GREE
Air comfort for all

ETAC III R32

SERVICE MANUAL

Indoor Unit

MODELS:

ETAC3-07HC230VA-CP
ETAC3-09HC230VA-CP
ETAC3-12HC230VA-CP
ETAC3-15HC230VA-CP
ETAC3-07HP230VA-CP
ETAC3-09HP230VA-CP
ETAC3-12HP230VA-CP
ETAC3-15HP230VA-CP
ETAC3-07HC265VA-CP
ETAC3-09HC265VA-CP
ETAC3-12HC265VA-CP
ETAC3-15HC265VA-CP
ETAC3-07HP265VA-CP
ETAC3-09HP265VA-CP
ETAC3-12HP265VA-CP
ETAC3-15HP265VA-CP

Thank you for choosing our product.
Please read this Service Manual carefully before operation and retain it for future reference.

To download an electric version of this manual visit
https://www.greecomfort.com/system-documentation/

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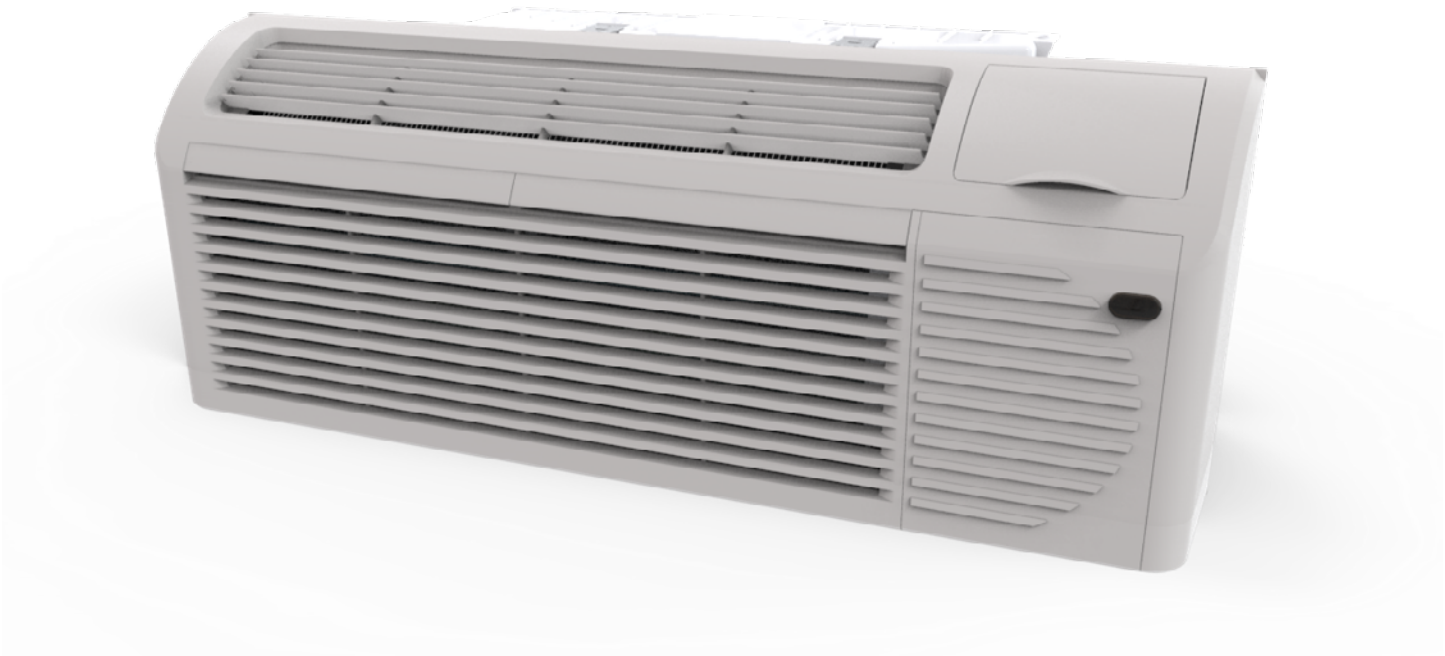
1. Summary

Models:



Model list:

No.	Model	Product Code
1	ETAC3-07HC230VA-CP	CC060066200
2	ETAC3-09HC230VA-CP	CC060065300
3	ETAC3-12HC230VA-CP	CC060064900
4	ETAC3-15HC230VA-CP	CC060065100
5	ETAC3-07HP230VA-CP	CC060064800
6	ETAC3-09HP230VA-CP	CC060065800
7	ETAC3-12HP230VA-CP	CC060066000
8	ETAC3-15HP230VA-CP	CC060065000
9	ETAC3-07HC265VA-CP	CC060065600
10	ETAC3-09HC265VA-CP	CC060065400
11	ETAC3-12HC265VA-CP	CC060066300
12	ETAC3-15HC265VA-CP	CC060065500
13	ETAC3-07HP265VA-CP	CC060065200
14	ETAC3-09HP265VA-CP	CC060066100
15	ETAC3-12HP265VA-CP	CC060065700
16	ETAC3-15HP265VA-CP	CC060065900

2. Specifications

Model			ETAC3-07HP230VA-CP	ETAC3-07HC230VA-CP
Product Code			CC060064800	CC060066200
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7400/7200	7400/7200
Heating Capacity		Btu/h	6000/5800	/
Cooling Power Input		W	570/560	560/540
Heating Power Input		W	490/470	/
Cooling Power Current		A	2.4/2.6	2.4/2.6
Heating Power Current		A	2.1/2.3	/
Rated Input		W	Cooling:680 Heating:570 Electric Heating:3500/2860,2500/2040	Cooling:680 Electric Heating:3500/2860,2500/2040
Rated Current		A	Cooling:3.3 Heating:2.7 Electric Heating:15.2/13.8,10.9/9.8	Cooling:3.2 Electric Heating:15.2/13.8,10.9/9.8
EER		(Btu/h)/W	13.0/13.0	13.3/13.3
SEER			/	/
COP		(Btu/h)/W	12.3/12.3	/
Air Flow Volume		CFM	312/282	312/282
Dehumidifying Volume		Pint/h	1.69	1.69
Application Area		yd^2	12-19	12-19
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	112.4	110.2
Gross Weight		lb	124.6	122.4
Refrigerant		/	R32	R32
Refrigerant Charge		oz	27.51	17.64

Indoor Side	Electric Heater Power Input	W	3450/2830,2450/2010	3450/2830,2450/2010
	Electric Heater Power Current	A	15.0/13.6,10.7/9.7	15.0/13.6,10.7/9.7
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1000/890	990/880
	Heating Speed	r/min	1000/890	990/880
	Fan Motor Power Output	W	18	18
	Fan Motor RLA	A	0.1	0.1
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	50/46	50/46
	Sound Power Level	dB (A)	60/56	60/56
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-A056rD130	QXF-A056rD130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	13	13
	Compressor RLA	A	2.16	2.16
	Compressor Overload Protector	--	495	495
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.21	0.21
	Fan Motor Capacitor	μF	2	2
	Outdoor Unit Air Flow Volume	CFM	471	471
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780 × 343 × 34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	62/58	62/57
	Sound Power Level	dB (A)	72/68	72/67

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-07HP265VA-CP	ETAC3-07HC265VA-CP
Product Code			CC060065200	CC060065600
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	7300	7500
Heating Capacity		Btu/h	6000	/
Cooling Power Input		W	560	560
Heating Power Input		W	490	/
Cooling Power Current		A	2.1	2.1
Heating Power Current		A	1.8	/
Rated Input		W	Cooling:745 heating:565 Electric Heating:3500/2500	Cooling:745 Electric Heating:3500/2500
Rated Current		A	Cooling:2.9,heating:2.2 Electric Heating:13.3/9.5	Cooling:2.9 Electric Heating:13.3/9.5
EER		(Btu/h)/W	13	13.3
SEER			/	/
COP		(Btu/h)/W	12.3	/
Air Flow Volume		CFM	312/282	312/282
Dehumidifying Volume		Pint/h	1.69	1.69
Application Area		yd^2	12-19	12-19
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	112.4	110.2
Gross Weight		lb	124.6	122.4
Refrigerant		/	R32	R32
Refrigerant Charge		oz	27.51	17.64

Indoor Side	Electric Heater Power Input	W	3450/2450	3450/2450
	Electric Heater Power Current	A	13.1/9.3	13.1/9.3
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1000/890	1000/890
	Heating Speed	r/min	1000/890	1000/890
	Fan Motor Power Output	W	10	10
	Fan Motor RLA	A	0.14	0.14
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	50/46	50/46
	Sound Power Level	dB (A)	60/56	60/56
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-A056yD130	QXF-A056yD130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	12	12
	Compressor RLA	A	2.2	2.2
	Compressor Overload Protector	--	486	486
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	1.5	1.5
	Outdoor Unit Air Flow Volume	CFM	471	471
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780 × 343 × 34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-19.4~75	-19.4~75
	Sound Pressure Level	dB (A)	62/58	62/57
	Sound Power Level	dB (A)	72/68	72/67

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-09HP230VA-CP	ETAC3-09HC230VA-CP
Product Code			CC060065800	CC060065300
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	9700/9400	10200/9900
Heating Capacity		Btu/h	8500/8200	/
Cooling Power Input		W	800/780	810/790
Heating Power Input		W	690/670	/
Cooling Power Current		A	3.6/3.9	3.6/3.9
Heating Power Current		A	3.1/3.2	/
Rated Input		W	Cooling:1070 Heating:930 Electric Heating:3500/2860,2500/2040	Cooling:1190 Electric Heating:3500/2860,2500/2040
Rated Current		A	Cooling:5.1 Heating:3.9 Electric Heating:15.2/13.8,10.9/9.8	Cooling:5.0 Electric Heating:15.2/13.8,10.9/9.8
EER		(Btu/h)/W	12.1/12.1	12.5/12.5
SEER			/	/
COP		(Btu/h)/W	12.3/12.3	/
Air Flow Volume		CFM	330/282	330/282
Dehumidifying Volume		Pint/h	2.11	2.11
Application Area		yd^2	14-22	14-22
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 6/64 × 15 63/64 × 21 32/64
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 38/64 × 17 56/64
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 10/64 × 25 45/64 × 18 30/64
Net Weight		lb	114.7	110.2
Gross Weight		lb	126.8	122.4
Refrigerant		/	R32	R32
Refrigerant Charge		oz	24.69	17.28

Indoor Side	Electric Heater Power Input	W	3450/2830,2450/2010	3450/2830,2450/2010
	Electric Heater Power Current	A	15.0/13.6,10.7/9.7	15.0/13.6,10.7/9.7
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1060/940	1060/940
	Heating Speed	r/min	1060/940	1060/940
	Fan Motor Power Output	W	21	21
	Fan Motor RLA	A	0.18	0.18
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	699 × 248 × 38.1	699 × 248 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	50/46	50/46
	Sound Power Level	dB (A)	60/56	60/56
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO., LTD.	ZHUHAI LANDA COMPRESSOR CO., LTD.
	Compressor Model		QXF-A078rD130	QXF-A078rD130
	Compressor Oil		68SL or equivalent	68SL or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	17	17
	Compressor RLA	A	3.1	3.1
	Compressor Overload Protector	--	689	689
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	2	2
	Outdoor Unit Air Flow Volume	CFM	471	471
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780 × 343 × 34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	62/58	62/57
	Sound Power Level	dB (A)	72/68	72/67

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-09HP265VA-CP	ETAC3-09HC265VA-CP
Product Code			CC060066100	CC060065400
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	9800	10000
Heating Capacity		Btu/h	8600	/
Cooling Power Input		W	810	800
Heating Power Input		W	690	/
Cooling Power Current		A	3.1	3.2
Heating Power Current		A	2.6	/
Rated Input		W	Cooling:1220 Heating:920 Electric Heating:3500/2500	Cooling:1120 Electric Heating:3500/2500
Rated Current		A	Cooling:3.6 Heating:3.3 Electric Heating:13.3/9.5	Cooling:3.9 Electric Heating:13.3/9.5
EER		(Btu/h)/W	12.1	12.5
SEER			/	/
COP		(Btu/h)/W	12.5	/
Air Flow Volume		CFM	330/283	330/283
Dehumidifying Volume		Pint/h	2.11	2.11
Application Area		yd^2	14-22	14-22
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	114.6	110.2
Gross Weight		lb	126.8	122.4
Refrigerant		/	R32	R32
Refrigerant Charge		oz	24.69	17.28

Indoor Side	Electric Heater Power Input	W	3450/2450	3450/2450
	Electric Heater Power Current	A	13.1/9.3	13.1/9.3
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1060/940	1060/940
	Heating Speed	r/min	1060/940	1060/940
	Fan Motor Power Output	W	21	21
	Fan Motor RLA	A	0.18	0.18
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	699 × 248 × 38.1	699 × 248 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	50/46	50/46
	Sound Power Level	dB (A)	60/56	60/56
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO., LTD.	ZHUHAI LANDA COMPRESSOR CO., LTD.
	Compressor Model		QXF-A078yD130	QXF-A078yD130
	Compressor Oil		68SL or equivalent	68SL or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	15	15
	Compressor RLA	A	3.4	3.4
	Compressor Overload Protector	--	682	682
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1340/1120	1340/1120
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	1.5	1.5
	Outdoor Unit Air Flow Volume	CFM	471	471
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780×343×38.1	780×343×34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	62/58	62/57
	Sound Power Level	dB (A)	72/68	72/67

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-12HP230VA-CP	ETAC3-12HC230VA-CP
Product Code			CC060066000	CC060064900
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12100/11900	12300/12100
Heating Capacity		Btu/h	10900/10700	/
Cooling Power Input		W	1040/1000	1060/1020
Heating Power Input		W	940/900	/
Cooling Power Current		A	4.6/4.9	4.7/5.0
Heating Power Current		A	4.1/4.3	/
Rated Input		W	Cooling:1270 Heating:1130 Electric Heating: 5050/4130,3500/2860,2500/2040	Cooling:1270 Electric Heating: 5050/4130,3500/2860,2500/2040
Rated Current		A	Cooling:6.2 Heating:5.3 Electric Heating: 22.0/19.9,15.2/13.8,10.9/9.8	Cooling:6.2 Electric Heating: 22.0/19.9,15.2/13.8,10.9/9.8
EER		(Btu/h)/W	11.6/11.8	11.6/11.8
SEER			/	/
COP		(Btu/h)/W	11.6/11.8	/
Air Flow Volume		CFM	341/306	341/306
Dehumidifying Volume		Pint/h	2.75	2.75
Application Area		yd^2	19-29	19-29
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 6/64 × 15 63/64 × 21 32/64	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 38/64 × 17 56/64	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 10/64 × 25 45/64 × 18 30/64	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	119	114.6
Gross Weight		lb	131.2	126.8
Refrigerant		/	R32	R32
Refrigerant Charge		oz	28.92	21.16

Indoor Side	Electric Heater Power Input	W	5000/4090,3450/2830,2450/2010	5000/4090,3450/2830,2450/2010
	Electric Heater Power Current	A	21.8/19.7,15.0/13.6,10.7/9.7	21.8/19.7,15.0/13.6,10.7/9.7
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1130/970	1130/970
	Heating Speed	r/min	1130/970	1130/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	53/50	53/50
	Sound Power Level	dB (A)	63/60	63/60
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-B100rT130	QXF-B100rT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	30	30
	Compressor RLA	A	4	4
	Compressor Overload Protector	--	872	872
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	65	65
	Fan Motor RLA	A	0.52	0.52
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	565	565
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780×343×34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	66/63	66/63
	Sound Power Level	dB (A)	76/73	76/73

