable between the indoor unit and outdoor unit connected correctly?
- ◆ Isn't the power cable and communication cable wiring error?

(2) Troubleshooting procedure



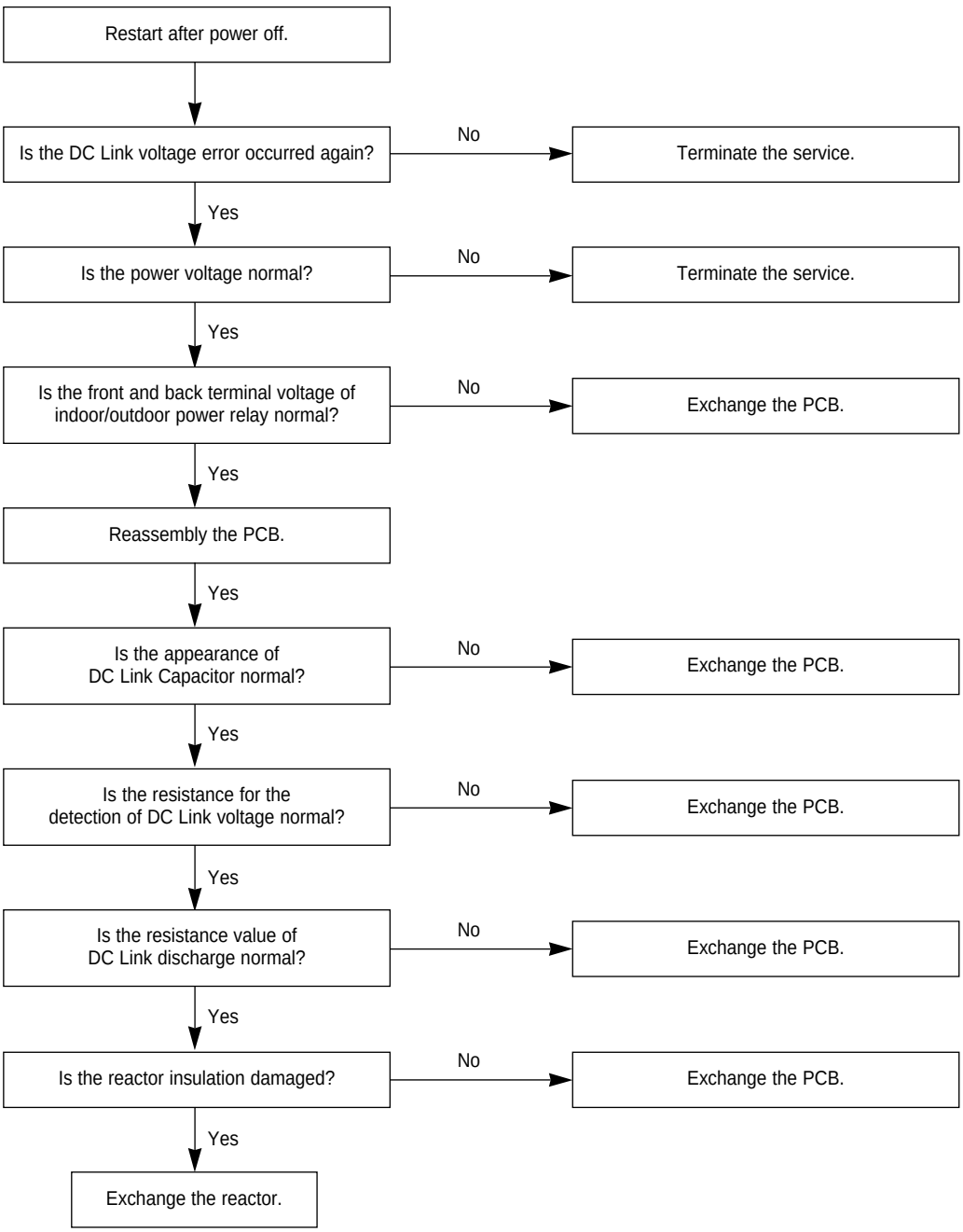
3-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

17) DC Link Over Voltage/Low Voltage Error

(1) Checklist :

- ◆ Is the power voltage normal?
- ◆ Is the voltage of front and back terminal of indoor(outdoor) power relay normal?
- ◆ Is the resistance value for DC Link voltage detection NORMAL?
- ◆ Is the resistance value of DC Link discharge normal?
- ◆ Is the appearance of DC Link Capacitor normal?

(2) Troubleshooting procedure



18) The Others

(1) AC Line Zero Cross Signal OUT
- ◆ Check the assembly condition of peripheral part of IC21, ZD201, ZD200 and D201 on the PCB.

(2) Capacity miss match
- ◆ Check again the indoor unit option code.

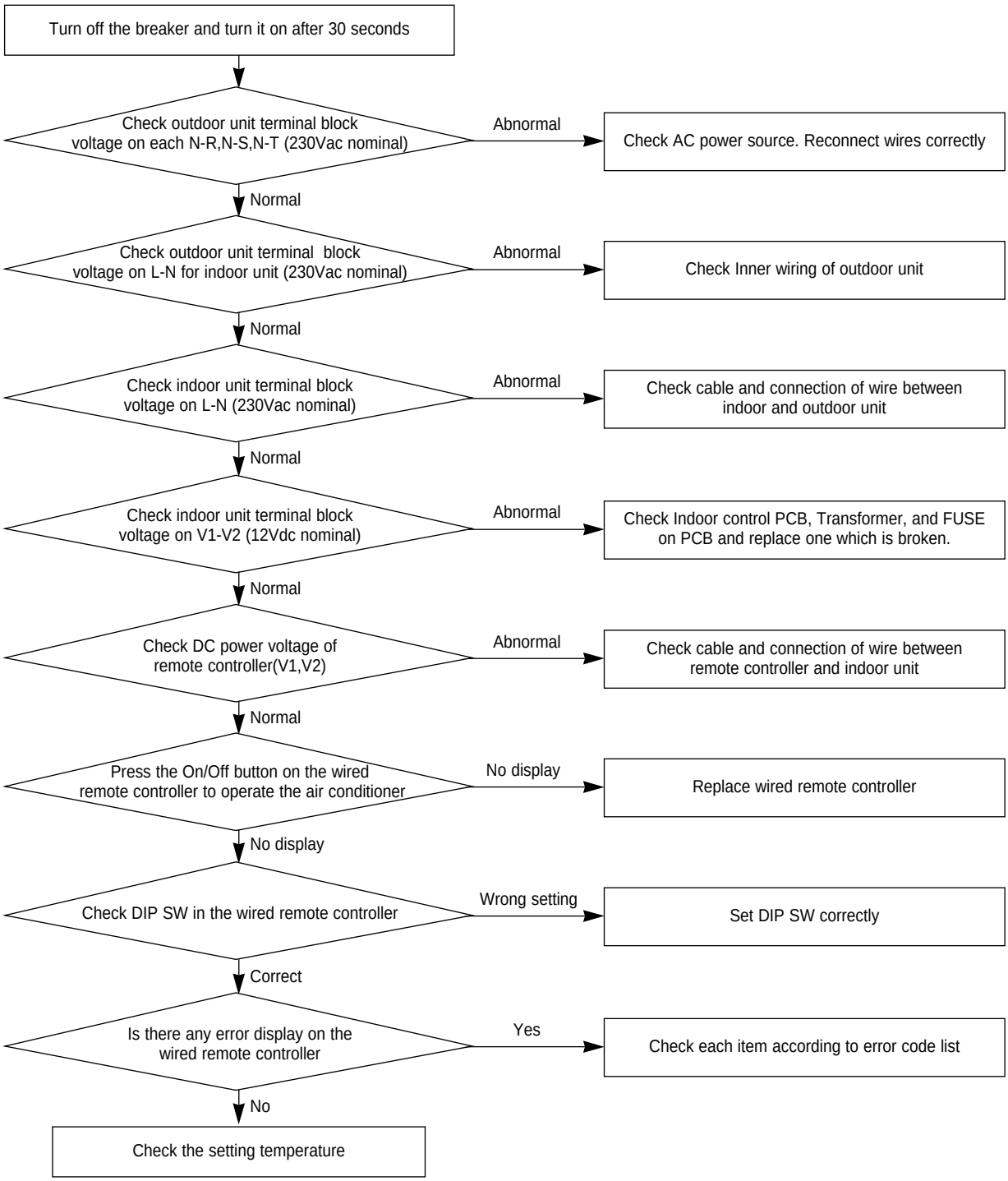
3-2. UH105GAV/UH140GAV Only

1) No Power(completely dead)-Initial Diagnosis

(1) Checklist :

- ◆ Is Power source voltage normal?
- ◆ Is AC power linked correctly?(miss-wiring, wire detaching etc.)
- ◆ Is any LED on the MAIN PCB of Outdoor unit lit?
- ◆ Is terminal voltage for indoor unit normal?(230Vac nominal)
- ◆ Is Wired remote controller installed correctly?