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-12HP265VA-CP	ETAC3-12HC265VA-CP
Product Code			CC060065700	CC060066300
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	12000	12300
Heating Capacity		Btu/h	10700	/
Cooling Power Input		W	1030	1060
Heating Power Input		W	920	/
Cooling Power Current		A	4	4
Heating Power Current		A	3.5	/
Rated Input		W	Cooling:1270 Heating:1100 Electric Heating:5050/3500/2500	Cooling:1270 Electric Heating:5050/3500/2500
Rated Current		A	Cooling:4.8 Heating:4.2 Electric Heating:19.1/13.3/9.5	Cooling:4.8 Electric Heating:19.1/13.3/9.5
EER		(Btu/h)/W	11.6	11.6
SEER			/	/
COP		(Btu/h)/W	11.6	/
Air Flow Volume		CFM	341/306	341/306
Dehumidifying Volume		Pint/h	2.75	2.75
Application Area		yd^2	19-29	19-29
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	119	114.6
Gross Weight		lb	131.2	126.8
Refrigerant		/	R32	R32
Refrigerant Charge		oz	28.92	21.16

Indoor Side	Electric Heater Power Input	W	5000/3450/2450	5000/3450/2450
	Electric Heater Power Current	A	18.9/13.1/9.3	18.9/13.1/9.3
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1130/950	1130/950
	Heating Speed	r/min	1130/950	1130/950
	Fan Motor Power Output	W	20	20
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	53/50	53/50
	Sound Power Level	dB (A)	63/60	63/60
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-B100yT130	QXF-B100yT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	21	21
	Compressor RLA	A	4.5	3.3
	Compressor Overload Protector	--	855	855
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1550/1380	1550/1380
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.4	0.4
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	565	565
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780 × 343 × 38.1	780×343×34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	66/63	66/63
	Sound Power Level	dB (A)	76/73	76/73

The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-15HP230VA-CP	ETAC3-15HC230VA-CP
Product Code			CC060065000	CC060065100
Power Supply	Rated Voltage	V~	230/208	230/208
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14600/14200	14700/14400
Heating Capacity		Btu/h	13800/13300	/
Cooling Power Input		W	1400/1360	1420/1380
Heating Power Input		W	1310/1250	/
Cooling Power Current		A	6.0/6.5	6.0/6.5
Heating Power Current		A	5.6/5.9	/
Rated Input		W	Cooling:1890 Heating:1650 Electric Heating: 5050/4130,3500/2860,2500/2040	Cooling:1890 Electric Heating: 5050/4130,3500/2860,2500/2040
Rated Current		A	Cooling:8.2 Heating:7.9 Electric Heating: 22.0/19.9,15.2/13.8,10.9/9.8	Cooling:8.2 Electric Heating: 22.0/19.9,15.2/13.8,10.9/9.8
EER		(Btu/h)/W	10.4/10.4	10.4/10.6
SEER			/	/
COP		(Btu/h)/W	10.6/10.6	/
Air Flow Volume		CFM	341/306	341/306
Dehumidifying Volume		Pint/h	3.17	3.17
Application Area		yd^2	25-37	25-37
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 3/32 × 15 63/64 × 21 1/2
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 19/32 × 17 7/8
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 5/32 × 25 45/64 × 18 15/32
Net Weight		lb	120.2	114.6
Gross Weight		lb	132.3	126.8
Refrigerant		/	R32	R32
Refrigerant Charge		oz	29.63	19.75

Indoor Side	Electric Heater Power Input	W	5000/4090,3450/2820,2450/2000	5000/4090,3450/2820,2450/2000
	Electric Heater Power Current	A	21.8/19.7,15.0/13.6,10.7/9.7	21.8/19.7,15.0/13.6,10.7/9.7
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1130/970	1130/970
	Heating Speed	r/min	1130/970	1130/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1	1
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	53/50	53/50
	Sound Power Level	dB (A)	63/60	63/60
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-B129rT130	QXF-B129rT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	35.2	35.2
	Compressor RLA	A	5	5
	Compressor Overload Protector	--	1180	1180
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	65	65
	Fan Motor RLA	A	0.52	0.52
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	589	565
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780×343×38.1	780×343×34.2
	Cooling Operation Ambient Temperature Range	ºF	64.4~115.0	64.4~115.0
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	66/63	66/63
	Sound Power Level	dB (A)	76/73	76/73

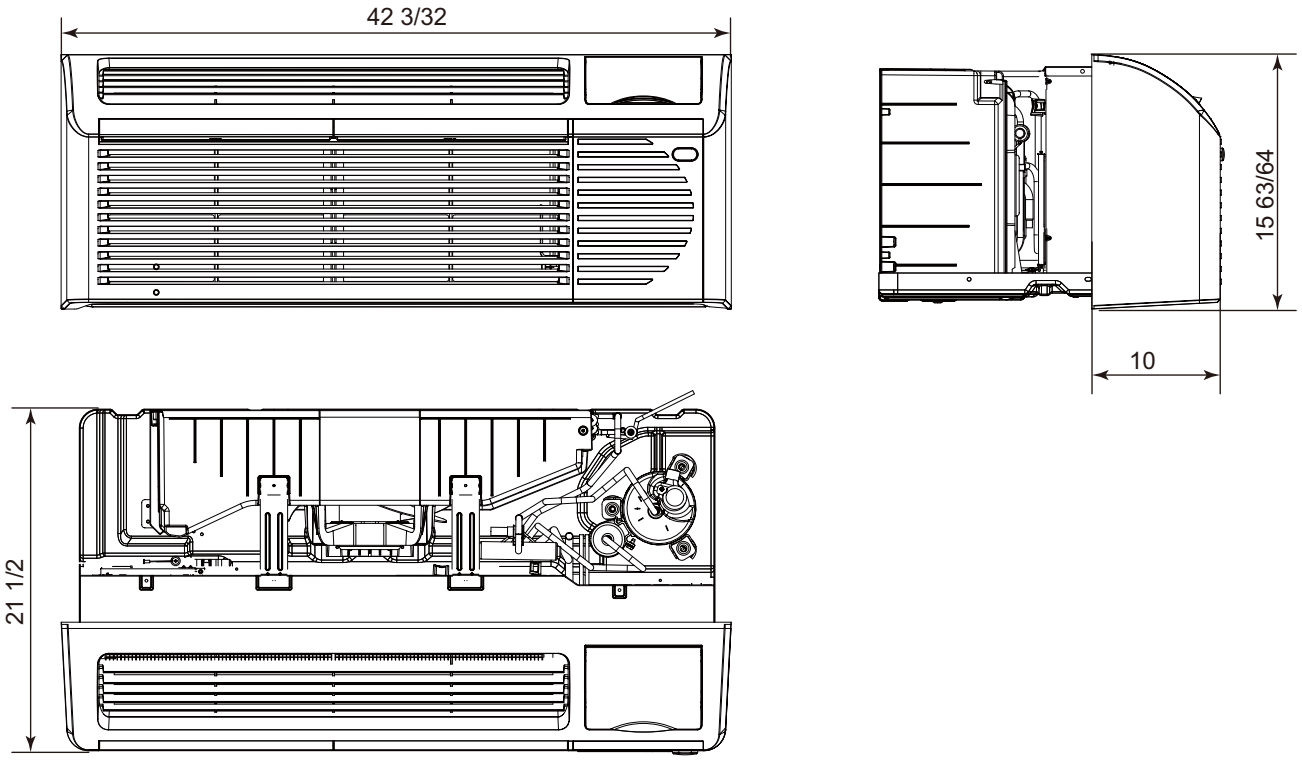
The above data is subject to change without notice; please refer to the nameplate of the unit.

Model			ETAC3-15HP265VA-CP	ETAC3-15HC265VA-CP
Product Code			CC060065900	CC060065500
Power Supply	Rated Voltage	V~	265	265
	Rated Frequency	Hz	60	60
	Phases		1	1
Cooling Capacity		Btu/h	14500	14800
Heating Capacity		Btu/h	13300	/
Cooling Power Input		W	1390	1400
Heating Power Input		W	1250	/
Cooling Power Current		A	5.3	5.3
Heating Power Current		A	4.7	/
Rated Input		W	Cooling:1890 Heating:1650 Electric Heating:5050/3500/2500	Cooling:1890 Electric Heating:5050/3500/2500
Rated Current		A	Cooling:7 Heating:6.2 Electric Heating:19.1/13.3/9.5	Cooling:7 Electric Heating:19.1/13.3/9.5
EER		(Btu/h)/W	10.4	10.6
SEER			/	/
COP		(Btu/h)/W	10.6	/
Air Flow Volume		CFM	341/306	341/306
Dehumidifying Volume		Pint/h	3.17	3.17
Application Area		yd^2	25-37	25-37
Permissible Excessive Operating Pressure for the Discharge Side		MPa	5.8	5.8
Permissible Excessive Operating Pressure for the Suction Side		MPa	1.9	1.9
Maximum Allowable Pressure		MPa	5.8	5.8
Throttling Method			Capillary	Capillary
Defrosting Method			/	/
Climate Type			T1	T1
Isolation			I	I
Moisture Protection(OUTDOOR)			IPX4	IPX4
Dimension (WXHXD)		inch	42 3/32 × 15 63/64 × 21 1/2	42 6/64 × 15 63/64 × 21 32/64
Dimension of Carton Box (LXWXH)		inch	45 3/64 × 25 19/32 × 17 7/8	45 3/64 × 25 38/64 × 17 56/64
Dimension of Package (LXWXH)		inch	45 5/32 × 25 45/64 × 18 15/32	45 10/64 × 25 45/64 × 18 30/64
Net Weight		lb	120.2	114.6
Gross Weight		lb	132.3	126.8
Refrigerant		/	R32	R32
Refrigerant Charge		oz	28.57	17.99

Indoor Side	Electric Heater Power Input	W	5000/3450/2450	5000/3450/2450
	Electric Heater Power Current	A	18.9/13.1/9.3	18.9/13.1/9.3
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	121×706	121×706
	Cooling Speed	r/min	1130/970	1130/970
	Heating Speed	r/min	1130/970	1130/970
	Fan Motor Power Output	W	23	23
	Fan Motor RLA	A	0.2	0.2
	Fan Motor Capacitor	μF	1.5	1.5
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Evaporator Pipe Diameter	mm	Φ7	Φ7
	Evaporator Row-fin Gap	mm	3-1.4	3-1.4
	Evaporator Coil Length (LXDXW)	mm	698 × 242 × 38.1	698 × 242 × 38.1
	Swing Motor Model		/	/
	Swing Motor Power Output	W	/	/
	Fuse Current	A	3.15	3.15
	Set Temperature Range	ºF	61~86	61~86
	Sound Pressure Level	dB (A)	53/50	53/50
	Sound Power Level	dB (A)	63/60	63/60
Outdoor Side	Compressor Trademark		LANDA	LANDA
	Compressor Manufacturer		ZHUHAI LANDA COMPRESSOR CO.,LTD.	ZHUHAI LANDA COMPRESSOR CO.,LTD.
	Compressor Model		QXF-B129yT130	QXF-B129yT130
	Compressor Oil		FW68DA or equivalent	FW68DA or equivalent
	Compressor Type		Rotary	Rotary
	Compressor LRA.	A	26	26
	Compressor RLA	A	6.4	6.4
	Compressor Overload Protector	--	1120	1120
	Fan Type	--	Axial-flow	Axial-flow
	Fan Diameter	mm	349	349
	Fan Motor Speed	rpm	1550/1390	1550/1390
	Fan Motor Power Output	W	45	45
	Fan Motor RLA	A	0.4	0.4
	Fan Motor Capacitor	μF	2.5	2.5
	Outdoor Unit Air Flow Volume	CFM	589	565
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Condenser Pipe Diameter	mm	Φ7	Φ5
	Condenser Rows-fin Gap	mm	3-1.3	3-1.4
	Condenser Coil Length (LXDXW)	mm	780×343×38.1	780×343×34.2
	Cooling Operation Ambient Temperature Range	ºF	55~83	55~83
	Heating Operation Ambient Temperature Range	ºF	-96.4	-96.4
	Sound Pressure Level	dB (A)	66/63	66/63
	Sound Power Level	dB (A)	76/73	76/73

The above data is subject to change without notice; please refer to the nameplate of the unit.

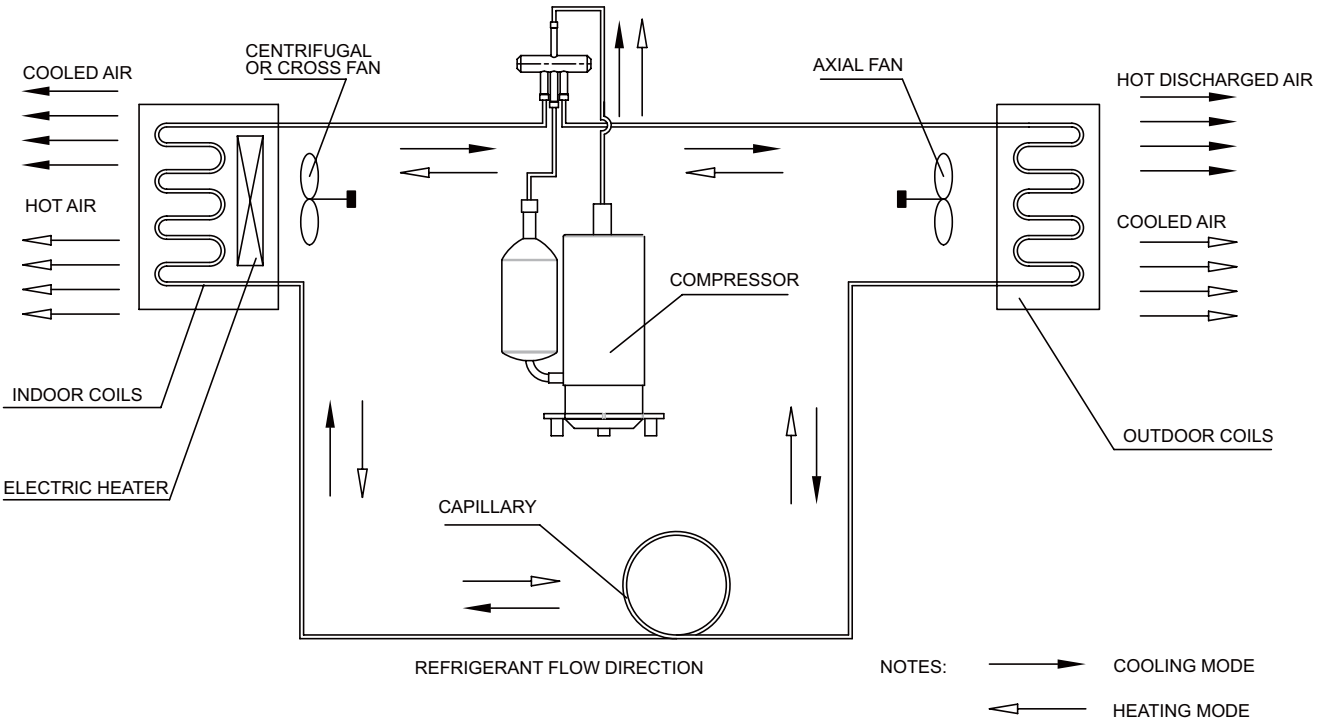
3. Outline Dimension Diagram



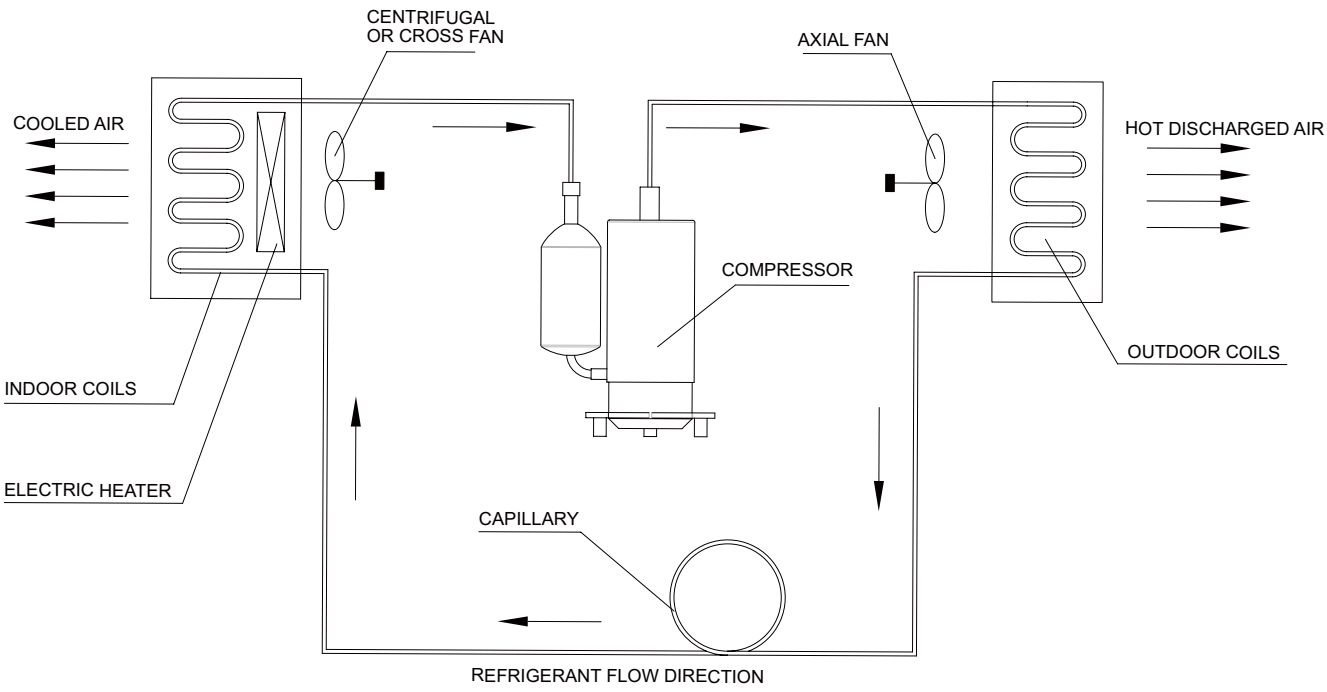
Unit:inch

4. Refrigerant System Diagram

(1) Cooling + Heat Pump + Auxiliary Electric Heater



(2) Cooling + Electric Heater



5. Electrical Part

5.1 Wiring Diagram

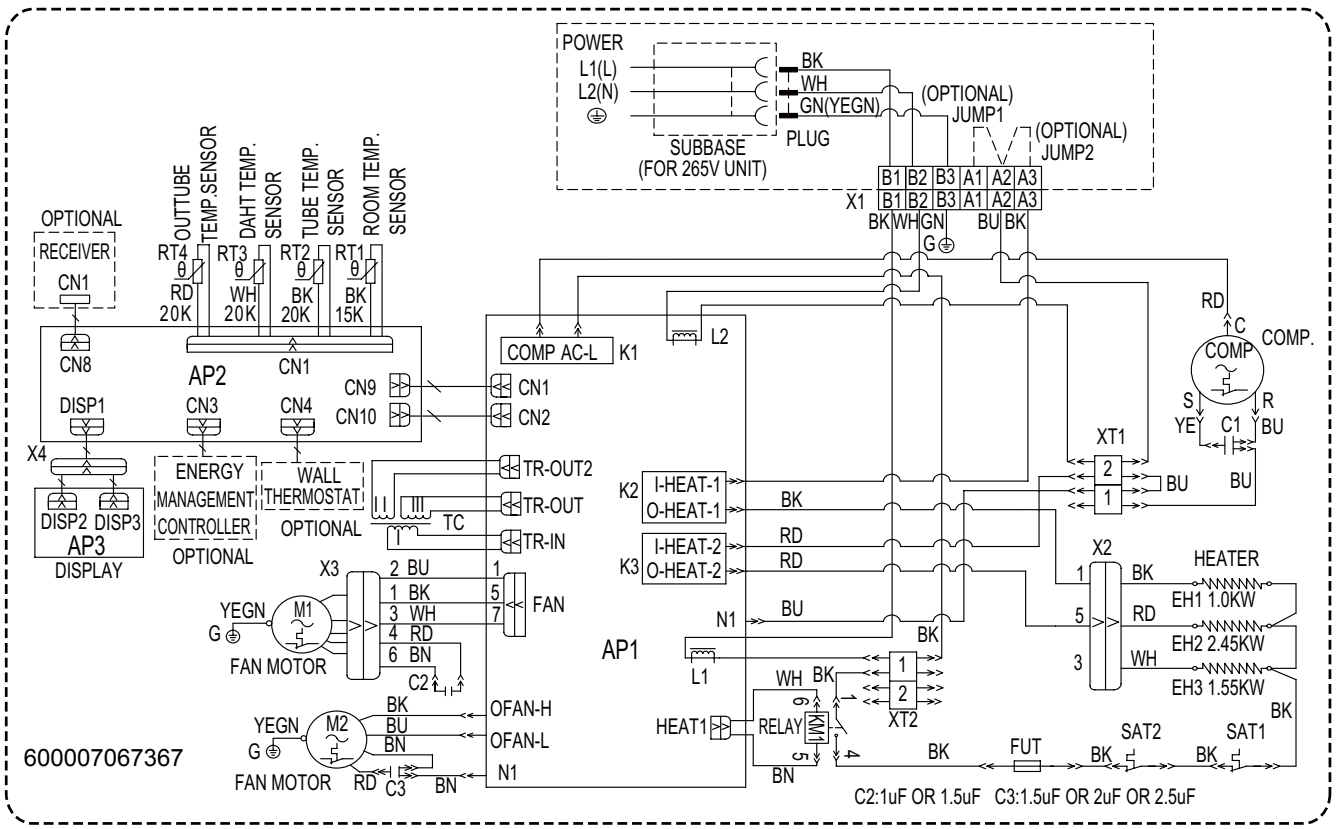
●Instruction

Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue	⏚	Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

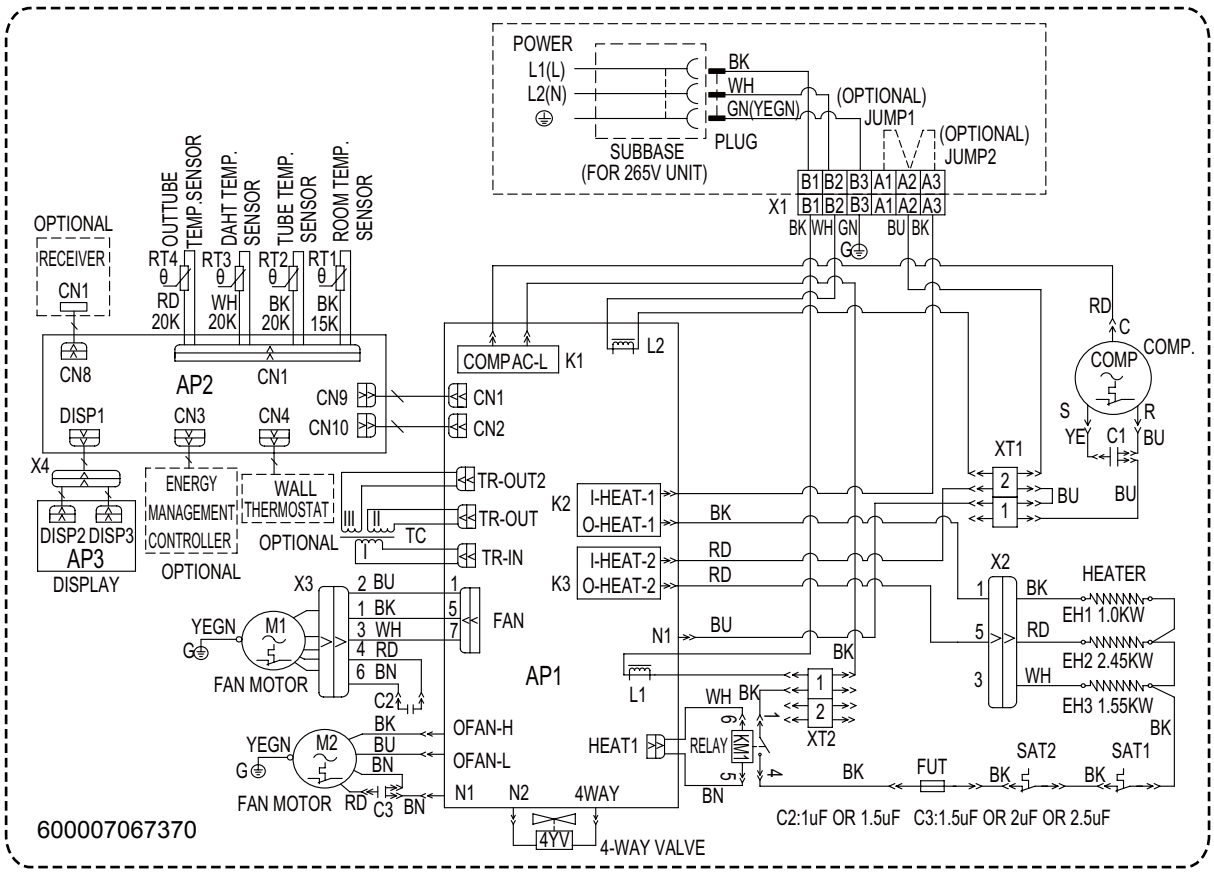
Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lover for this model.

● Electric Diagram

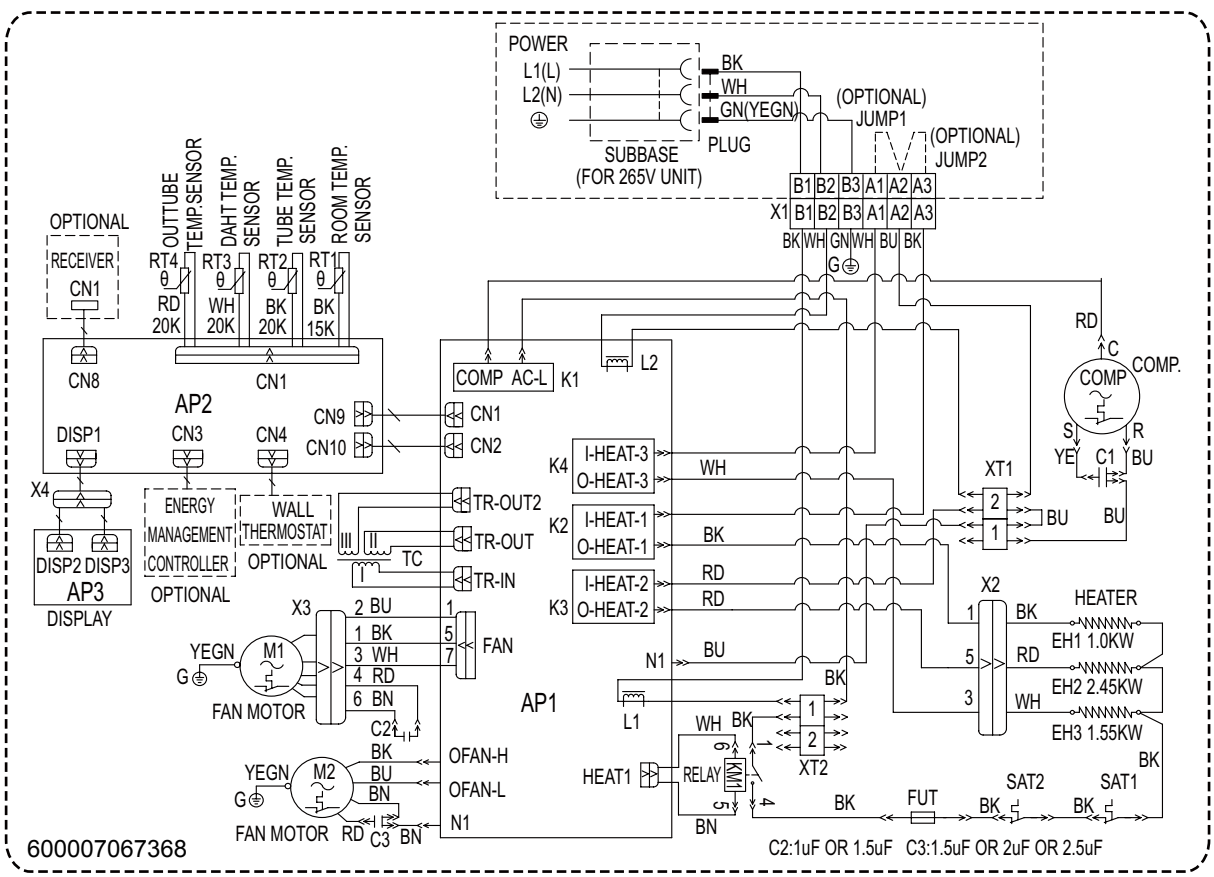
ETAC3-07HC230VA-CP ETAC3-09HC230VA-CP ETAC3-07HC265VA-CP ETAC3-09HC265VA-CP