(2) Troubleshooting procedure

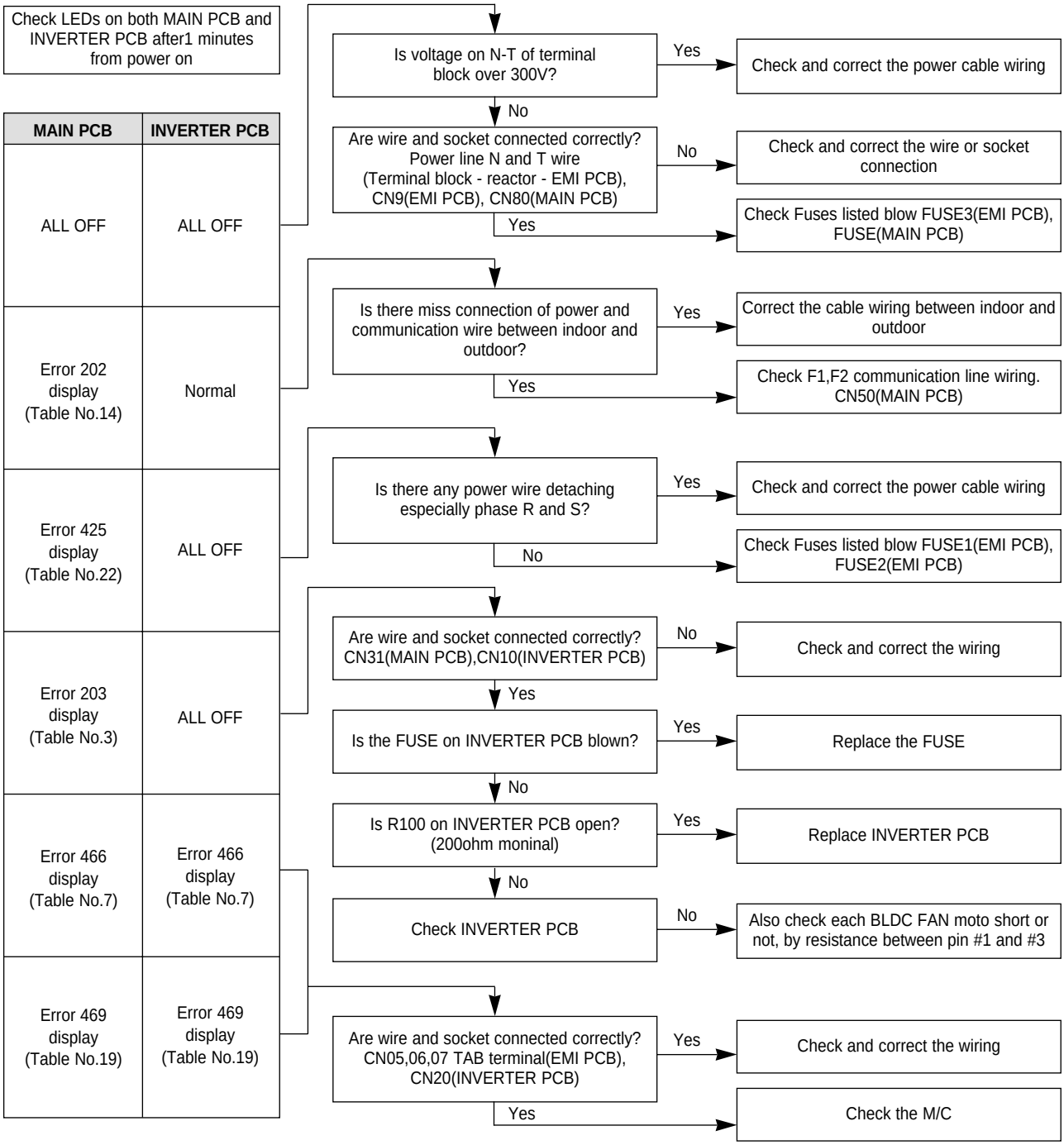


2) The Outdoor Unit Power Supply Error

(1) Checklist :

- ◆ Are the input power voltage and power connection correct?
- ◆ Is there any Fuse Short of the indoor or outdoor unit?
- ◆ Is any LED lit on both MAIN PCB and INVERTER PCB?
- ◆ Are Reactor wires of the outdoor unit connected correctly?

(2) Troubleshooting procedure



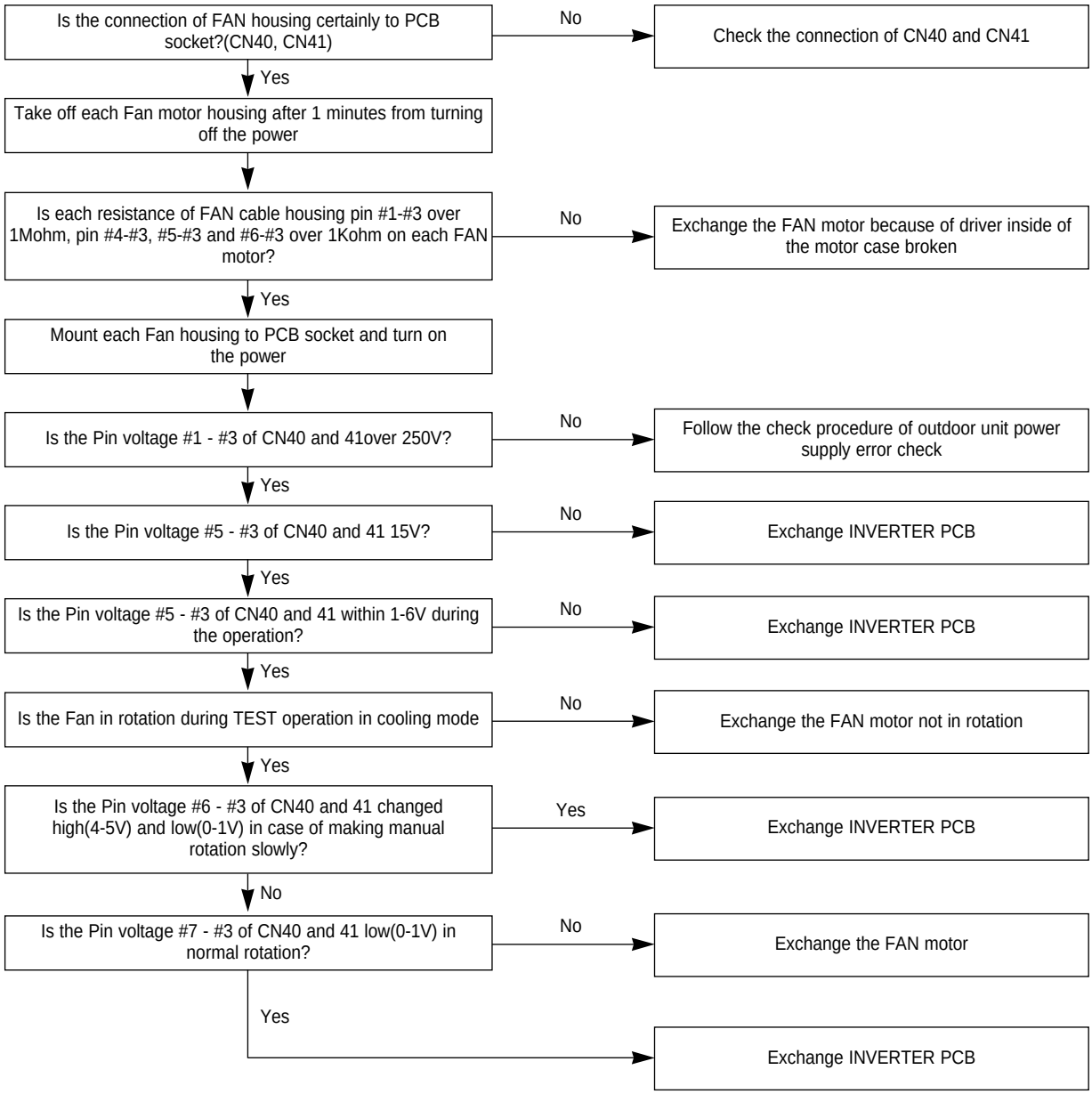
3-2. UH105GAV/UH140GAV Only

3) The Outdoor Unit Fan Error

(1) Checklist :

- ◆ Are the input power voltage and power connection correct?
- ◆ Is the motor wire connected to the outdoor PCB correctly?
- ◆ Is there no obstacle at the surrounding of motor and propeller?
- ◆ Does the driver in the motor case broken?

(2) Troubleshooting procedure



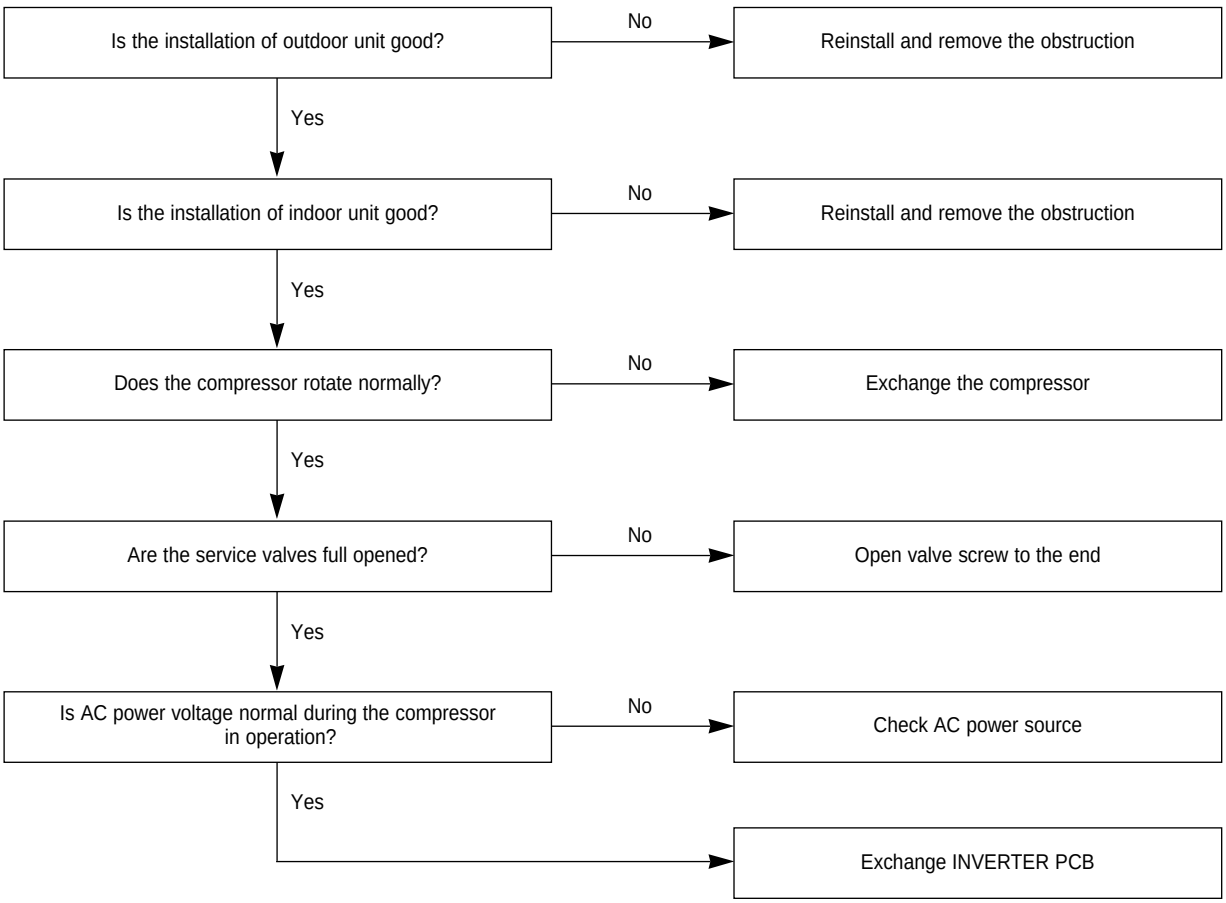
✳ **TEST operation**
press K900 button on the MAIN PCB after power on.
- once : cooling mode
- twice in a second : heating mode

4) Total Current Trip Error

(1) Checklist :

- ◆ Is the input power voltage proper?
- ◆ Is the refrigerant charged properly?
- ◆ Does the compressor rotate normally?(Reverse rotation, Locking etc.)
- ◆ Does the outdoor fan operate normally?(Fan propeller loss, Motor error ect.)
- ◆ Is the installation condition of outdoor unit good?(Piping, Space etc.)
- ◆ Is there no ventilation obstruction at the surrounding of outdoor unit?(Outdoor unit cover, Fan front obstruction etc.)
- ◆ Is there no ventilation obstruction at the surrounding of indoor unit?(Overload condition in heating mode)