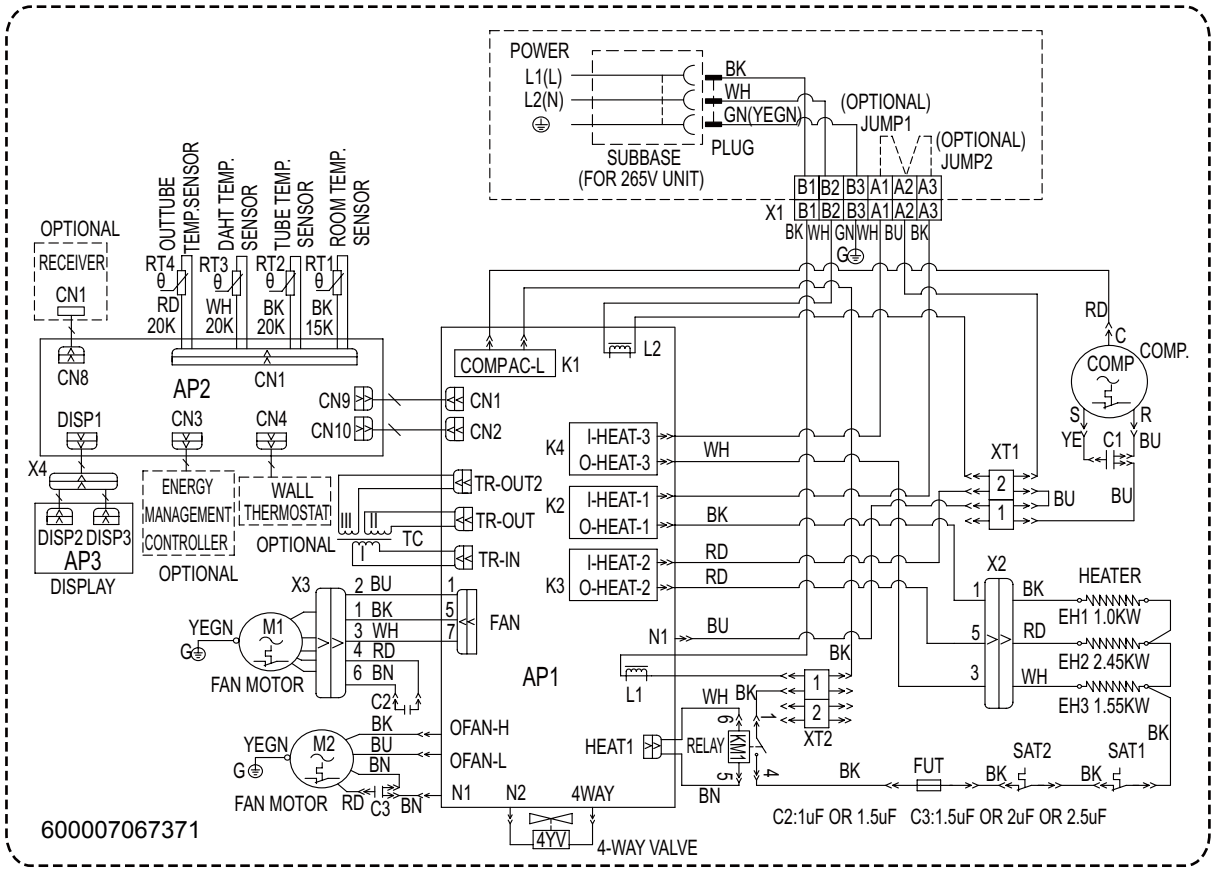


ETAC3-07HP230VA-CP ETAC3-09HP230VA-CP ETAC3-07HP265VA-CP ETAC3-09HP265VA-CP



ETAC3-12HC230VA-CP ETAC3-15HC230VA-CP ETAC3-12HC265VA-CP ETAC3-15HC265VA-CP

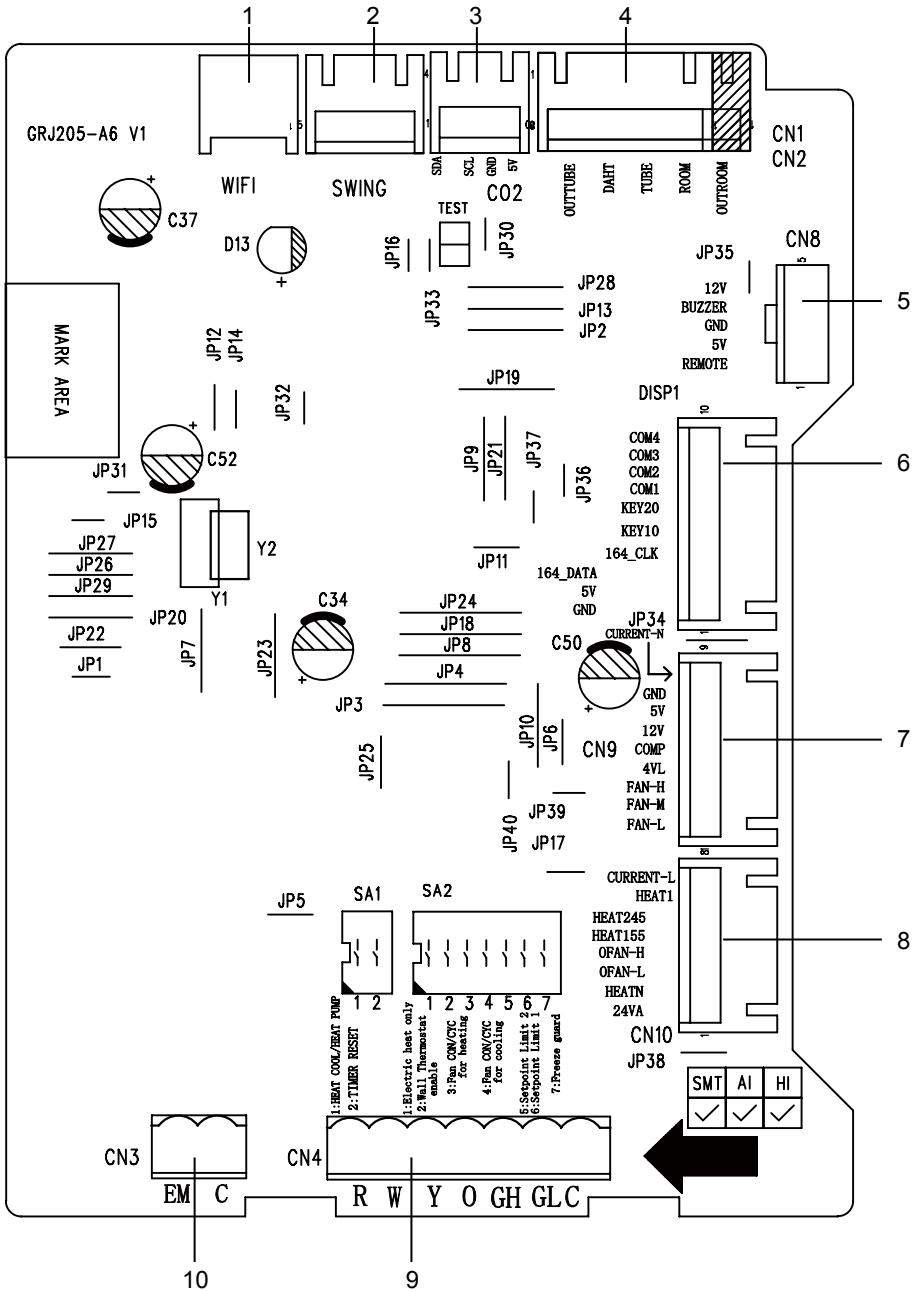




These wiring diagrams are subject to change without notice; please refer to the one supplied with the unit.

5.2 PCB Printed Diagram

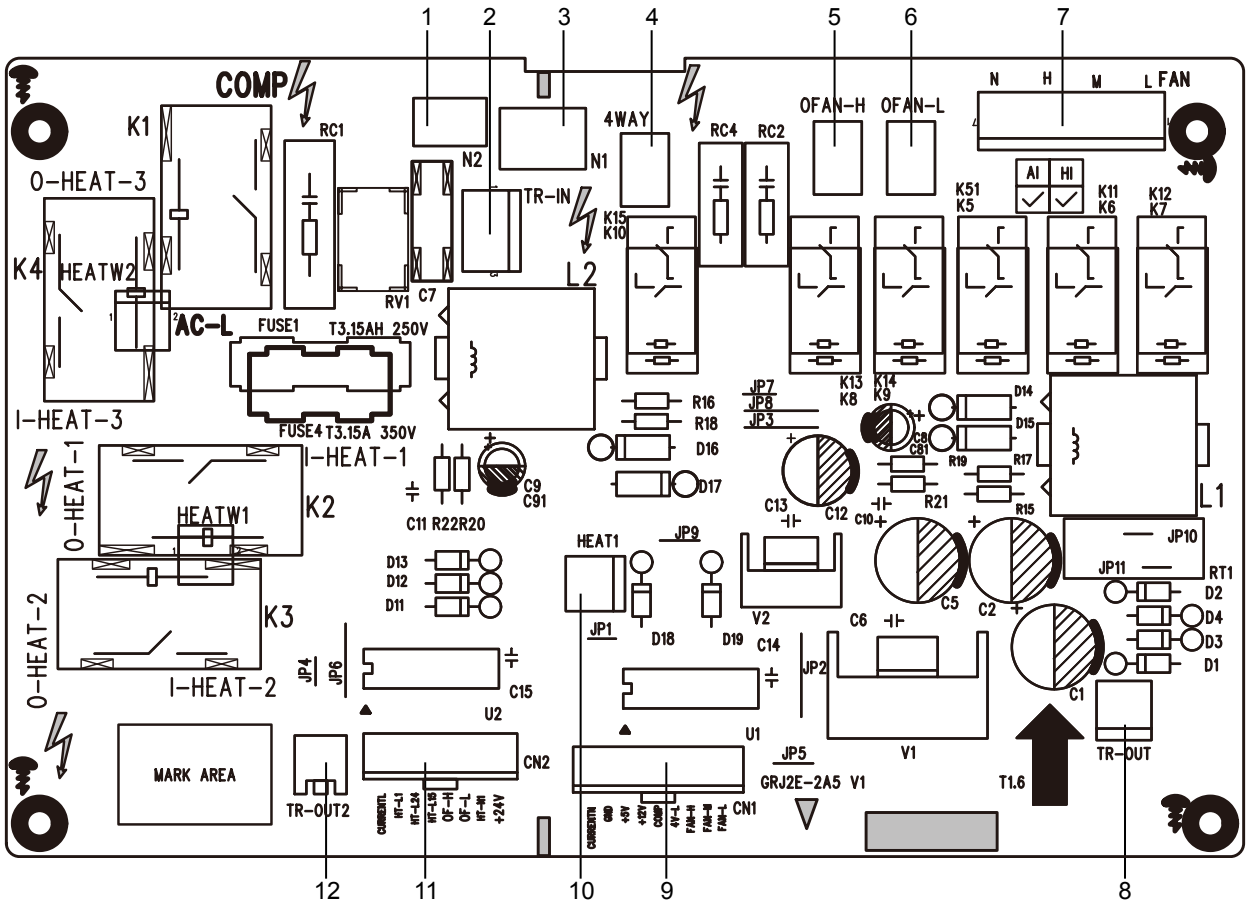
5.2.1 Silk screen on main board 1



No.	Name
1	Terminal of wifi(reserved)
2	Terminal of swing motor(reserved)
3	Terminal of device inspection(reserved)
4	Terminal of temperature sensor
5	Remote controller receiving/buzzer interface (optional)

No.	Name
6	Terminal of display board
7	Connection terminal 1 with hi-volt PCB
8	Connection terminal 2 with hi-volt PCB
9	Terminal of wired controller
10	Connection terminal of energy management

5.2.2 Silk screen on main board 2



No.	Name	No.	Name
1	Neutral wire interface	7	Needle stand for indoor fan
2	Transformer AC input	8	Transformer AC output（12V）
3	Neutral wire interface	9	Terminal of main board
4	Four-way valve terminal	10	Control needle stand of relay
5	Terminal of outdoor fan(High -end)	11	Terminal of main board
6	Terminal of outdoor fan(Low -end)	12	Transformer AC output（24V）

6. Function and Control

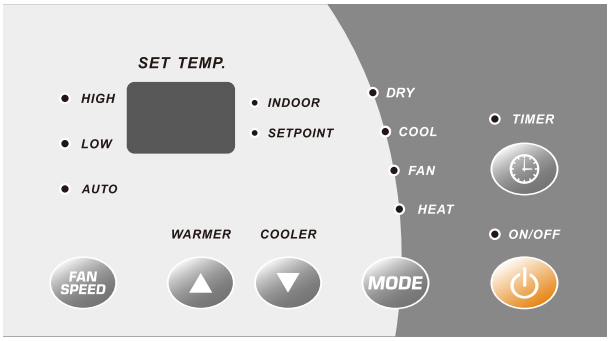
6.1 Introduction of Control Pane

1.Summary

When the unit is turned on,power indicator is displayed in green.In this case,you can operate the unit through control panel.

2.Operation interface and buttons

Button function: (Press the button and then the corresponding function will be started up after 2s) Display will be started up immediately.



About the controls on your unit

There are ON/OFF, WARMER, COOLER, MODE, FAN SPEED and TIMER six buttons in all;

1. Press ON/OFF button under OFF mode to turn on the unit. If press WARMER or COOLER button under OFF mode, the dual 8 nixie tube will display indoor temperature for 15s and then turn off. If press MODE button under OFF mode, the controller will resume to the operation status before power-off.

Operation indicator is in green.

2. Under ON status, every button is in valid

① ON/OFF: It is used for turning OFF the system.

② MODE: It is used for switching between Cool, Fan, Heat and Dry (optional).

③ WARMER or COOLER:

a. It is used for increasing temperature or timer setting.

b. It is used for decreasing temperature or timer setting.

(4) FAN : It is used for setting high, low or auto fan speed. The corresponding LED will be on.

(5) TIMER : It is used for setting timer function.

3. Timer function: It can be set either by buttons on control panel or by remote controller

(1) Timer ON: When the unit is off, timer ON can be set. Setting range is 0.5~24h. When timer ON time is reached, the system will operate according to the set mode.

(2) Timer OFF: When the unit is on, timer OFF can be set. Setting range is 0.5~24h. When timer OFF time is reached, the system will stop operation.

(3) Timer Setting: Press TIMER button to set timer function and Timer icon will be on. Dual 8 nixie tube will display selected time which can be adjusted by pressing " + " or " -" buttons.

The range of timer setting is from " -- " to 24h. 5s after timer setting, the timer function will be activated and TIMER LED will be on. If " -- " is displayed, the system will stop timer setting.

(4) Timer Preview: when timer function has been set, press TIMER button to preview the remaining time of timer.

(5) If Time function has been set, turning on/off the unit or power failure will cancel timer setting.

4. Sleep function: This function can be set only by remote controller. This mode will bring a more comfortable sleeping environment. Please contact customer service center or refer to the service manual for more details.

5. DRY function: Without reducing the room temperature, air conditioner can dehumidify and make the room air dry and comfortable.

6. Buzzer: optional

When controller is energized, or valid remote control signal/button signal is received, the buzzer will give out a beep.

7. Auto fan speed

Fan speed can be automatically selected according to different modes or indoor temperature to achieve higher comfort.

8. Emergency cooling operation: Emergency cooling, Subject to your choice – allowed or rejected.When indoor ambient temperature ≥30°C(86°F), the unit will start cooling automatically. When indoor ambient temperature reaches 27°C(81°F),the unit will stop operation.

9. Fcode remote controller: optional

Dual 8 Display and LED Display:

Two 8 segment nixie tube and 12 LED indicators (they are AUTO, HIGH, LOW, DRY, COOL, FAN, HEAT, TIMER, ON/OFF, INDOOR, SETPOINT, STATUS(status indicator on main board)).

1.Mode LED display: when the unit is running in a certain kind of mode, the corresponding LED is bright.

2.Power LED: In ON status, the power LED is green; In OFF status, the power LED is red.

3.Fan speed display: when the unit is running at auto, high or low fan speed, the corresponding LED is bright.

4.Dual 8 display: In cooling, drying and heating mode, it defaults to display set temperature (In fan mode, it displays indoor ambient temperature).

5.When the display data has three digit, the dual 8 is rolling to display. Display the "decimal" + "units place" at first, and then display "BLANK"+ "hundreds place".

6.Error display

After energization, STATUS LED is always on. When there is error or protection, STATUS LED blinks. Detailed display is as below:In OFF mode, dual 8 won't display the error code (except the low temperature protection). In OFF status, number 8, 9 and 10 protection marks will be eliminated.When multiple protections are overlapped, they will be displayed circularly without priority.

No.	Malfunction Code	Description	STATUS indicator
1	F1	Indoor ambient temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays "F1" and STATUS indicator will flash once and off 3s circularly
2	F2	Indoor tube temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays "F2" and STATUS indicator will flash twice and off 3s circularly
3	F3	Outdoor ambient temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays "F3"

4	F4	Outdoor tube temperature sensor is opencircuited or short-circuited	Dual-8 nixie tube displays“F4” and STATUS indicator will flash four times and off 3s circularly
5	FJ	Malfunction of temperat-ure sensor at air outlet	Dual-8 nixie tube displays “FJ”
6	FP	Low temperature preven-tion protection	Dual-8 nixie tube displays “FP”
7		Wrong wire connection indication for wired controller	STATUS indicator will flash nine times and off 3s circularly
8		High temperature preven-tion protection forevaporator	STATUS indicator will flash eight times and off 3s circularly
9		High temperature prevention protection foroutdoor condenser	STATUS indicator will flash six times and off 3s circularly
10		Freeze prevention protection for evaporator	STATUS indicator will flash five times and off 3s circularly
11		Frost prevention (heat pump)	STATUS indicator will flash seven times and off 3s circularly
12	F0	Freon-lacking protection	Dual-8 nixie tube displays “F0”
13	H3	Overload detection protection	Dual-8 nixie tube displays “H3”
14	E5	Overcurrent protection of compressor	Dual-8 nixie tube displays “E5”
15	A2	Malfunction protection for electric heating Relay for Compressor or heater is broken	Dual-8 nixie tube displays “A2”
16	U5	Unbalanced Electric Current detected between Null line and live line	Dual-8 nixie tube displays “U5”
17	Ao	Electric heater combination wrong	Dual-8 nixie tube displays “Ao”
18	A4	Electric heater current abnormal	Dual-8 nixie tube displays “A4”
19	C7	Temperature limiter protection time too long or fured	Dual-8 nixie tube displays “C7”

If there is error of temperature sensor, only the indoor fan will respond in cooling mode, other loads will not respond, but the buttons are still valid.

6.2 Function Introduction

1.Cooling mode

Under cooling mode, cooling mode indicator is on and the set fan speed indicator is on. Dual 8 displays set temperature.