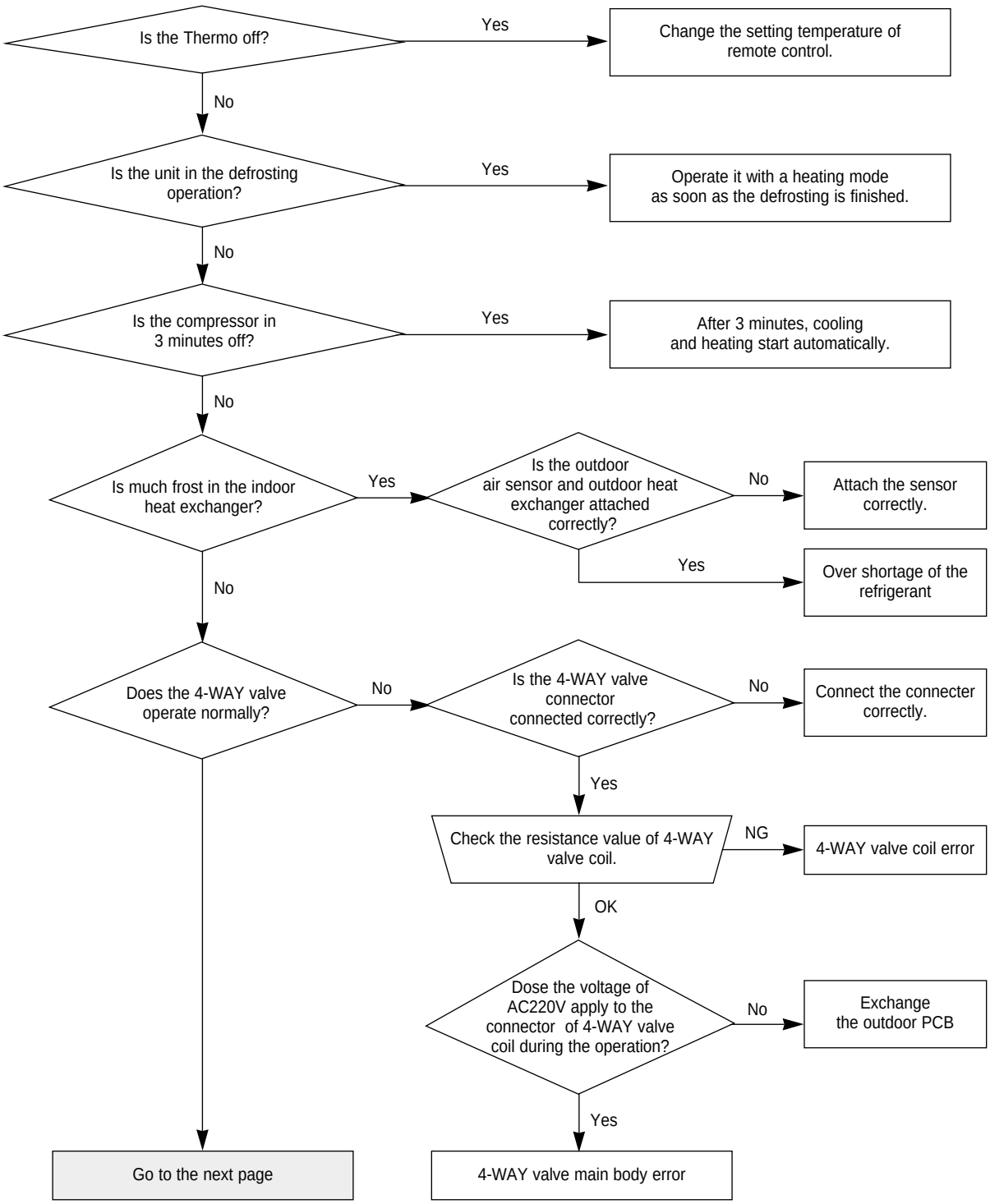
(2) Troubleshooting procedure

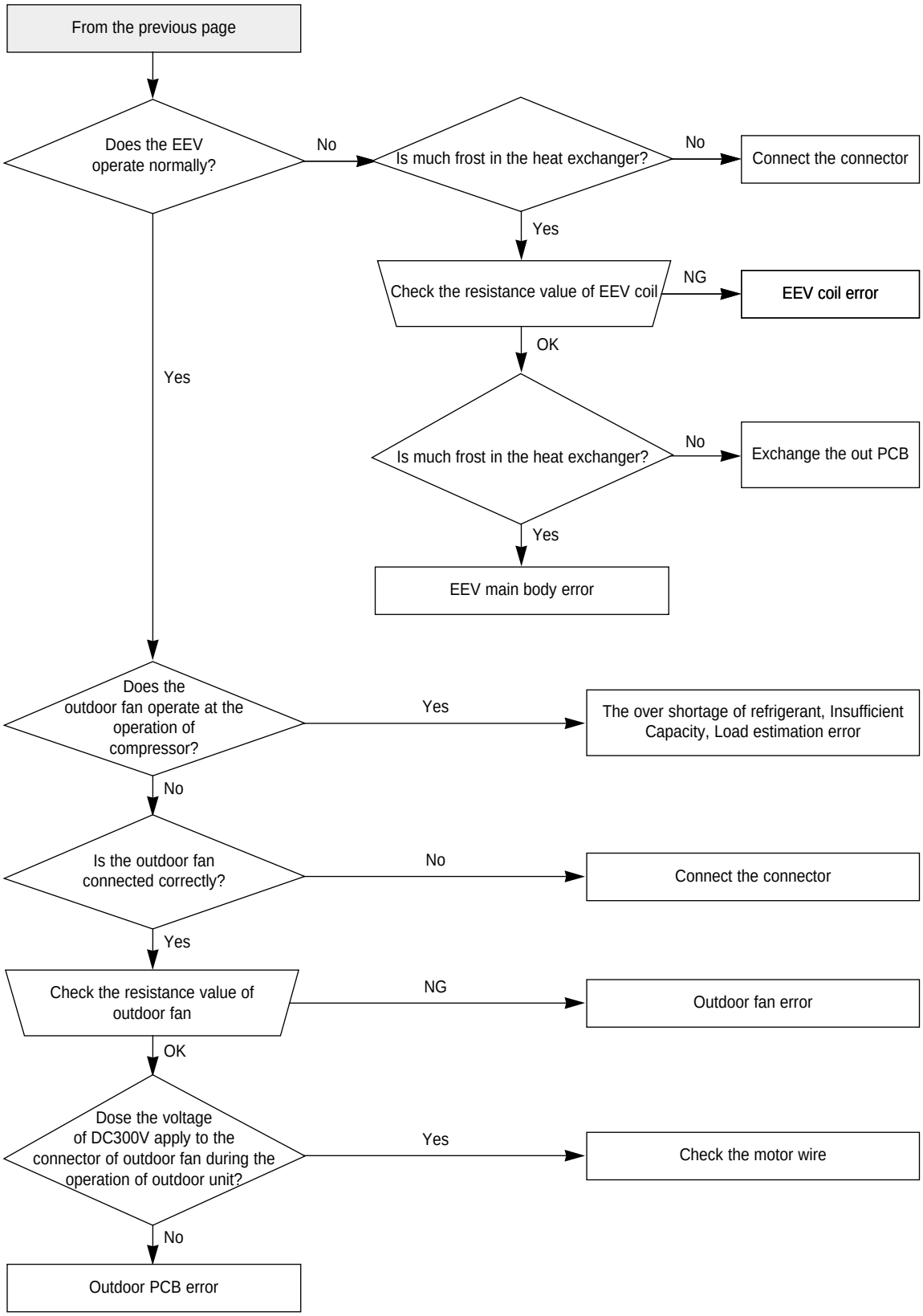


3-2. UH105GAV/UH140GAV Only

5) In Case of Heating at the Cooling Mode or Cooling at the Heating Mode

(1) Troubleshooting procedure




From the previous page
Does the EEV operate normally?
No
Is much frost in the heat exchanger?
No
Connect the connector
Yes
Check the resistance value of EEV coil
NG
EEV coil error
OK
Yes
Is much frost in the heat exchanger?
No
Exchange the out PCB
Yes
EEV main body error
Does the outdoor fan operate at the operation of compressor?
Yes
The over shortage of refrigerant, Insufficient Capacity, Load estimation error
No
Is the outdoor fan connected correctly?
No
Connect the connector
Yes
Check the resistance value of outdoor fan
NG
Outdoor fan error
OK
Dose the voltage of DC300V apply to the connector of outdoor fan during the operation of outdoor unit?
Yes
Check the motor wire
No
Outdoor PCB error