Working condition and process for cooling

● When $T_{indoor\ amb.}+T_{indoor\ amb.\ compensation}\geq T_{preset}+2^{o}F(1^{o}C)$, the unit operates under cooling. Outdoor fan and indoor fan operates in set speed. When the starting condition of compressor is reached, outdoor fan will operate and compressor will operate 10s later.

● $T_{indoor\ amb.}+T_{indoor\ amb.\ compensation}\leq T_{preset}-2^{o}F(1^{o}C)$, the unit sops operation. In this case, compressor and outdoor fan stop operation. Under indoor fan cycle mode, indoor fan will stop operation after operating at set fan speed for 60s (except requiring the indoor fan to operate in protection mode); if fan cycle mode is not selected, indoor fan will operate at set fan speed.

● $T_{preset}-2^{o}F(1^{o}C)<T_{indoor\ amb.}+T_{indoor\ amb.\ compensation}<T_{preset}+2^{o}F(1^{o}C)$, the unit keeps previous operation status.

● When the indoor fan is set at high speed, outdoor fan operates according to high speed.

● When the indoor fan is set at low speed, outdoor fan operates according to low speed.

● When the unit starts cooling mode for the first time and indoor fan is set at low speed, outdoor fan will start at high speed. After operating for 3.5min and outdoor tube temperature is below $140^{o}F(60^{o}C)$, outdoor fan turns to low speed.First time of start-up includes: switch to low speed cooling from non-cooling mode; the unit starts low speed cooling for the first time or enters low speed cooling after power failture.

● During cooling mode and there is no outdoor condenser high temperature protection, unit stop as reaching temperature point, unit stop for temperature sensor error or unit stop for freeze protection previously, when the start-up condition of outdoor fan is met, indoor fan will operate at high fan speed for 3s and then turn to set fan speed. If high temperature protection occurs during cooling mode, outdoor fan is forced to operate at high speed. When the start-up condition of outdoor fan in heating mode is met, outdoor fan will operate at high fan speed for 3s and then turn to set fan speed.When the indoor fan starts operation, indoor fan will operate at high fan speed for 3s and then turn to set fan speed.

2.Heating mode

Under heating mode, heating mode LED and set fan speed LED is on. Dual 8 displays set temperature. If select displaying ambient temperature in additional function setting, the dual 8 will display as the display way described in this mode. The set temperature and fan speed will keep the same when switching modes.

Working condition and process for heating

a.General type HEAT PUMP TYPE

Operation condition and process (electric heater and compressor can't operate at the same time)

● When $T_{preset}-5^{o}F(3^{o}C)<T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}\leq T_{preset}-2^{o}F(1^{o}C)$, compressor operates at heating mode. Meanwhile, 4-way valve,indoor fan and outdoor fan start operation at set speed. Compressor can operate after 10s. If compressor operates and it satisfies $T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}\leq T_{preset}-5^{o}F(3^{o}C)$ and the minimum operation time for compressor,compressor and outdoor fan stop operation immediately.1s later,electric heater will start.Once the electric heater operates,it will quite until condition is satisfied(entering protection function is excluded).

When compressor needs to heat,if compressor can't be started up due to protection function,electric heater will start heating instead of compressor 15s later.It will stop operation until satisfying the temperature point (customized requirement);When $T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}\leq T_{preset}-5^{o}F(3^{o}C)$,the electric heater operates. Indoor fan operates at set fan speed.

● When $T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}\geq T_{preset}+2^{o}F(1^{o}C)$, compressor or electric heater stops operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat;if fan cycle mode is not selected, indoor fan will operate at set fan speed.

● When $T_{preset}-2^{o}F(1^{o}C)<T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}<T_{preset}+2^{o}F(1^{o}C)$ the unit keeps previous operation status.

b.Pure electric heating type HEAT COOL TYPE

Operation condition and process

● When $T_{indoor\ amb}-T_{indoor\ amb.\ compensation}\leq T_{preset}-2^{o}F(1^{o}C)$,the electric heater starts operation and indoor fan operates at set fan speed;

● When $T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}\geq T_{preset}+2^{o}F(1^{o}C)$, the electric heater stops operation. Under fan cycle mode, indoor fan operates at the condition of blowing residual heat;if fan cycle mode is not selected, indoor fan will operate at set fan speed.

● When $T_{preset}-2^{o}F(1^{o}C)<T_{indoor\ amb.}-T_{indoor\ amb.\ compensation}<T_{preset}+2^{o}F(1^{o}C)$, the unit will keep previous operation status.

3.Auto fan speed mode

a.Auto fan speed in cooling mode

● High speed:$T_{amb.}+T_{indoor\ amb.\ compensation}\geq T_{preset}+4^{o}F(2^{o}C)$

● Low speed:$T_{amb.}+T_{indoor\ amb.\ compensation}\leq T_{preset}$

● Not change:$T_{preset}<T_{amb.}+T_{indoor\ amb.\ compensation}<T_{preset}+4^{o}F(2^{o}C)$

When entering auto fan speed mode, it will operate according to auto high speed

b.Auto fan speed in heating mode

● High speed:$T_{amb.}-T_{indoor\ amb.\ compensation}\leq T_{preset}-4^{o}F(2^{o}C)$

● Low speed:$T_{amb.}-T_{indoor\ amb.\ compensation}\geq T_{preset}$

● Not change:$T_{preset}-4^{o}F(2^{o}C)<T_{amb.}-T_{indoor\ amb.\ compensation}<T_{preset}$

When entering auto fan speed mode, it will operate according to auto high speed.

Note: a. Under auto fan speed control in any mode, there will be a delay of 3.5min in minimum when switching the speed of indoor fan(there is no delay of 3.5min when switching mode).

The set temperature can't be adjusted in the fan speed mode, and the auto fan speed is judged according to T_{preset} and $T_{indoor\ amb.\ compensation}$ in the cooling mode.

4.Additional function setting

After the unit is turned on for 30s, press Low button and ▼ button for 5s, the configuration mode will be started up. After entering

configuration mode, if adjusting the temperature compensation value by buttons to turn to unit on or off condition, the load will be activated after 3s. While if entering unit on or off condition due to the change of the ambient temperature, it can be activated only after quitting the configuration mode.

In the configuration mode, the four configuration modes as below can be selected by Low button.

Mode one: Fahrenheit/Centigrade display mode

Fahrenheit and Centigrade display mode can be switched by pressing ▲ or ▼ button.

°F indicates Fahrenheit display mode

°C indicates Centigrade display mode

Mode two: Adjusting mode for cooling temperature compensation value

▲ button can increase compensation temperature by 1°F(°C), while ▼ button can decrease compensation temperature by 1°F(°C). The adjusting range of indoor ambient temperature compensation value is -6°F to 6°F(-3°C to 3°C) (cooling mode LED is on).

Mode three: Adjusting mode for drying temperature compensation value

▲ button can increase compensation temperature by 1°F(°C), while ▼ button can decrease compensation temperature by 1°F(°C). The adjusting range of indoor ambient temperature compensation value is -6°F to 6°F(-3°C to 3°C) (drying mode LED is on).

Mode four: Adjusting mode for heating temperature compensation value

▲ button can increase compensation temperature by 1°F(°C), while ▼ button can decrease compensation temperature by 1°F(°C). The adjusting range of indoor ambient temperature compensation value is -6°F to 6°F(-3°C to 3°C) (heating mode LED is on).

The compensation temperature defaults to 0 in cooling, drying and heating mode. They can allocate different compensation temperature in cooling and heating mode respectively.

Mode five: Display switchover between set temperature and ambient temperature in heating, drying and cooling mode

Press ▲ button or ▼ button to switch displaying set temperature or ambient temperature.

Set temperature display: the dual 8 displays SP. After quitting configuration mode, set temperature is displayed constantly in heating mode, drying mode and cooling mode;

Ambient temperature display: the dual 8 displays AA. After quitting configuration mode, ambient temperature is displayed constantly in heating mode, drying mode and cooling mode;

As for below circumstances, it will display set temperature for 10s and then turn to display ambient temperature.

Note: If the temperature display is set to ambient temperature display, when the power is turned on, in the cooling, drying or heating mode, when the remote control timer signal is received, the timer time is displayed for 5s, and then the set temperature is displayed for 5s, and finally the ambient temperature is displayed.

- Press mode button
- Energization after power failure
- Restart the unit
- Turn on the unit after EM turns off unit
- Adjust the set temperature by ▲ button or ▼ button

Mode six: allow emergency cooling to autostart or disallow emergency cooling to autostart

Allow emergency cooling to start automatically and disallow emergency cooling to start automatically mode can be switched by pressing ▲ or ▼ button.

Allow emergency cooling to autostart: double 8 display CA

Disallow emergency cooling to autostart: double 8 display Cd

Quitting configuration mode: The configuration modes mentioned above will be quitted when mode button is pressed or no button is pressed within 30s.

5.Resetting timer

Hold on pressing ▲ button and ▼ button simultaneously for 3s under the protection for compressor and electric heater minimum stop time or the protection for compressor minimum operation time, the protection time will be reduced.

6.Memory function

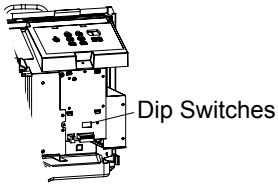
Energizing after power failure, the controller is running according to the mode before power failure.The operation mode, set fan speed, set temperature, T value in minimum stop time of compressor, Fahrenheit/Centigrade display mode, cooling compensation temperature, heating compensation temperature, temperature display mode set in configuration mode before power failure is memorized after power recovers.The unit operates in default fan mode when there is no memory. Fan speed is high with T value of zero and Fahrenheit display mode. Cooling compensation temperature is zero and heating compensation temperature is zero. Default set temperature is 71°F(22°C). Dual 8 displays set temperature under cooling and heating mode.

7.Restore factory settings

In standby and OFF status, after pressing Low button and ▲ button for 3s and the dual 8 displays “00” for 3s (do not display others), which shows that the factory settings have been restored. Meanwhile, the configuration information defaults to display Fahrenheit, heating compensation temperature of 0, cooling compensation temperature of 0 and displaying set temperature. T value is zero, fan speed is high and set temperature is 71°F(22°C).

8.DIP SWITCHES

Auxiliary dip switch controls are located behind front panel,through an opening below the control panel.To access,remove front panel. Dip switches area ccessible without opening the control box.Unit must be powered OFF to effectively change their status.Factory settings for dip switches will be in the DOWN position.See Table 5-Dip Switch Functions for functions of each dip switch position.



Dip switch Location on Unit

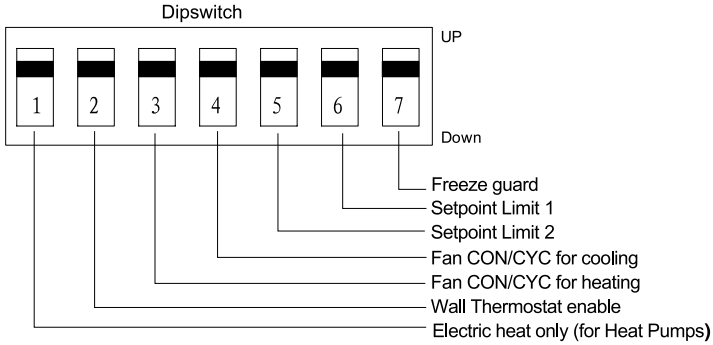


Table 5—DIP SWITCH FUNCTIONS

No.	UP		DOWN		REMARKS	DEFAULT
1	Electric Heat Only		Heat Pump		For Heat Pump Unit Only	DOWN
2	Wall Thermostat Enable		Control Panel Enable			DOWN
3	Fan Continuous Run for Heating		Fan Cycle for Heating			DOWN
4	Fan Cycle for Cooling		Fan Continuous Run for Cooling			DOWN
6*5	UP*UP 68~75°F 20~24°C	UP* DOWN 63~80°F 17~28°C	DOWN* UP 65~78°F 18~26°C	DOWN* DOWN 61~86°F 16~30°C (full range)	Two configurations (5* 6) combine to select set point range. When set point limit set, display always shows full range.	DOWN* DOWN 61~86°F 16~30°C
7	Freeze Guard Disable		Freeze Guard Enable			DOWN

Electric Heating Only / Emergency Heat (For Heat Pump Units Only)

This function is only available for heat pump units.

Wall Thermostat Enable

A wired wall thermostat can be connected to the unit. If it is, this dipswitch must be moved to the Wall

Thermostat Enable Position, before the wall thermostat will begin control.

Heat and Cool Fan CON/CYC Dip-switches

Allows the fan to operate in continuous or cycle modes while the unit is in heating or cooling mode.

(continuous or cycle):

CON (Continuous)

Allows fan to run continuously, circulating air even when the temperature setting has been satisfied. This switch helps to maintain the room temperature closer to the thermostat setting.

CYC (Cycle)

This setting allows the fan to cycle on and off with the compressor or electric heater. The fan stops a short time after the temperature setting is satisfied.

Setpoint Temperature Limits

Provides a restricted range of temperature control.

Room Freeze Protection

If unit senses a room temperature below 40°F, the fan motor and electric strip heat will turn on and warm the room to 50°F. The fan stops a short time after the temperature is satisfied.

7. Notes for Installation and Maintenance

Safety Precautions:Important!

Please read the safety precautions carefully before installation and maintenance.
The following contents are very important for installation and maintenance.

Please follow the instructions below.

●The installation or maintenance must accord with the instructions.
●Comply with all national electrical codes and local electrical codes.
●Pay attention to the warnings and cautions in this manual.
●All electric work must be performed by a licensed technician according to local regulations and the instructions given in this manual.
●Be caution during installation and maintenance. Prohibit incorrect operation to prevent electric shock, casualty and other accidents.

Warnings

Electrical Safety Precautions:

1. Cut off the power supply of air conditioner before checking and maintenance.
2. The air condition must apply specialized circuit and prohibit share the same circuit with other appliances.
3. The air conditioner should be installed in suitable location and ensure the power plug is touchable.
4. Make sure each wiring terminal is connected firmly during installation and maintenance.
5. Have the unit adequately grounded. The grounding wire can't be used for other purposes.
6. Must apply protective accessories such as cable-cross loop and wire clip.
7. The live wire neutral wire and grounding wire of power supply must be corresponding to the live wire, neutral wire and grounding wire of the air conditioner.
8. If power cord is broken, please get the specialized power cord from the manufacture or distributor.
9. If the power cord is not long enough, please get the specialized power cord from the manufacture or distributor. Prohibit prolong the wire by yourself.
10. Make sure all wires and pipes are connected properly.
11. Check if there is electric leakage on the unit body. If yes, please eliminate the electric leakage.
12. Replace the fuse with a new one of the same specification if it is burnt down; don't replace it with a cooper wire or conducting wire.
13. If the unit is to be installed in a humid place, the circuit breaker must be installed.

Installation Safety Precautions:

1. Select the installation location according to the requirement of this manual.(See the requirements in installation part)
2. Handle unit transportation with care; the unit should not be carried by only one person if it is more than 20kg.
3. When installing the unit, a suffi-cient fixing bolt must be installed; make sure the installation support is firm.
4. Ware safety belt if the height of working is above 2m.
5. Use equipped components or appointed components during installation.6. Make sure no foreign objects are left in the unit after fin-ishing installation.

Refrigerant Safety Precautions:

1. Avoid contact between refrigerant and fire as it generates poisonous gas; Prohibit prolong the connection pipe by welding.
2. Apply specified refrigerant only. Never have it mixed with any other refrigerant. Never have air remain in the refrigerant line as it may lead to rupture or other hazards.
3. Make sure no refrigerant gas is leaking out when installation is completed.
4. If there is refrigerant leakage, please take sufficient measure to minimize the density of refrigerant.
5. Never touch the refrigerant piping or compressor without wearing glove to avoid scald or frostbite.

Improper installation may lead to fire hazard, explosion, electric shock or injury.