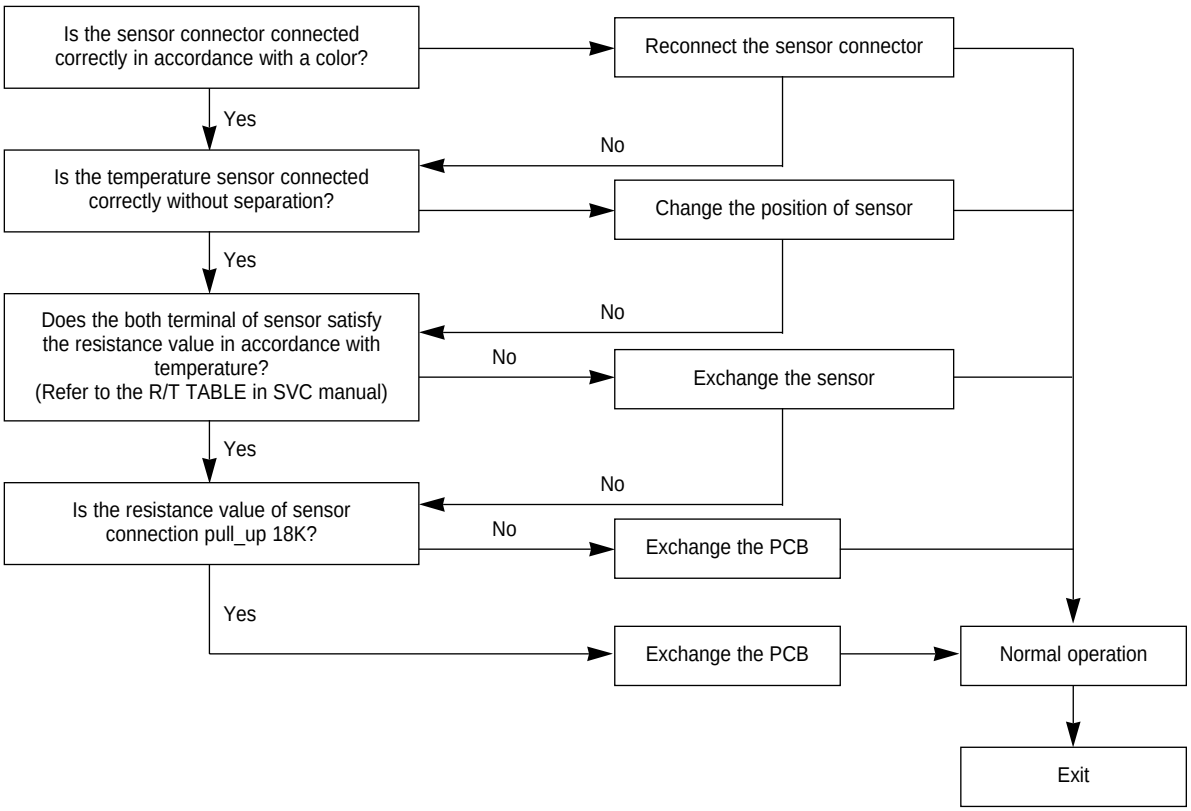
3-2. UH105GAV/UH140GAV Only

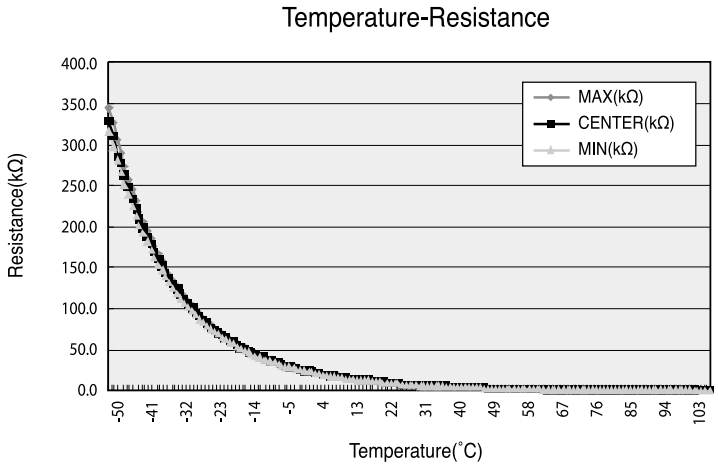
6) Outdoor Temperature Sensor Error

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure



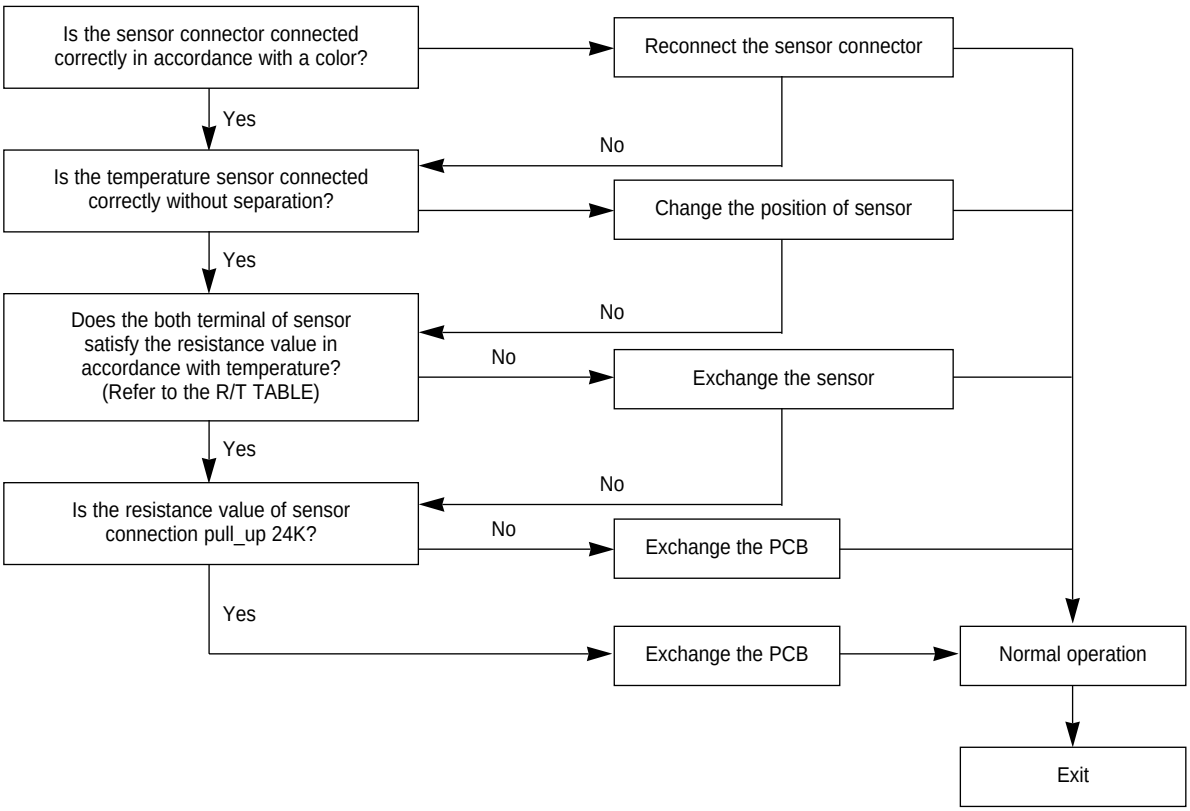


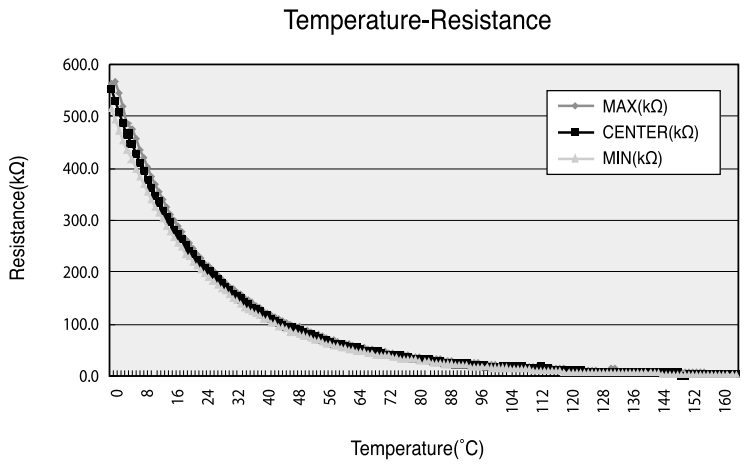
7) Discharge Temperature Sensor Error

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure





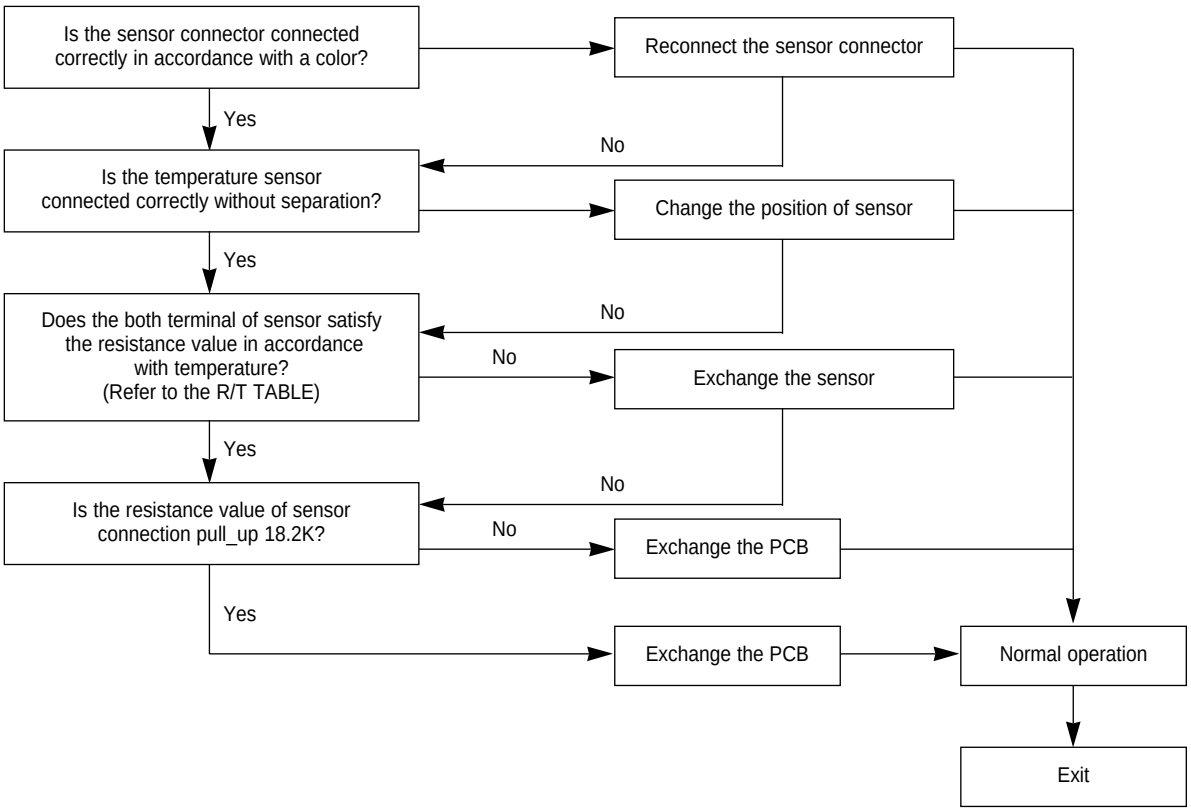
3-2. UH105GAV/UH140GAV Only

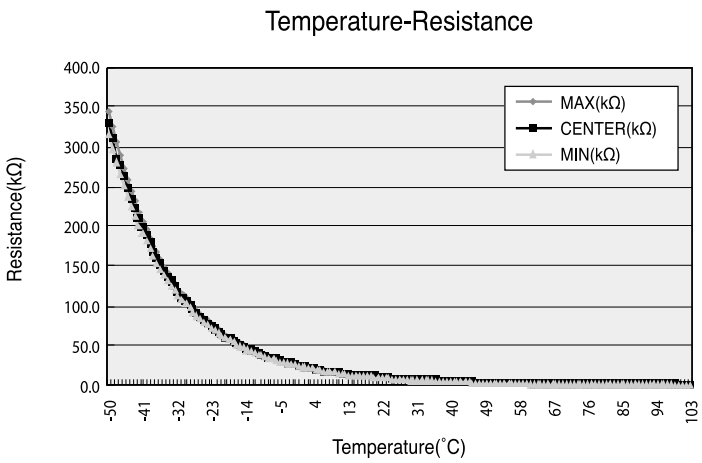
8) Coil Temperature Sensor Error

(1) Checklist :

- ◆ Is the sensor connector connected correctly?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure



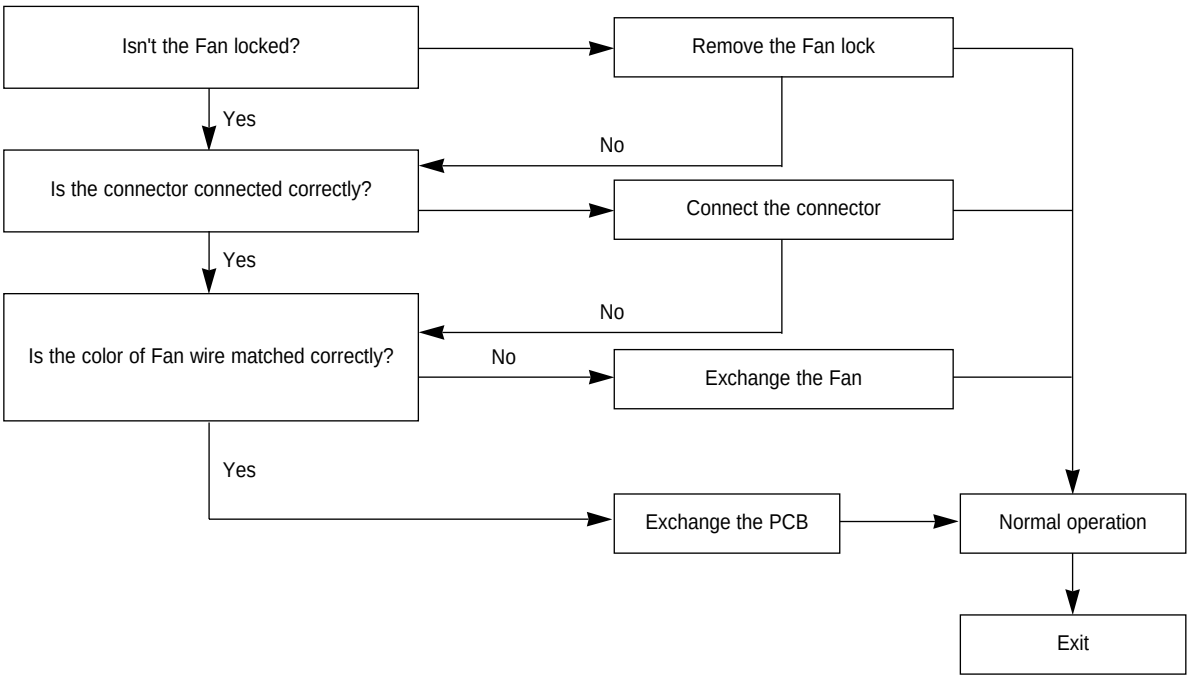


9) Fan Error

(1) Checklist :

- ◆ Isn't the fan locked?
- ◆ Is the sensor placed correctly?
- ◆ Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- ◆ Is the resistance value of sensor connection pull_up correct?

(2) Troubleshooting procedure



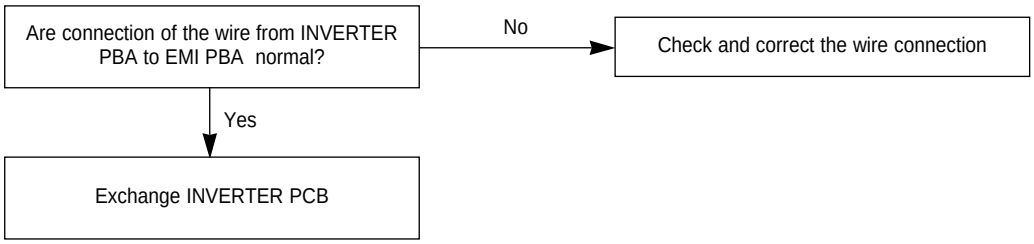
3-2. UH105GAV/UH140GAV Only

10) Discharge Temperature Sensor Error

(1) Checklist :

- ◆ Is the connection of R, S, T power wire normal?
- ◆ Are Relay RY21 and R200 on the INVERTER PCB mounted normally?

(2) Troubleshooting procedure

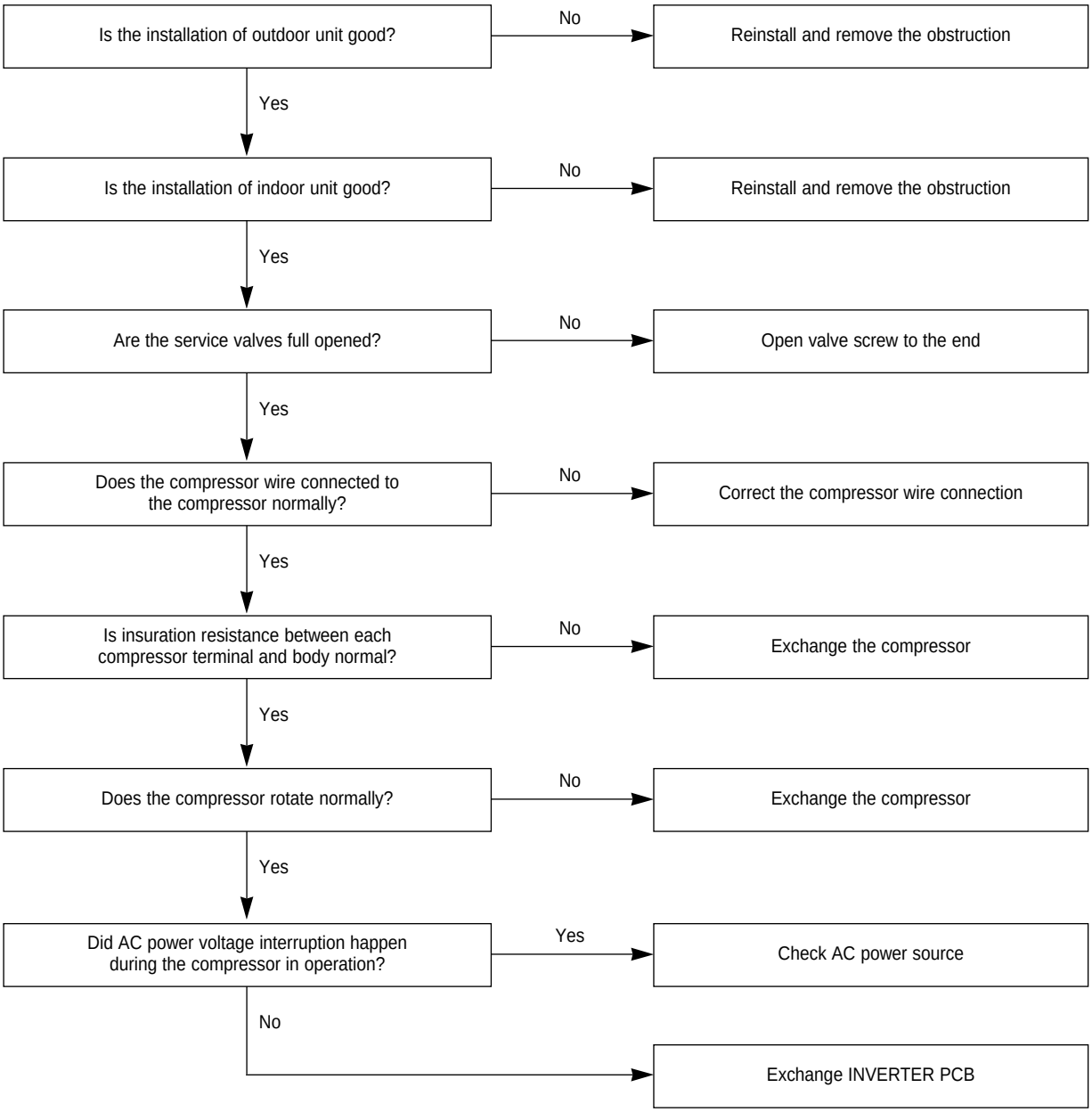


11) O.C.(Over Current) Error

(1) Checklist :

- ◆ Is the refrigerant charged properly?
- ◆ Does the compressor rotate normally?(Reverse rotation, Locking etc.)
- ◆ Is connection of compressor wire normal?
- ◆ Is compressor motor normal?(Insulation, Coil resistance etc.)
- ◆ Does a temporary cycle overload condition happened?

(2) Troubleshooting procedure



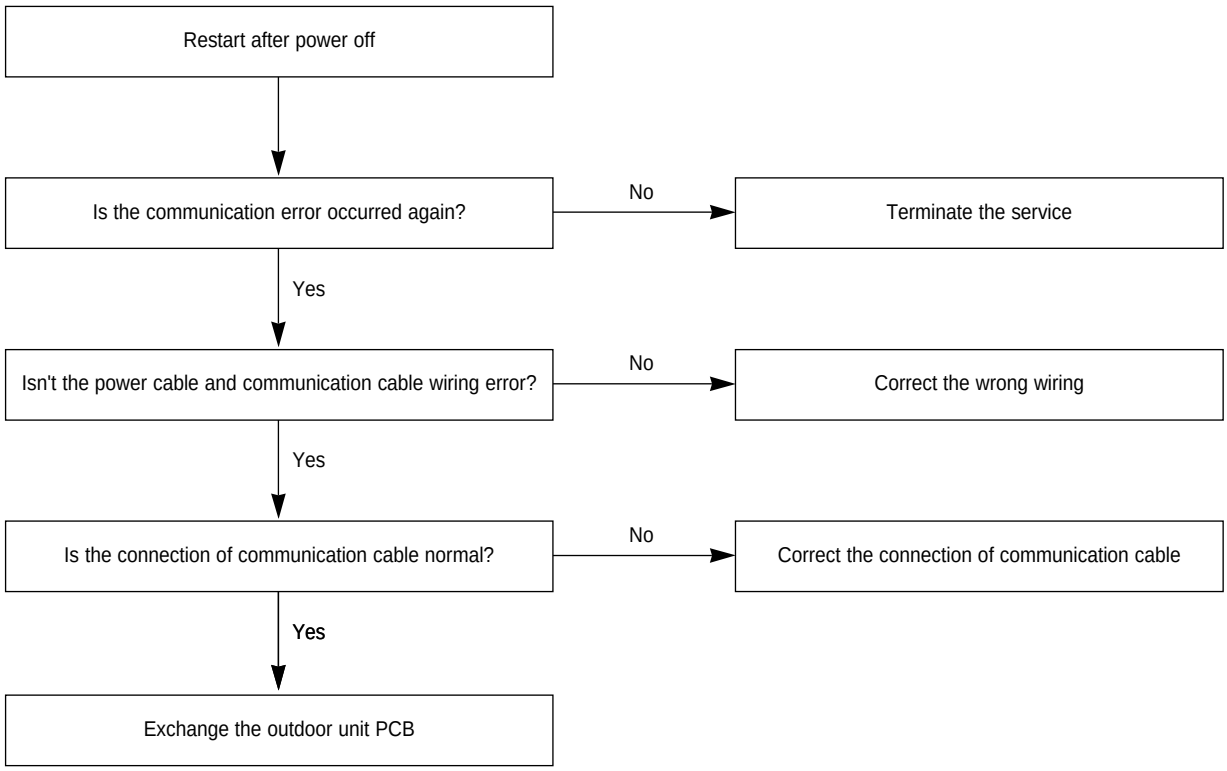
3-2. UH105GAV/UH140GAV Only

12) Communication Error

(1) Checklist :

- ◆ Is the connection of cable for the compressor and power?
- ◆ Is the interphase resistance of compressor normal?