Safety Precautions for Refrigerant

● To realize the function of the air conditioner unit, a special refrigerant circulates in the system. The used refrigerant is the fluoride R32, which is specially cleaned. The refrigerant is flammable and inodorous. Furthermore, it can lead to explosion under certain conditions. But the flammability of the refrigerant is very low. It can be ignited only by fire.

● Compared to common refrigerants, R32 is a nonpolluting refrigerant with no harm to the ozonosphere. The influence upon the greenhouse effect is also lower. R32 has got very good thermodynamic features which lead to a really high energy efficiency. The units there fore need a less filling.

WARNING:

●Appliance filled with flammable gas R32
●Appliance shall be installed,operated and stored in a room with a floor area larger than 4m^2.
●The appliance shall be stored in a room without continuously operating ignition sources.(for example:open flames,an operating gas appliance or an operating electric heater.)
●The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
●The appliance shall be stored so as to prevent mechanical damage from occurring.
●Ducts connected to an appliance shall not contain an ignition source.
●Keep any required ventilation openings clear of obstruction.
●Do not pierce or burn.
●Be aware that refrigerants may not contain an odour.
●Do not use means to accelerate the defrosting process or to clean,other than those recommended by the manufacturer.
●Servicing shall be performed only as recommended by the manufacturer.
●Should repair be necessary,contact your nearest authorized
●Service Centre. Any repairs carried out by unqualified personnel may be dangerous.
●Compliance with national gas regulations shall be observed.
Read specialist's manual.

Safety Operation of Flammable Refrigerant

Aptitude requirement for maintenance man(repairs should be done only be specialists).

●Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority,which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.
●Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants

Safety preparation work

The maximum refrigerant charge amount is shown on the following table a.
(Note: Please refer to the nameplate for the charging quantity of R32).

table a - Maximum charge (kg)

Charge amount (kg)	Minimum room area(m^2)
≤0.921	/
0.95	10.4
1	10.9
1.05	11.5
1.1	12.0
1.15	12.5
1.2	13.1
1.25	13.6
1.3	14.4
1.35	15.6
1.4	16.7
1.45	17.9
1.5	19.2

● Checks to the area
Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimised. For repair to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.
● Work procedure
Work shall be undertaken under a controlled procedure so as to minimise the risk of a flammable gas or vapour being present while the work is being performed.
● General work area
All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out. Work in confined spaces shall be avoided.
● Checking for presence of refrigerant
The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with all applicable refrigerants, i. e. non-sparking, adequately sealed or intrinsically safe.
● Presence of fire extinguisher
If any hot work is to be conducted on the refrigerating equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

• No ignition sources

No person carrying out work in relation to a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

• Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

• Checks to the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance.

The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

– the actual REFRIGERANT CHARGE is in accordance with the room size within which the refrigerant containing parts are installed;

– the ventilation machinery and outlets are operating adequately and are not obstructed;

– if an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant;

– marking to the equipment continues to be visible and legible. Markings and signs that are illegible shall be corrected;

– refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

• Checks to electrical devices

Repair and maintenance to electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used. This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

• that capacitors are discharged: this shall be done in a safe manner to avoid possibility of sparking;

• that no live electrical components and wiring are exposed while charging, recovering or purging the system;

• that there is continuity of earth bonding.

Repairs to sealed components

• During repairs to sealed components, all electrical supplies shall be disconnected from the equipment being worked upon prior to any removal of sealed covers, etc. If it is absolutely necessary to have an electrical supply to equipment during servicing, then a permanently operating form of leak detection shall be located at the most critical point to warn of a potentially hazardous situation.

• Particular attention shall be paid to the following to ensure that by working on electrical components, the casing is not altered in such a way that the level of protection is affected. This shall include damage to cables, excessive number of connections, terminals not made to original specification, damage to seals, incorrect fitting of glands, etc.

Ensure that the apparatus is mounted securely.

Ensure that seals or sealing materials have not degraded to the point that they no longer serve the purpose of preventing the ingress of flammable atmospheres. Replacement parts shall be in accordance with the manufacturer's specifications.

Repair to intrinsically safe components

Do not apply any permanent inductive or capacitance loads to the circuit without ensuring that this will not exceed the permissible voltage and current permitted for the equipment in use.

Intrinsically safe components are the only types that can be worked on while live in the presence of a flammable atmosphere. The test apparatus shall be at the correct rating.

Replace components only with parts specified by the manufacturer. Other parts may result in the ignition of refrigerant in the atmosphere from a leak.

NOTE: The use of silicon sealant can inhibit the effectiveness of some types of leak detection equipment. Intrinsically safe components do not have to be isolated prior to working on them.

Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for all refrigerant systems.

Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source

of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed.
Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.
NOTE: Examples of leak detection fluids are
– bubble method,
– fluorescent method agents.
If a leak is suspected, all naked flames shall be removed/ extinguished.
If a leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from the leak. Removal of refrigerant shall be according to Clause Removal and evacuation.

Removal and evacuation

When breaking into the refrigerant circuit to make repairs – or for any other purpose – conventional procedures shall be used. However, for FLAMMABLE REFRIGERANTS it is important that best practice is followed since flammability is a consideration. The following procedure shall be adhered to:
• remove refrigerant;
• purge the circuit with inert gas (optional for A2L);
• evacuate (optional for A2L);
• purge with inert gas (optional for A2L);
• open the circuit by cutting or brazing.
The REFRIGERANT CHARGE shall be recovered into the correct recovery cylinders. For appliances containing FLAMMABLE REFRIGERANTS other than A2L REFRIGERANTS, the system shall be purged with oxygen-free nitrogen to render the appliance safe for FLAMMABLE REFRIGERANTS. This process may need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.
For appliances containing FLAMMABLE REFRIGERANTS, other than A2L REFRIGERANTS, REFRIGERANTS purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place. This operation is absolutely vital if brazing operations on the pipe-work are to take place.
Ensure that the outlet for the vacuum pump is not close to any POTENTIAL IGNITION SOURCES and that ventilation is available.

Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed.
• Ensure that contamination of different refrigerants does not occur when using charging equipment.
Hoses or lines shall be as short as possible to minimise the amount of refrigerant contained in them.
• Cylinders shall be kept in an appropriate position according to the instructions.
• Ensure that the REFRIGERATING SYSTEM is earthed prior to charging the system with refrigerant
• Label the system when charging is complete (if not already).
• Extreme care shall be taken not to overfill the REFRIGERATING SYSTEM.
Prior to recharging the system, it shall be pressure-tested with the appropriate purging gas. The system shall be leak-tested on completion of charging but prior to commissioning. A follow up leak test shall be carried out prior to leaving the site.

Decommissioning

Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is recommended good practice that all refrigerants are recovered safely.
Prior to the task being carried out, an oil and refrigerant sample shall be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.
a) Become familiar with the equipment and its operation.
b) Isolate system electrically.
c) Before attempting the procedure, ensure that:
• mechanical handling equipment is available, if required, for handling refrigerant cylinders;
• all personal protective equipment is available and being used correctly;
• the recovery process is supervised at all times by a competent person;
• recovery equipment and cylinders conform to the appropriate standards.
d) Pump down refrigerant system, if possible.
e) If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f) Make sure that cylinder is situated on the scales before recovery takes place.
g) Start the recovery machine and operate in accordance with instructions.
h) Do not overfill cylinders (no more than 80 % volume liquid charge).
i) Do not exceed the maximum working pressure of the cylinder, even temporarily.
j) When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from site promptly and all isolation valves on the equipment are closed off.
k) Recovered refrigerant shall not be charged into another REFRIGERATING SYSTEM unless it has been cleaned and checked.

Labelling

Equipment shall be labelled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labelled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of all appropriate refrigerants including, when applicable, FLAMMABLE REFRIGERANTS. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition. Before using the recovery machine, check that it is in satisfactory working order, has been properly maintained and that any associated electrical components are sealed to prevent ignition in the event of a refrigerant release. Consult manufacturer if in doubt.

The recovered refrigerant shall be returned to the refrigerant supplier in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units and especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that FLAMMABLE REFRIGERANT does not remain within the lubricant. The evacuation process shall be carried out prior to returning the compressor to the suppliers. Only electric heating to the compressor body shall be employed to accelerate this process. When oil is drained from a system, it shall be carried out safely.

Main Tools for Installation and Maintenance

Electroprobe

Screw driver

Open-end wrench

Inner hexagon spanner

Universal meter

Vacuum pump

Pressure meter

Electronic leakage detector

Soldering appliance

Refrigerant container

Proper installation is the responsibility of the installer.

Product failure due to improper installation is not covered under the Warranty.

CHASSIS INSTALLATION

Units are shipped without a sleeve.In applications where unit is a replacement,it is recommended that a GREE,GE or FRIEDRICH sleeve be used.

These units can retrofit General Electric, Friedrich sleeves/grilles (be sure outdoor grille is installed on the sleeve).See Table 3 for details.

For any sleeve retrofit applications,be sure that the foam seals (factory-installed on the tube sheets) provide a good seal between the grille and outdoor coil tube sheets.These foam seals provide a barrier to separate outdoor coil leaving air from mixing with the outdoor incoming air (known as air recirculation).

Table 3—Retrofit Wall Sleeves

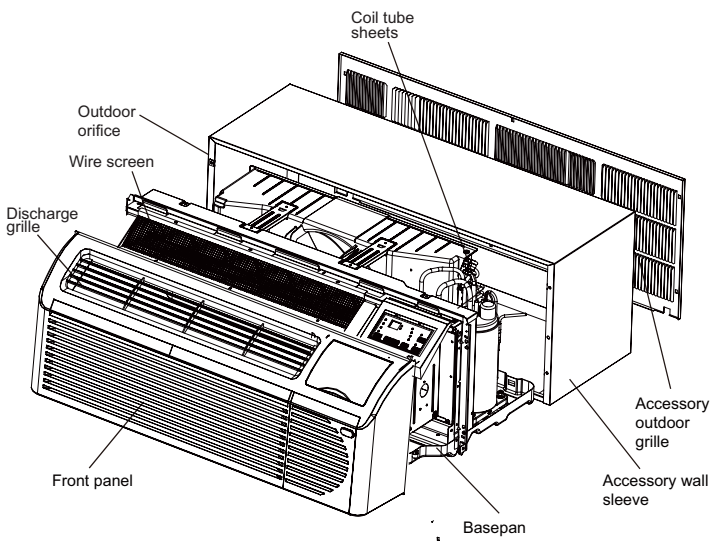
Assembly	Manufacturer	Model Designation	Overal Size
WALL SLEEVE	GREE	TL10500030，TL12500210 01431395	16x42x13.75inch
WALL SLEEVE	GE	RAB71A	16x42x13.75inch
WALL SLEEVE	FRIEDRICH	PDXWS	16x42x13.75inch
rear grille	GREE	01471013，TL12500180	16x42 inch
rear grille	GE	RAG60	16x42 inch

CAUTION

UNIT DAMAGE AND/OR OPERATION HAZARD

Failure to follow this caution may result in equipment damage or improper operation.

For retrofit applications, foam seals on outdoor coil tube sheets must make a seal between the coil and the grille or loss of performance and premature damage to the major components can result.



RETRO FIT SLEEVE PREPARATION

IMPORTANT:Inspect wall sleeve thoroughly prior to installation. Manufacturer does not assume responsibility for costs or damages due to defects in sleeve or for improper installation.

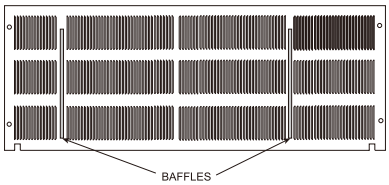
Warnings

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could result in personal injury or death.

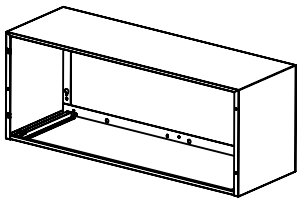
Disconnect all power to unit to avoid possible electrical shock during installation.

Remove any existing foam baffles that are installed on competitive outdoor grille,if present.

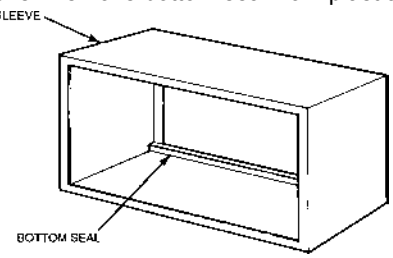


GE Sleeves Only

GE Metal Wall Sleeve-GE metal sleeve is interchangeable with GREE wall sleeve.



GE Plastic Sleeve--Remove bottom seal from plastic sleeve.

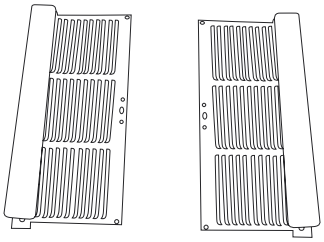


INSTALLATION OF A GREE OR CARRIER WALL SLEEVE USING A NON-GE GRILLE

This application has become more common due to pre-manufactured windows with built-in grilles or renovations where a GREE or Carrier sleeve is used with an existing non-GE grille.

Use of a GREE or Carrier wall sleeve with a non-GE grille requires installation of an Accessory Baffle Kit,which ensures a good seal between the unit and exterior grille to prevent air recirculation.

Air recirculation is a large contributor to performance loss and premature damage to major components.



Note: contact your units supplier to get the kit and it may be different from the shape showed above.

INSTALL UNIT INTO WALL SLEEVE

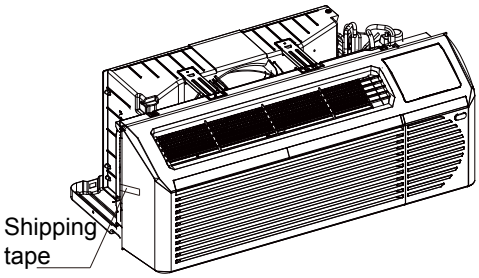
CAUTION

UNIT DAMAGE HAZARD

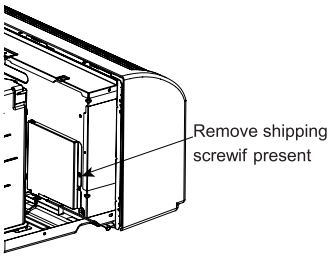
Failure to follow this caution may result in equipment damage or improper operation.

Failure to remove shipping tape and screw will prevent fresh air vent door from opening and may result in damage to vent door cable

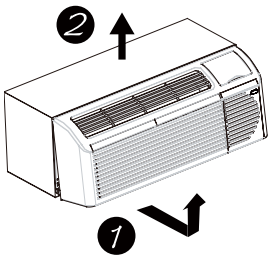
1.Carefully remove shipping tape from the front panel and vent door.



2.Remove shipping screw from the vent door,if present.



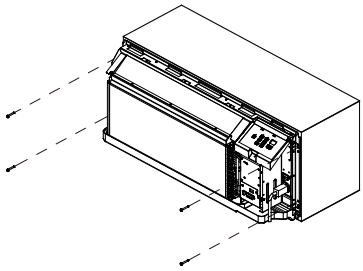
3.Remove front panel.



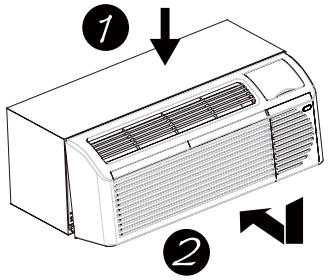
Pull out at the bottom to release it from the tabs(1).Then lift up (2).

4.Lift unit level and slide unit into wall sleeve until foam seal rests firmly against front of wall sleeve.

5.Secure with four screws (supplied) through the unit flange holes.



6.Reinstall front panel.



Place tabs over top rail(1). Push Inward at bottom until panel snaps into place(2).