(2) Troubleshooting procedure

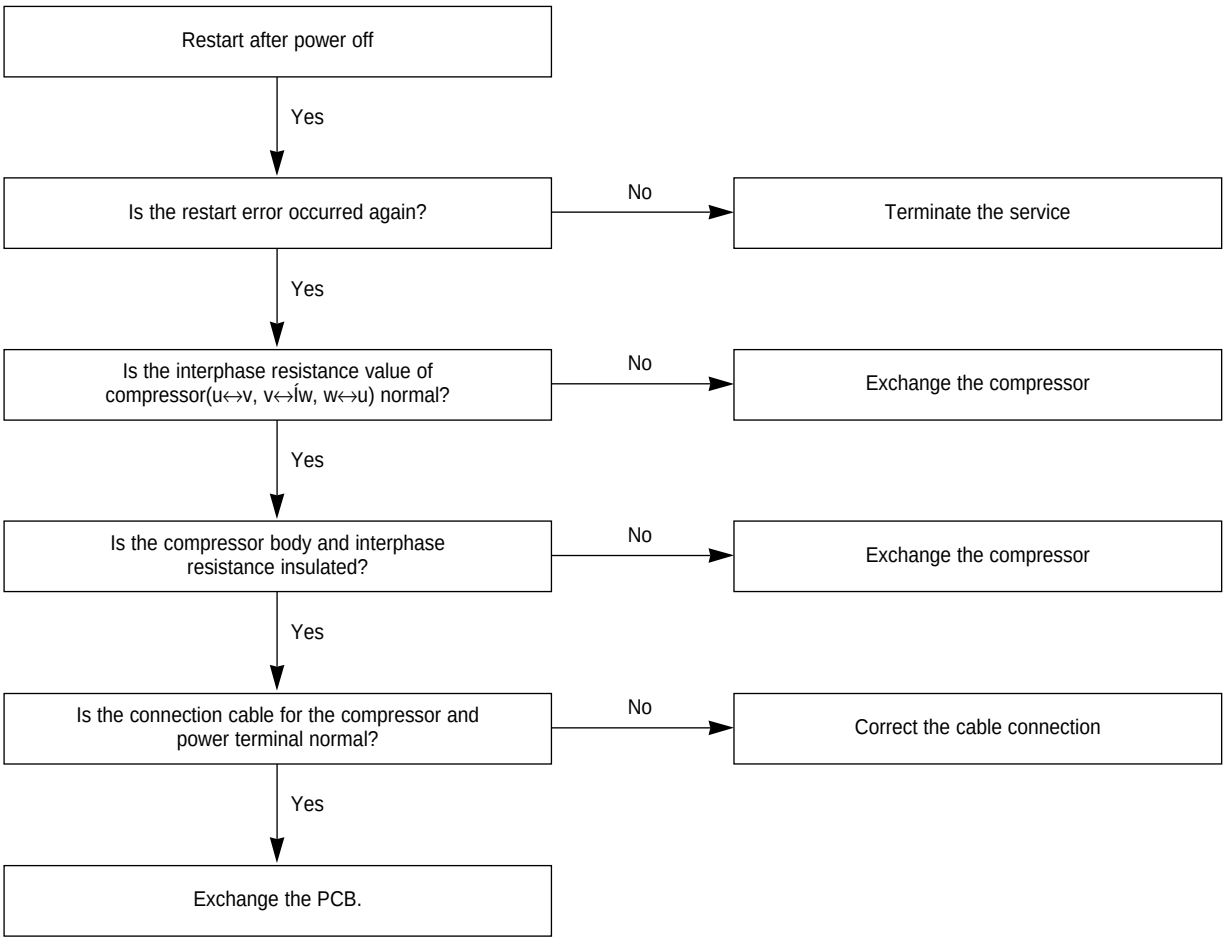


13) Communication Error

(1) Checklist :

- ◆ Is the communication cable between the indoor unit and outdoor unit connected correctly?
- ◆ Isn't the power cable and communication cable wiring error?

(2) Troubleshooting procedure



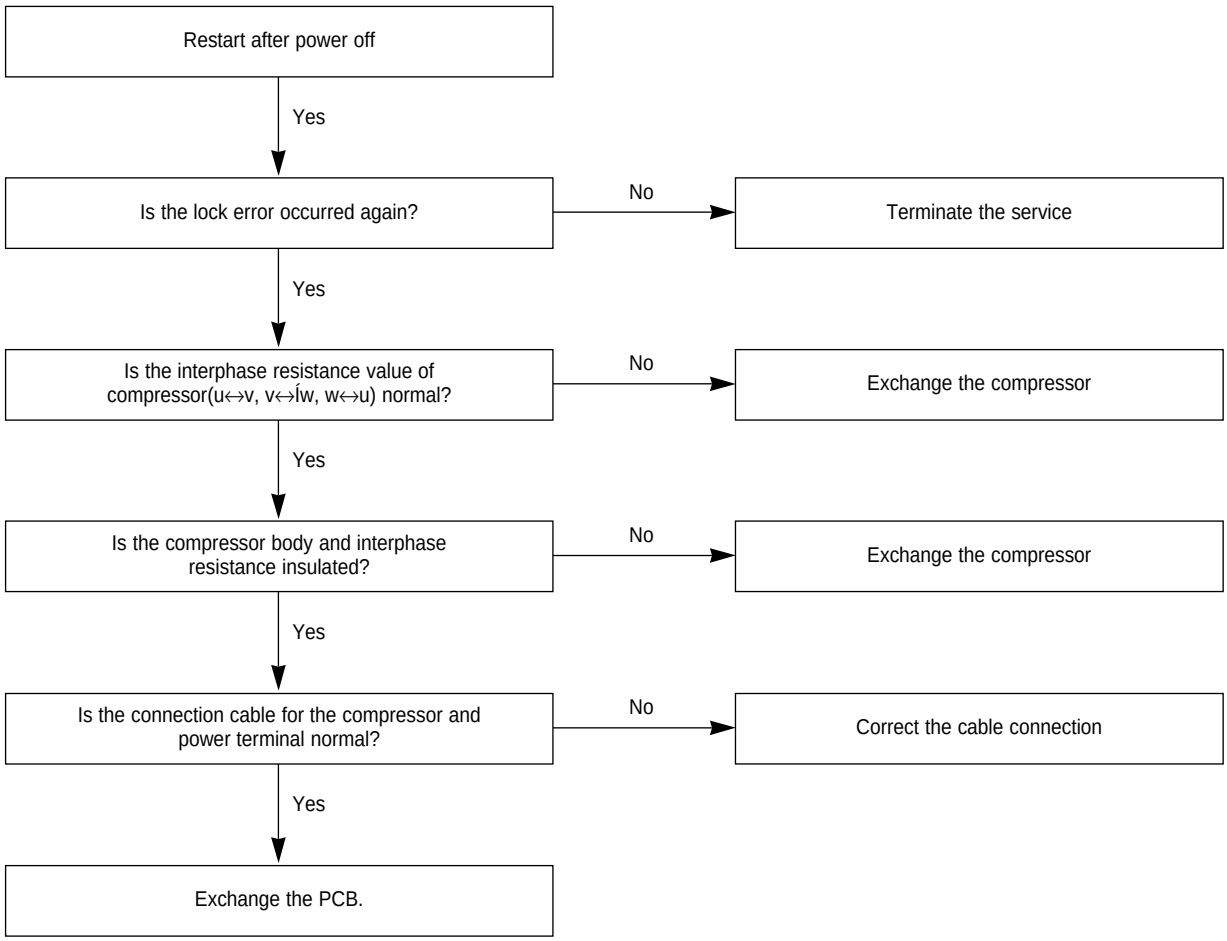
3-2. UH105GAV/UH140GAV Only

14) Compressor Lock Error

(1) Checklist :

- ◆ Is the connection of cable for the compressor and power?
- ◆ Is the interphase resistance of compressor normal?

(2) Troubleshooting procedure

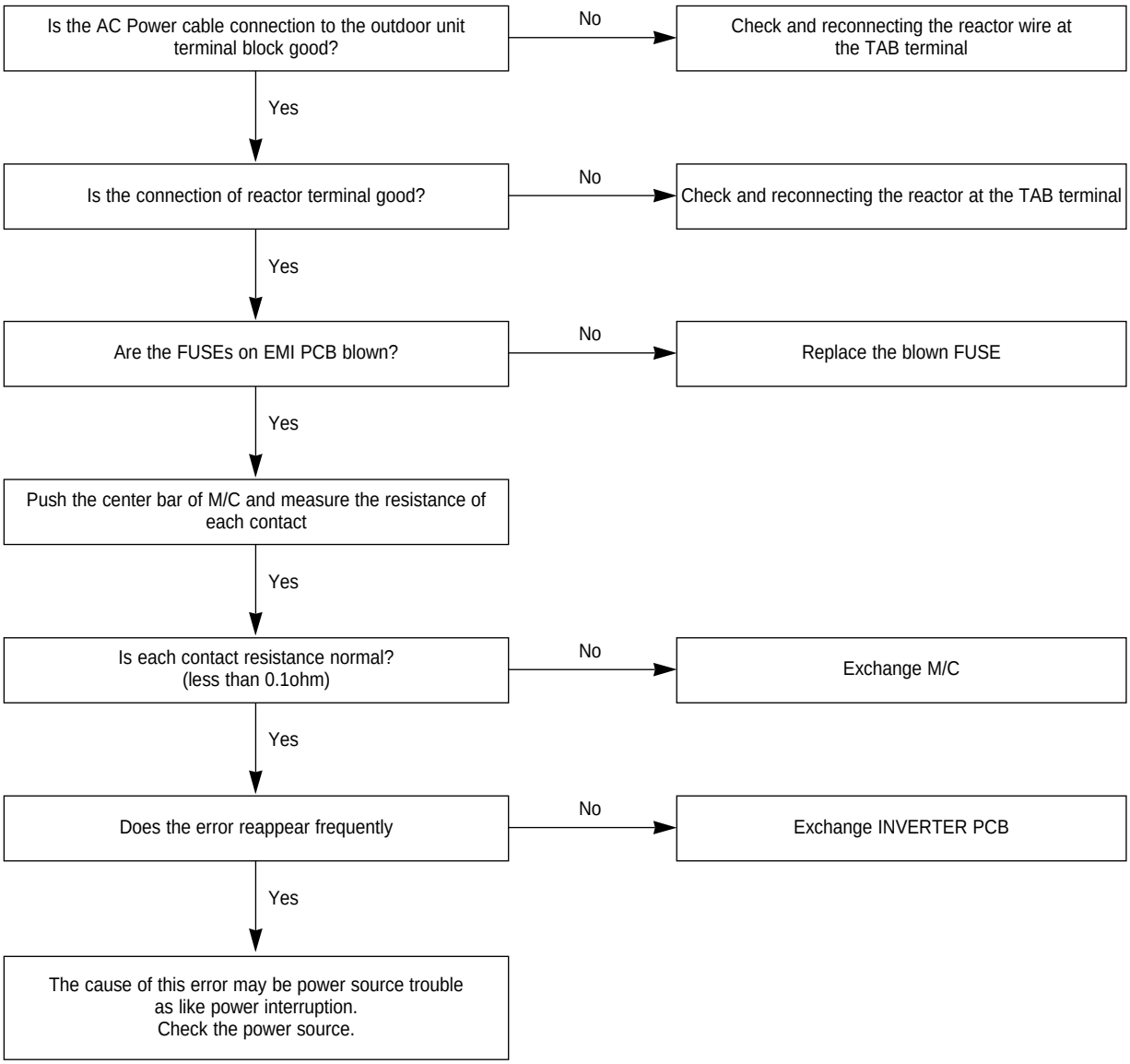


15) DC Link Over Voltage/ Low Voltage Error

(1) Checklist :

- ◆ Is the power voltage normal?(Lightning, Power interruption etc.)
- ◆ Is AC Power cable connection normal?(Detaching the wire)

(2) Troubleshooting procedure



16) The Others

(1) Capacity miss match

- ◆ Check again the indoor unit option code.

4. PCB Inspection

4-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

1) Pre-inspection Notices

(1) Check if you pulled out the AC power plug when you eliminate the PCB or front panel.
(2) Don't hold the PCB side not impose excessive force on it to eliminate the PCB.
(3) Don't pull the lead wire but hold the whole housing to connect or disconnect a connector to the PCB.
(4) In case of outdoor PCB disassembly, check first the complete discharge of condenser(C101) after 30 seconds power off.

2) Inspection Procedure

(1) Check connector connection and peeling of PCB or bronze coating pattern when you think the PCB is broken.
(2) The PCB is composed of the 3 parts.
- Indoor Main PCB Part : MICOM and surrounding circuit, relay, room fan motor driving circuit and control circuit, sensor driving circuit, power circuit of DC12V and DC5V, and buzzer driving circuit.
- Display part : LED lamp, Switch, Remote controller module
- Outdoor Main PCB part : MICOM and surrounding circuit. IPM and PFC circuit and control circuit.
- EMI PCB Part : Line filter and Noise Capacitor, Varistor

3) Detailed Inspection Procedure

No.	PROCEDURE	INSPECTION METHOD	CAUSE
1	Plug out and pull the PCB out of the electronic box. Check the PCB fuse.	1) Is the fuse disconnected?	• Over current • Indoor Fan Motor Short • AC Part Pattern Short of the MAIN PCB
2	Supply power. If the operating lamp twinkles at this time, the above 1)~3)have no relation.	Checking the power voltage.	
		1) Is the DB71 input voltage AC200V~AC240V?	• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.
		2) Is the voltage between both terminals of the C104 on the 2nd side of the transformer DC12V ±0.5V?	• Switching Trans or Power Circuit is faulty
		3) Is the voltage between both terminals of OUT and GND of IC02(KA7805) DC5V ±0.5V?	• Power Circuit is faulty, Load Short
3	Press the ON/OFF button. 1. FAN Speed [High] 2. Continuous Operation	1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN73)?	• Fan Motor of the indoor is faulty
		2) The fan motor of the indoor unit doesn't run.	• Fan Motor Connector(CN73) is faulty
		3) The power voltage between terminal #3 and #5 of the connector(CN73) is 0V.	• ASS'Y Main PCB is faulty • Connection is faulty

4) Outdoor Detailed Inspection Procedure

No.	PROCEDURE	INSPECTION METHOD	CAUSE
1	Wait 30 seconds over after disconnecting the power cable Check the outdoor PCB.	1) Is C101 discharged? 2) Is the resistance of both terminals of C101 opened? 3) Is the fuse of EMI PCB normal? 4) Is the reactor wire connected?	• Over Current • Inner short of PCB • BLDC FAN Motor Error
2	Check the outdoor unit PCB.	1) Is R001 200ohm? 2) Does RY503 operate normally? (IC55 & 8: 0V, 4: 5V) 3) Is the fuse normal?	• Outdoor PCB Error • Relay(RY503) Error • IC55 Error
3	Check the LED lighting after power supply.	1) Normal: Red: Light On, Green: Flickering, Yellow : Light Off? 2) Is the voltage of C101 250V over? 3) Is the input of IC19 8V, and the output 5V? 4) Recheck after disassembling BLDC FAN Wire.	• Inner short of outdoor PCB • Wrong assembly of outdoor PCB • BLDC FAN Error
4	Check the condition of indoor & outdoor connection cable.	1) Is the green LED light on once per second? 2) Is the indoor & outdoor connection cable connected in order? 3) Is the grounding wire connected to the both of indoor & outdoor unit?	• Wrong connection of Indoor/Outdoor wiring • Wrong assembly of outdoor communication circuit
5	Check the Comp Wire.	1) Is it connected red,blue,and yellow in order in counter clockwise. 2) Are the valve and its installation condition good? 3) Is the installation condition of outdoor unit?	• Wrong assembly • Installation condition is bad.
6	Check the BLDC Fan.	1) Is CN01 1, 3 over 250V? 2) Is CN01 3, 5 within 1V~5V? 3) Is the voltage of CN01 6 changed? 4) Is the resistance of BLDC Motor 1, 3 opened after power off?	• Outdoor PCB Error • BLDC Motor Error

4-2. UH105GAV/UH140GAV Only

1) Pre-inspection Notices

(1) Turn off the breaker, AC power source, before disassembling the unit because of electrical hazard.
(2) Confirm the complete discharge of capacitor C102, C702, C703, C704, C705, C706, C707 on the INVERTER PCB when you touch the PCB.Especially discharging speed of C702-C707 is very slow because of little load in stand-by condition. To confirm the voltage of C702-C707, measure the DC link voltage at the IGBT module pins near C701 at which applying voltage(450-510Vdc) is marked. To confirm discharging of C102, measure the voltage of non mounted C103 solder hole or check if all LEDs are off.
(3) Don't touch the metal body of electrolytic capacitor for avoiding electrical shock before confirming discharge.
(4) To discharging the capacitor use power resistor of about 1 Kohm, 10W.
Soldering tool(non electronic temperature control type) can be used as a discharging resistor.
(5) Don't pull the lead wire but hold the whole housing to disconnect or connect a housing from or to the PCB.

2) Inspection Procedure

(1) Check the connection of each housing to the connector first and the peeling of PCB copper pattern.
(2) The PCB is composed of the 3 part in the indoor unit.
- INDOOR Main PCB part : Indoor unit control, MICOM and surrounding circuit, relay, fan motor driving circuit, sensor reading circuit, buzzer driving circuit and DC power supplying circuit.
- Display PCB part : LED lamps, Switch,Remote controller module.
- INDOOR EMI PCB part : Line filter, Noise Capacitor and Varistor

(3) The PCB is composed of the 3 part in the outdoor unit.
- EMI PCB part : Line filter for electrical noise, Varistors for surge and Fuses.
- MAIN PCB part : Refrigeration cycle controller with MICOM
- INVERTER PCB part : Compressor driving inverter and BLDC fan controller

3) Indoor Detailed Inspection Procedure

No.	PROCEDURE	INSPECTION METHOD	CAUSE
1	Open the electronic component box and check the PCB fuse	Turn off the power 1) Is the Fuse F701 on the EMI PCB blown? 2) Is the Fuse F702 on the MAIN PCB blown?	• Over current • Indoor fan motor short • PCB AC Part pattern short
2	Check the LEDs for DC power and communication condition	Turn on the power 1) Is RED LED blinking? his led means micom is running normally. 2) Is GREEN LED blinking? This means communication between Indoor and Outdoor unit is on 3) Is YELLOW LED blinking? This means communication between Indoor and wired remote controller is on. It may take one minute to start communication	• Communication circuit trouble • Communication wire connection trouble • wrong connection for power supply wire of remote controller
3	Check the DIP and rotary switch on the PCB	1) Is the setting of each switch proper?	• Wrong setting of switch
4	Check the DC voltage	1) Is the voltage of CN32 pin #1-#2 12V? 2) Is the voltage of C10 pin #9-#10 5V?	• SMPS on MAIN PBA trouble • Load short
5	FAN operation checking Press the ON/OFF button. 1. FAN Speed[HIGH] 2. FAN mode	1) Is the FAN motor running? 2) Is the connection of CN73 normal?	• Controller trouble inside of the fan motor • Connector trouble of CN73

4) Outdoor Detailed Inspection Procedure

No.	PROCEDURE	INSPECTION METHOD	CAUSE
1	Turn OFF the power and check wire and sock-et connection on each part	Wait until C702-C707 discharged 1) Is connection of housing to socket normal? 2) Is connection of each wire to terminal block normal? 3) Is the reactor wire connection normal? 4) Is there no miss-wiring of each cable?	• installation mistake • miss assembling
2	FUSE check	Is the fuses on each PCB normal? 3 fuses on EMI PCB 1 fuse on MAIN PCB 1 fuse on INVERTER PCB	• wire short • overload • BLDC FAN short error
3	Turn on the power and check voltage of terminal block	Is N-R,N-S,N-T around 230Vac? Is R-S,S-T,T-R around 400Vac? Is L-N(to indoor unit) around 230Vac? Is F1-F2 within 5Vdc?	• miss wiring of power cable • wire detaching
4	Check LED display on AIN PCB	1) Is RED LED ON? 2) Is GREEN LED Blinking once a second? 3) Is LEDs displaying error code pattern?	• MAIN PCB power trouble • bad communication between indoor and out-door unit • error detection
5	Check LED display on INVERTER PCB	1) Is RED LED ON? 2) Is GREEN LED Blinking once a second? 3) Is LEDs displaying error code pattern?	• INVERTER PCB power trouble • NO communication between MAIN and INVERTER PCB • error detection
6	Check DC voltage of SMPS output	**MAIN PCB** 1) Is voltage of CN51 pin#1-#2 12-14.5V? 2) Is voltage of C108 5V? **INVERTER PCB** 3) Is voltage of CN51 pin#1-#2 5V? 4) Is voltage of C124 12V? 5) Is voltage of each ZD100,ZD101,ZD102,ZD103 17-18V?	• SMPS circuit trouble
7	Check INVERTER PCB	1) Is resistance of R100 200ohm? To check this, touch one probe to CN10 pin#1(N) and the other to D101 upper side pin of '~' mark-ing pins 2) Is DC Link voltage 450-510V? Check IGBT module pins marking voltage near C701	• resister • wire connection between EMI PCB and INVERTER PCB
8	Check BLDC fan	1) See 12-2-3 The Outdoor unit Fan error (Fault Diagnosis)	

5. Main Inspection

5-1. UH026EAV/UH035EAV/UH052EAV/UH060EAV/UH070EAV Only

<table>
<tr><th>PART</th><th colspan="2">BREAKDOWN INSPECTION METHOD</th></tr>
<tr><td rowspan="3">Room Temperature Sensor</td><td colspan="2">Measure resistance with a tester</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~8.3kΩ(-7˚C~+30˚C)</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Room Fan Motor</td><td colspan="2">Measure the resistance between terminals of the connector(CN73) with a tester.</td></tr>
<tr><td>Normal</td><td>At the normal temperature(10˚C~30˚C)
<table>
<tr><th>Compare terminal</th><th>Resistance</th><th>Remark</th></tr>
<tr><td>Yellow, Blue</td><td>404.4Ω ±10%</td><td>Main</td></tr>
<tr><td>Yellow, Red</td><td>340Ω ±10%</td><td>Sub</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Stepping Motor</td><td colspan="2">Measure the resistance between the red wire and each terminal wire with a tester.</td></tr>
<tr><td>Normal</td><td>About 300Ω at the normal temperature(20˚C~30˚C)</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
</table>

5-2. UH105GAV/UH140GAV Only

<table>
<tr><th>PART</th><th colspan="2">BREAKDOWN INSPECTION METHOD</th></tr>
<tr><td rowspan="3">Indoor Unit Temperature Sensor</td><td colspan="2">Measure sensor resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~8.3kΩ(-7˚C ~ +30˚C)</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Indoor Unit BLDC FAN Motor</td><td colspan="2">Measure terminal resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature(10˚C ~ 30˚C)
<table>
<tr><th>Wire</th><th>pin number</th><th>Resistance</th><th>Remark</th></tr>
<tr><td>RED - BLACK</td><td>1-3</td><td>over 1MΩ</td><td>+300V motor power</td></tr>
<tr><td>WHITE - BLACK</td><td>4-3</td><td>1K ~ 2KΩ</td><td>+15V control power</td></tr>
<tr><td>YELLOW - BLACK</td><td>5-3</td><td>200K ~ 300KΩ</td><td>control</td></tr>
<tr><td>BLUE - BLACK</td><td>6-3</td><td>10K ~ 50KΩ</td><td>pulse</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Outdoor Unit
Outdoor Temperature Sensor
&
Cond Temperature Sensor</td><td colspan="2">Measure sensor resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~8.3kΩ(-7˚C ~ +30˚C) see 12-2-6 and 12-2-8</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Outdoor Unit
Discharge Temperature Sensor</td><td colspan="2">Measure sensor resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~8.3kΩ(-7˚C ~ +30˚C) see 12-2-6 and 12-2-8</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Outdoor Unit BLDC FAN MOTOR</td><td colspan="2">Measure terminal resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature(10˚C ~ 30˚C)
<table>
<tr><th>Wire</th><th>pin number</th><th>Resistance</th><th>Remark</th></tr>
<tr><td>RED - BLACK</td><td>1-3</td><td>over 1MΩ</td><td>+300V motor power</td></tr>
<tr><td>WHITE - BLACK</td><td>4-3</td><td>1KΩ ~ 2KΩ</td><td>+15V control power</td></tr>
<tr><td>YELLOW - BLACK</td><td>5-3</td><td>200KΩ ~ 300KΩ</td><td>control</td></tr>
<tr><td>BLUE - BLACK</td><td>6-3</td><td>10KΩ ~ 50KΩ</td><td>pulse</td></tr>
<tr><td>ORANGE - BLACK</td><td>7-3</td><td>10KΩ ~ 50KΩ</td><td>reverse</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
<tr><td rowspan="3">Outdoor Unit 4way Valve Solenoid</td><td colspan="2">Measure sensor resistance with a multimeter</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~8.3kΩ(-7˚C ~ +30˚C) see 12-2-6 and 12-2-8</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω · · · Open or Short</td></tr>
</table>

6. Q & A

CLASSIFICATION	CLASS	DESCRIPTION
Cooling	**Q**	**The cooling is weak.**
	A	When it is hot outside, its cooling capacity decreases due to the increase of the ambient temperature. When the dust filter gets blocked or warm outside air gets in, the cooling capacity will decrease. So, make sure to clean the dust filter frequently, prevent heat loss by closing the doors and insulate the cooling area by using curtains, blinds, shades or window tinting.
	Q	**The cooling is good generally. But, it gets weak when it is considerably hot.**
	A	It occurs when the outdoor unit is exposed to direct sun light and heat-up air is not ventilated well. So, set up a sunblind over the outdoor unit and keep stuff away from the unit to increase the ventilation. When the cooling capacity decreases during a heat wave, clean the heat exchanger of the outdoor unit or spray some cold water to the heat exchanger to increase the cooling capability.
	Q	**The cooling is weak. Does it need refrigerant charging?**
	A	It is not correct charging refrigerant regularly. Except that you have moved in several times or the connection pipes are broken, the refrigerant does not run low. So, when refrigerant is additionally charged, it could be costly and cause a product's failure.When the refrigerant leaks, all of it will escape in a short time resulting in cooling failure and no water coming out of the drain hose. So, if water comes out from the drain hose, it indicates the normal operation of the product and it does not need refrigerant charging.
	Q	**It fails to do cooling.**
	A	When the air conditioner is set to Ventilation or the desired temperature is set higher than the current temperature, it fails to do cooling. In this case, select Cooling or set the desired temperature lower.
Leakage	**Q**	**It floods the floor.**
	A	Place the drain hose properly. When it is not placed properly, the drain water would flow back flooding the floor. So, straighten out the drain hose for the water to be drained well.
	Q	**Water drips at the drain connection(service valve) of the outdoor unit.**
	A	When a glass bottle is taken out of the refrigerator, moisture gets condensed on its surface due to the temperature differences. The same principle applies to the air conditioner. When cold refrigerant goes through the copper tube, moisture gets condensed on the surface of the tube and the connection areas. To prevent the water condensation, the pipes are insulated. But, the connection areas of the outdoor unit are not insulated for the purpose of maintenance or repair, and water gets condensed due to the temperature differences and drips down. Generally, it evaporates right away. But, when it drips much during muggy days, put a water pan on the floor.
	Q	**It leaks even though a drain pump is used.**
	A	It occurs when the drain pump is plugged out or it is out of order. Check the power of the drain pump and the position of the drain hose, and when the pump is faulty, contact the drain pump manufacturer. Samsung Electronics do not manufacture drain pumps. So, we are not able to correct the drain pump problems.
Smells	**Q**	**Whenever the air conditioner is turned on, it irritates my eyes and gives me a headache.**
	A	There are no components in the air conditioner irritating the eyes and sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, it occurs at a interior renovated place, a pharmacy, a gasoline handling place, a tire shop, a second-hand book shop or an electronic component handling place; when its chemical or musty smells are sucked in and sent out, it can be misled that the air conditioner generates them. So, find and root out the problem or refresh the room frequently.

CLASSIFICATION	CLASS	DESCRIPTION
Smells	Q	**Whenever the air conditioner is turned on, it stinks.**
	A	There are no components in the air conditioner sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, when the drain hose is taken out to the washing room or there are sources of smells such as a diaper bin, a shoe shelf or a socks bin, bad smells generate. Also, it occurs where glass cleaners or air fresheners are used; when they are sucked in interacting with dusts and moistures inside, bad smells generate. These kinds of organic materials noxious to human bodies. So, we recommend against the use of them.
	Q	**Whenever the air conditioner is turned on, it smells sour.**
	A	When the room is papered recently, its paste smells would be sucked inside. Also, when the air conditioner is installed in the study room of young boys loving sweat-generating activities such as the basketball, excessive sweats evaporate and get sucked into the air conditioner resulting in bad smells.So, find and root out the problem or refresh the room frequently.
	Q	**Whenever the air conditioner is turned on, it smells musty.**
	A	It is due to the improper keeping of the product after its use. When keeping the product,dry up the inside with the operation of Ventilation to prevent must. When the product is kept without drying up the inside with Ventilation, mold would grow inside resulting in must. So, open the windows and switch on the Ventilation function to get rid of the saturated smell inside.
	Q	**Whenever the air conditioner is turned on,it sends out bad smells such as stale smells.**
	A	It occurs generally when there are pet animals in the house. Their smells stay at the same place. But, when the air conditioner is turned on, the air gets circulated resulting in the circulation of the smells. So, find and root out the problem or refresh the room frequently.
	Q	**It sends out bad smells.**
	A	When the air filter is filthy, it could send out bad smells. So, clean the filter and ventilate the room with the windows open while operating the Ventilation function.
Operation	Q	**It won't start.**
	A	There is a power failure or it is plugged out. Also, check if the power distribution panel is switched off.
	Q	**It goes off during operation.**
	A	When the hot air does not escape properly, it goes off during operation. It occurs when it does not ventilate properly because the outdoor unit is covered, the back of the outdoor unit is blocked by a cardboard or a plywood panel, and the front of the outdoor unit is blocked by the closed window or other obstacles. Clear the above obstacles from the outdoor unit.
	Q	**It generally works properly. But, when it's considerably hot, it goes off during operation.**
	A	It occurs when the outdoor unit is exposed to direct sunlight and the hot air does not escape properly. Set up a sun blind over the outdoor unit and clear the neighboring obstacles from the outdoor unit to provide good ventilation. When it goes off frequently during a heat wave, it would prevent the turn-off and increase the cooling capacity cleaning the outdoor unit or spraying some water to the heat exchanger.
	Q	**The remote controller won't operate.**
	A	When the batteries run out or the transmitter or receiver of the remote controller is blocked by obstacles, change the batteries or keep the obstacles away from the controlling area. Also, the remote controller may not work under intensive light from a 3-wave length lamp or a neon sign due to the EMI. In this case, take the remote controller closer to the receiver.

6. Q & A

CLASSIFICATION	CLASS	DESCRIPTION
Installation	**Q**	**Who installs the air conditioner?(Relocation/Re-installation)**
	A	When relocating or re-installing the air conditioner, make sure to contact Samsung Electronics Service Center or Authorized Service Agent and have them to do the job(If not, it could cause personal injury or product damage.) The cost for the relocation/re-installation of the air conditioner is subject to the customer's expense. There is a cost table. But, our service engineer needs to visit to total up the cost correctly. When you move in, make sure to contact Samsung Electronics Service Center or Authorized Service Agent in advance to streamline the process.
	Q	**Is it possible to install the outdoor unit outside?**
	A	It is possible to install it at a designated place in the apartment or on the rooftop nearby. But, it's illegal hanging an angle iron case with the outdoor unit in it outside the apartment. Also, it is illegal obstructing passers-by with the outdoor unit installed outside.
	Q	**What can be done to install the outdoor unit facing the road because it is a commercial building?**
	A	The following is an excerpt from Building Code going into effect from JUNE 1st 2005. "The exhaust pipe of a cooling or ventilation facility installed in a building adjacent to the streets of commercial or residential areas shall be installed higher than 2m to prevent the exhaust air from blowing directly to passers-by and the current facilities shall be corrected by MAY 31st 2005." So, please install it higher than 2m or not to blow the hot exhausting air directly to passers-by.
	Q	**What about installing a windscreen during installation not to blow hot air directly to passers-by?**
	A	When the hot air from the front of the outdoor unit is blocked, the product's performance will be affected and it will fail to operate properly. So, keep it at least 300mm away from its surrounding walls and give it good ventilation.

SAMSUNG ELECTRONICS

Samsung System Appliance Division
Air Conditioning Research & Development Group

416 Maetan-3Dong,Yeongtong-Gu, Suwon City Kyungki-Do, Korea 442-742

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