9. Maintenance

9.1 Error Code

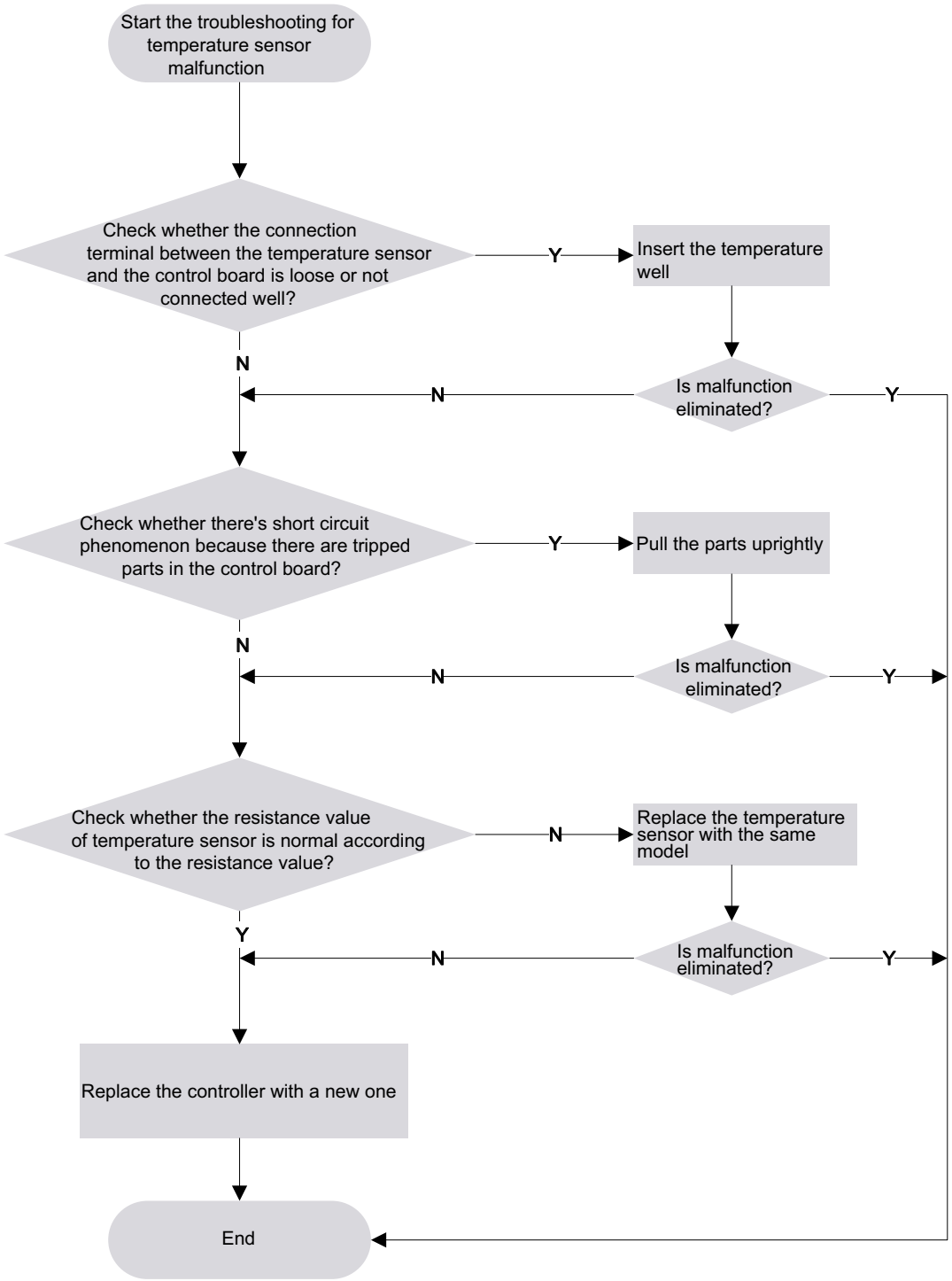
Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display					
			Operation indicator	Cooling code	Heating code	Status indicator (PTAC)		
1	Room temperature sensor is open/short-circuited	F1					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Room temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
2	Room tube temperature sensor is open/short-circuited	F2					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Tube temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
3	Outdoor ambient temperature sensor is open/short-circuited	F3					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Outdoor ambient temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
4	Outdoor tube temperature sensor is open/short-circuited	F4					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	Outdoor tube temperature sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
5	Temperature sensor at the air outlet is open/short-circuited	FJ					Cool/fan/dry: indoor fan operates; compressor and outdoor fan stop operation; Heat: all loads stop operation.	DAHT sensor is not connected well; temperature sensor is damaged; connection wire is short-circuited or broken; Please check it according to the resistance table of temperature sensor.
6	Refrigerant insufficient protection	F0					Cool/dry: indoor fan operates; compressor and outdoor fan stop operation;	1. Heat exchanger is too dirty or the air outlet/air inlet is blocked; 2. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high; 3. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely); 4. Pipeline is broken or rusted; refrigerant is leaking.

Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display					
			Operation indicator	Cooling code	Heating code	Status indicator (PTAC)		
7	Overload detection protection	H3					Cool/dry: indoor fan operates; compressor and outdoor fan stop operation;	1. Heat exchanger is too dirty or the air outlet/air inlet is blocked; 2. The fan operates abnormally; speed is too low or the fan can't operate; 3. Compressor operates abnormally. There's abnormal sound or there's refrigerant leakage. Outer case temperature is too high; 4. The system is blocked (filth blockage, ice blockage, grease blockage; 4-way valve hasn't been opened completely); 5. Refrigerant is leaking, which cause overheating protection for the compressor. 6. The unit is operate under high-temperature and high humidity environment.
8	Overcurrent protection of compressor	E5					Compressor, electric heating and outdoor fan stop operation; indoor fan operates.	1. Compressor is blocked; 2. Startup current of compressor is too big; 3. Operation voltage of unit is too low;
9	Compressor and relay of electric heater is stick together (PTAC)	A2					Indoor fan operates and other loads stop operation.	1. Relay is stick together;
10	Current detection for neutral wire and live wire is not balanced	U5					All loads are stopped	1. Wires are not connected or inserted correctly; 2. Electric heater is short-circuited or not connected tightly; 3. There's electric leakage;
11	Self-checking combination method of electric heating is not correct	Ao					All loads are stopped	1. Wires are not inserted correctly; 2. Electric heater is broken;
12	Operation current for electric heating is abnormal	A4					All loads are stopped	1. Part of Electric heater is broken or short-circuited; 3. Electric heater is abnormal;
13	Circuit of temperature limiter is broken	C7					All loads are stopped	1. Temperature limiter is broken; 2. Connection wire of load of electric heater is broken.

Series code	Malfunction name	Display method of indoor unit (dial-8 code)					AC status	Possible causes
		Code	Indicator display					
			Operation indicator	Cooling code	Heating code	Status indicator (PTAC)		
14	Malfunction of jumper cap	C5					All loads stop operation	1. The control board hasn't been installed with the jumper cap; 2. The jumper cap is not connected well; 3. The jumper cap is damaged; 4. Detection circuit of jumper cap of control board is abnormal
15	Low temperature prevention protection	FP					Start up electric heating operation;	1. The ambient temperature is low or the resistance value of temperature sensor is abnormal;
16	Wrong wire connection reminding for the wired controller					Flash 9 times and off 3s circularly	The unit operates according to the signal of wired controller.	1. Wrong wire connection for the wired controller;
17	High temperature prevention protection for the evaporator					Flash 8 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan operates or stop operation according to the tube temperature of evaporator. The electric heating is started up;	1. Normal phenomenon for heating;
18	High temperature prevention protection for outdoor condenser					Flash 6 times and off 3s circularly	Indoor fan operates; compressor stops operation, while outdoor fan operates or stop operation according to the tube temperature of condenser.	1. Normal phenomenon for cooling;
19	Freeze prevention protection for the evaporator					Flash 5 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan stop operation;	1. Normal phenomenon for cooling;
20	Frost prevention (heat pump)					Flash 7 times and off 3s circularly	Indoor fan operates; compressor and outdoor fan stop operation. The electric heating is started up;	1. Normal phenomenon for heating;

9.2 Procedure of Troubleshooting

1. Troubleshooting for temperature sensor F1 F2 F3 F4 FJ
Main check points:
(1) connection terminal (2)temperature sensor (3) main board
Detection procedure in details is as below :

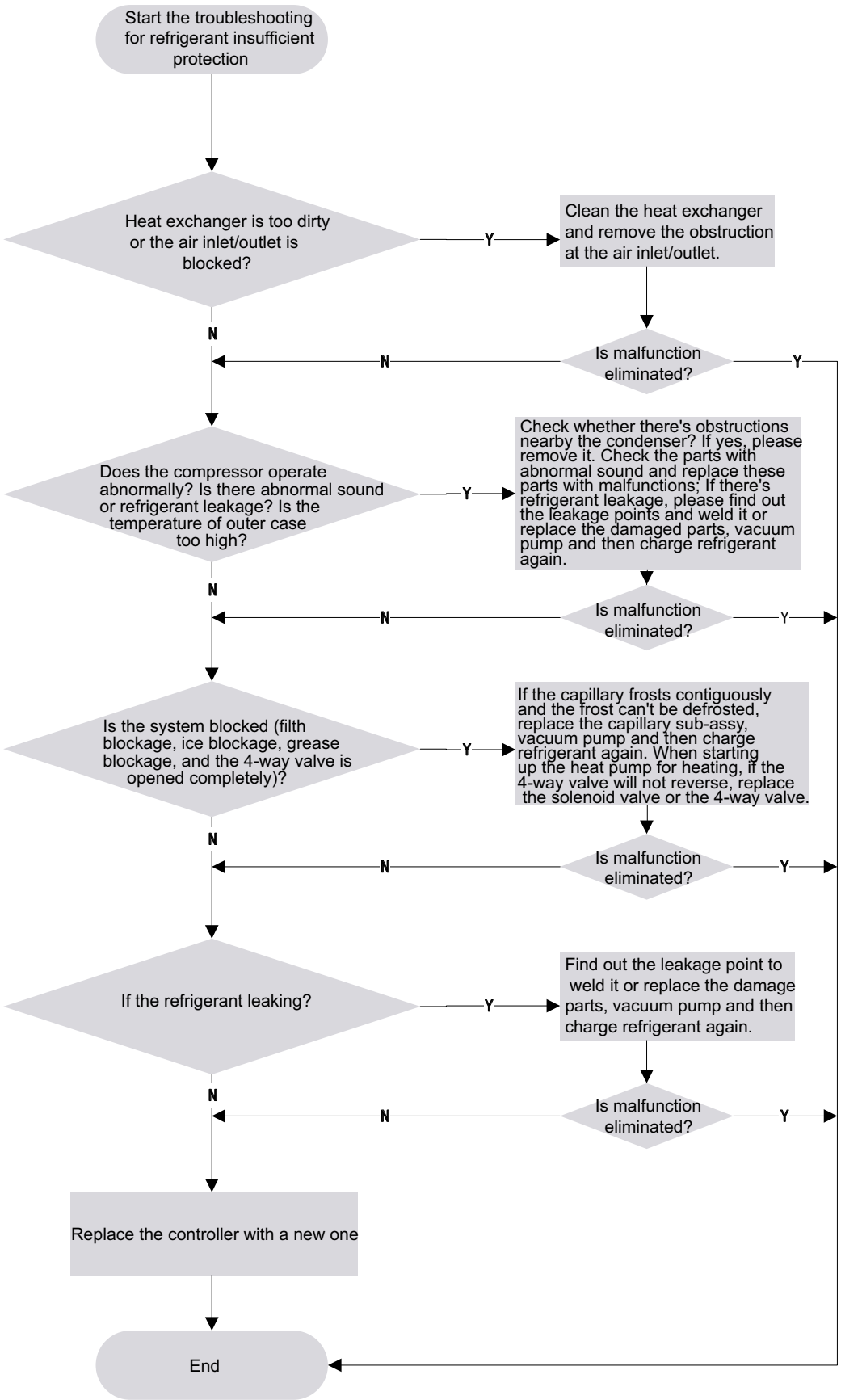


2. Troubleshooting for refrigerant insufficient protection F0

Main check points:

(1) compressor (2) refrigerant (3) filth blockage of air inlet/outlet, heat exchanger or system (4) main board

Detection procedure in details is as below :

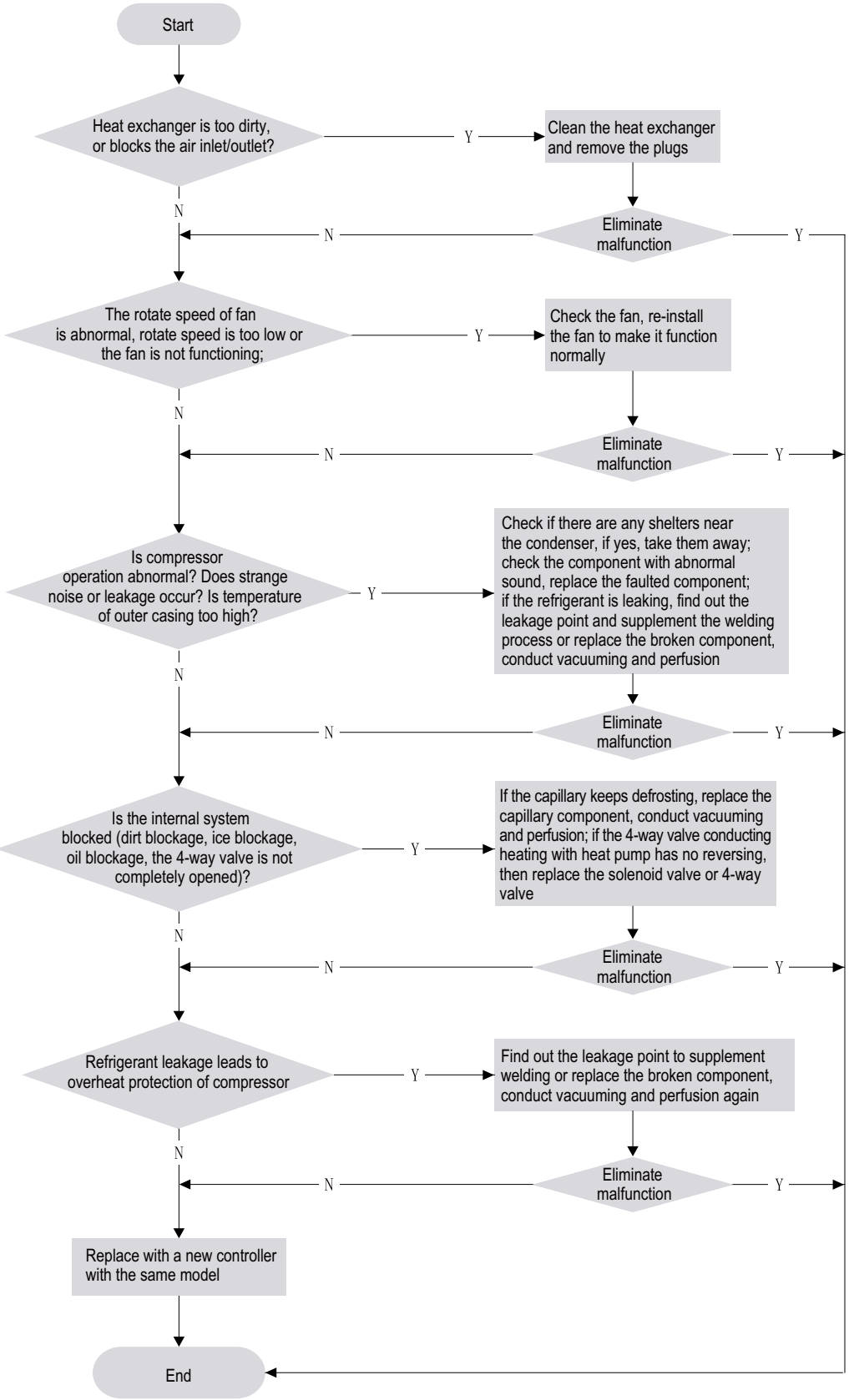


3. Troubleshooting for overload protection H3

Main check points:

(1) compressor (2) refrigerant (3) filth blockage for air inlet/outlet, heat exchanger or system (4) fan (5) main board

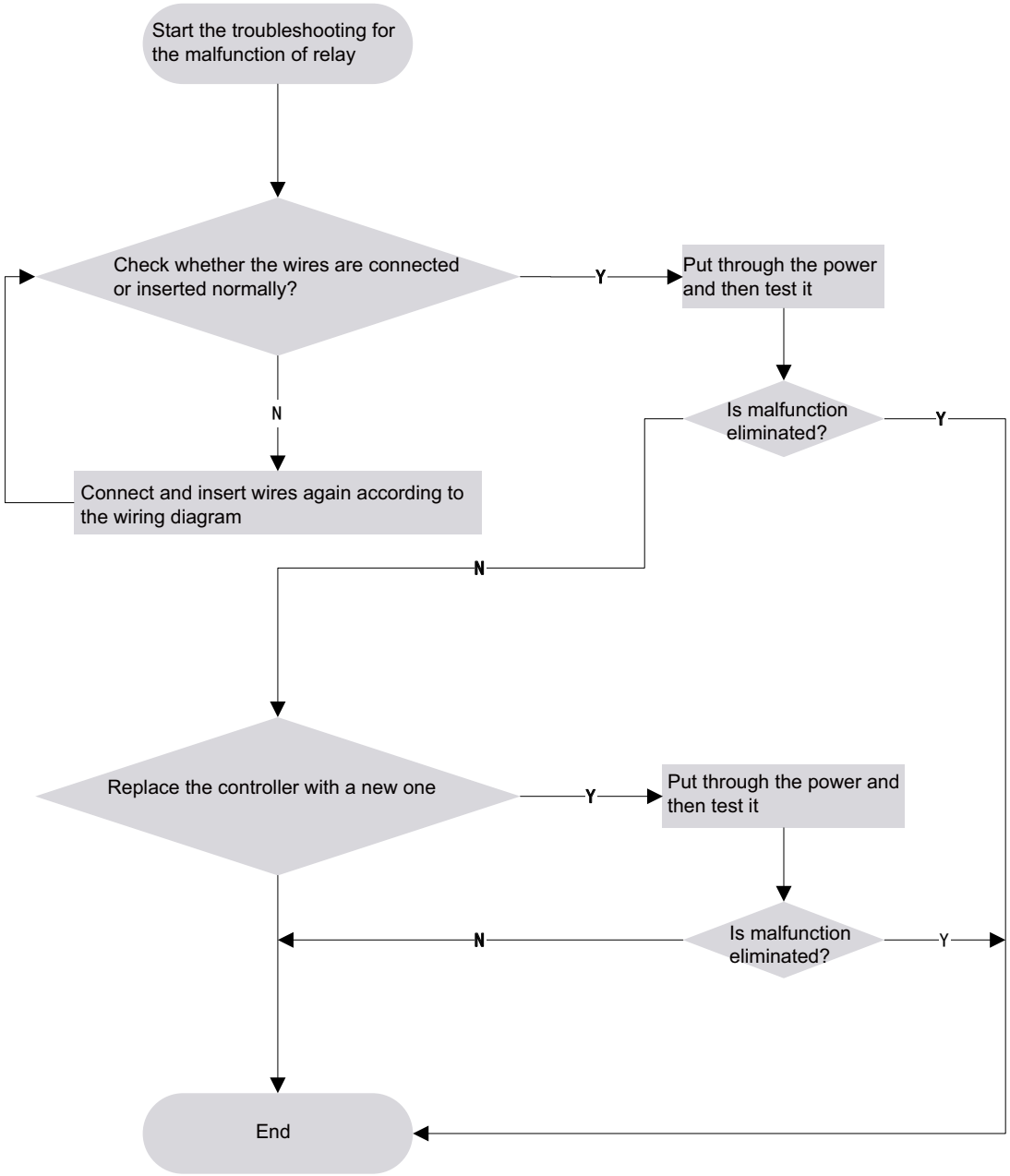
Detection procedure in details is as below :



4. Malfunction of replay A2

Main check points:

(1) wiring diagram (2) main board

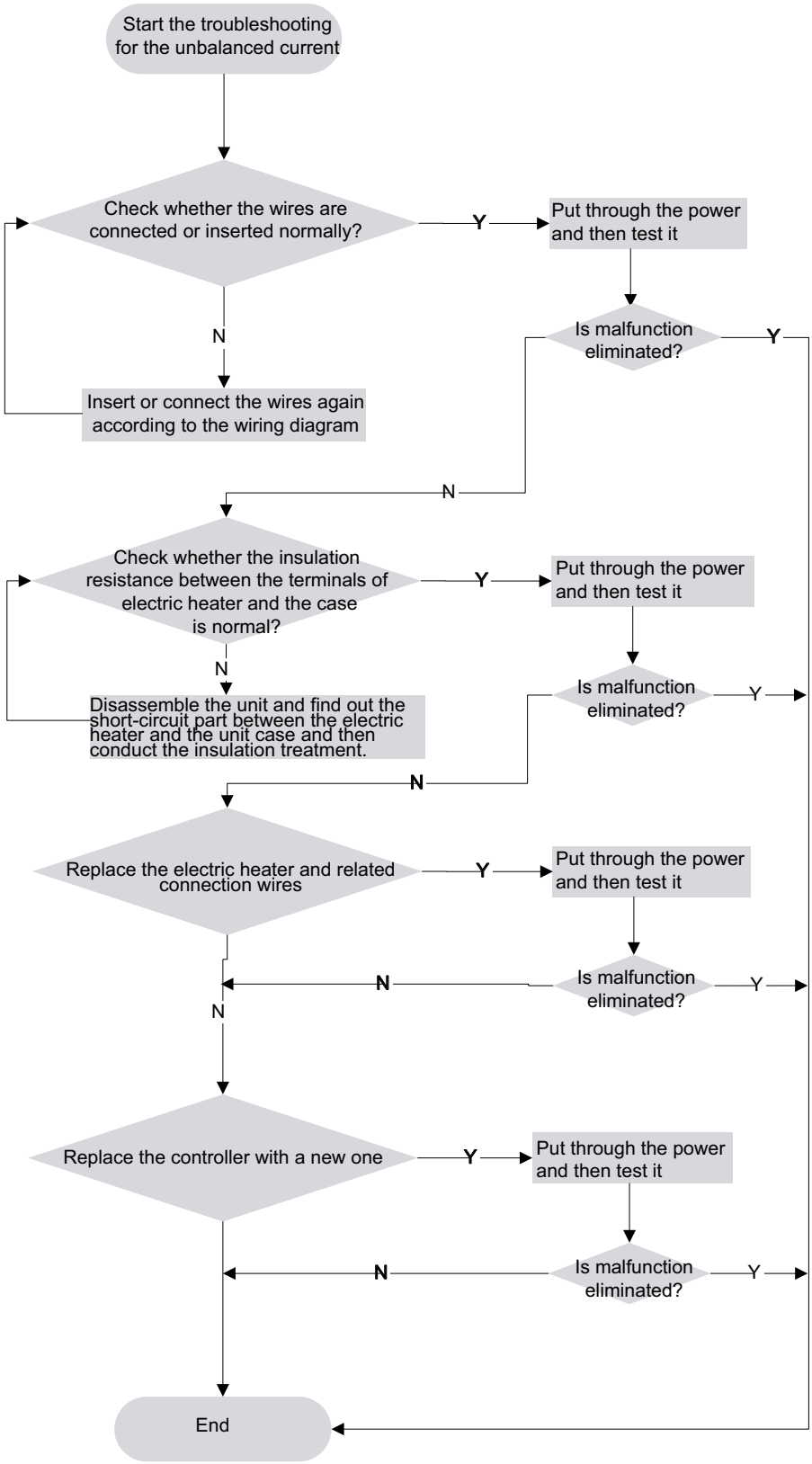


5. Malfunction of unbalanced current (PTAC) U5

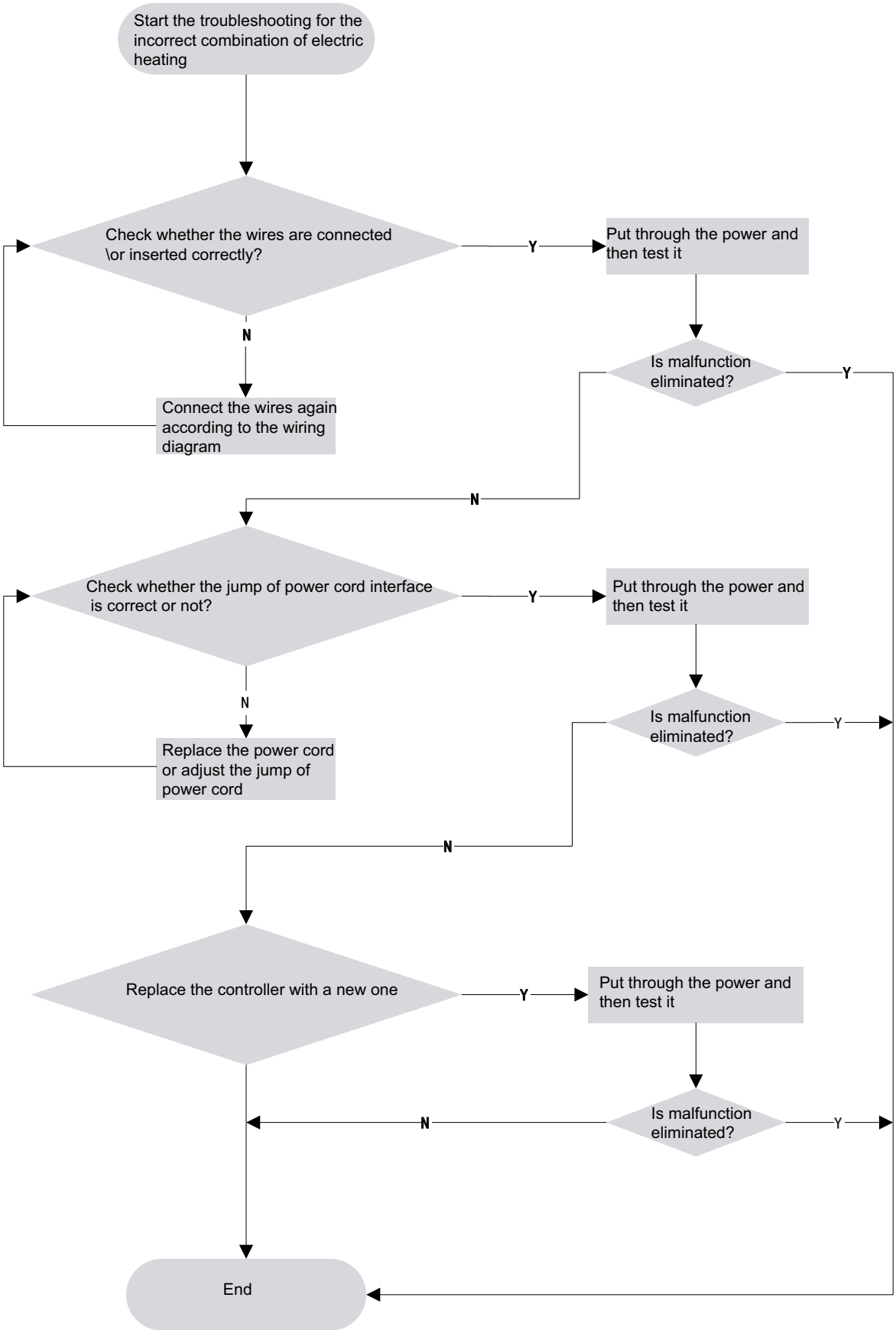
Main check points:

(1) Wiring diagram (2) Main board

Inspection procedure in details is as below:



6. Combination method of electric heating is not correct Ao
Main check points:
(1) wiring diagram (2) main board (3) power cord
Detection procedure in details is as below:

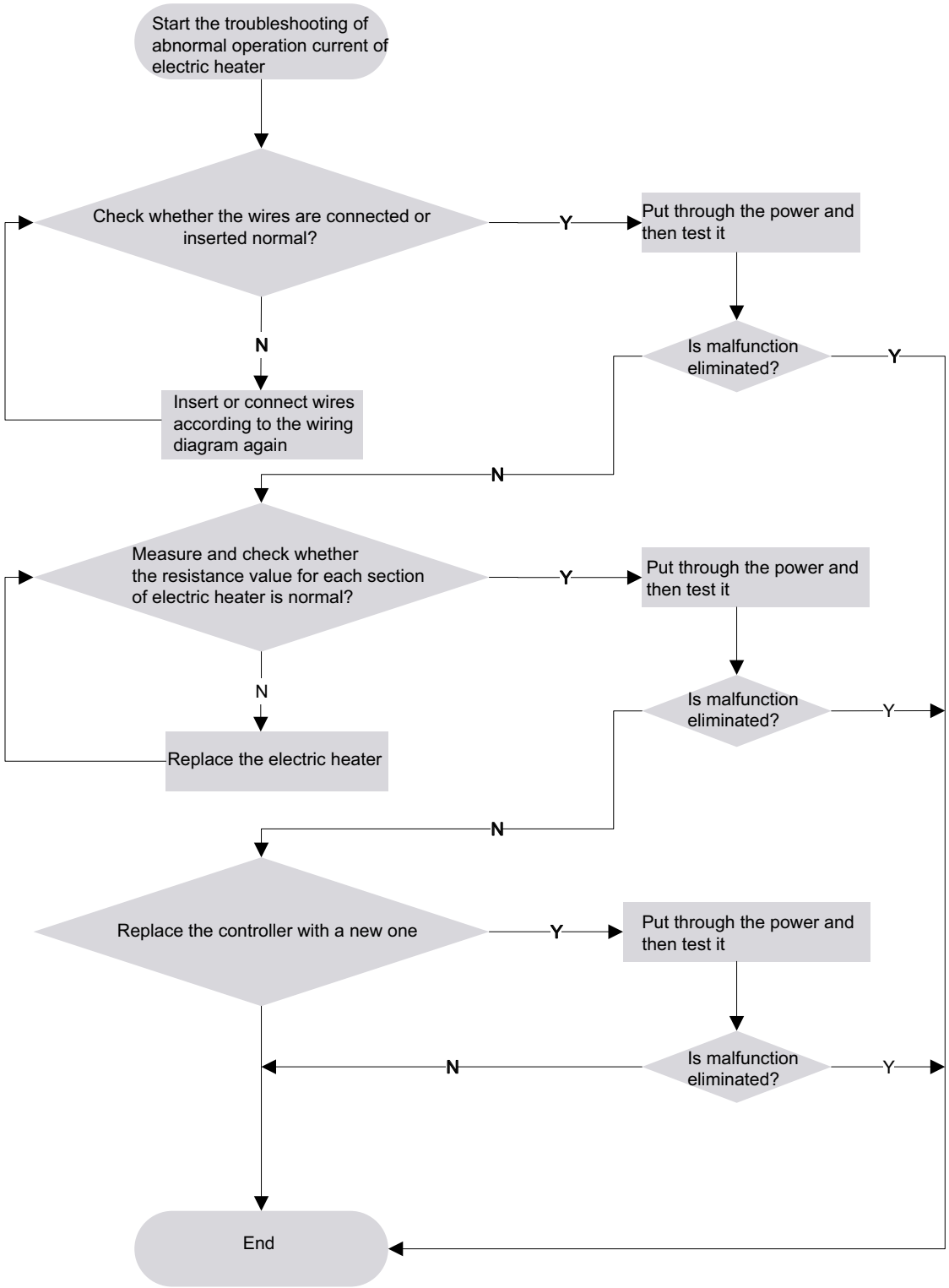


7. Operation current of electric heater is abnormal A4

Main check points:

(1) Wiring diagram (2) main board (3) electric heater

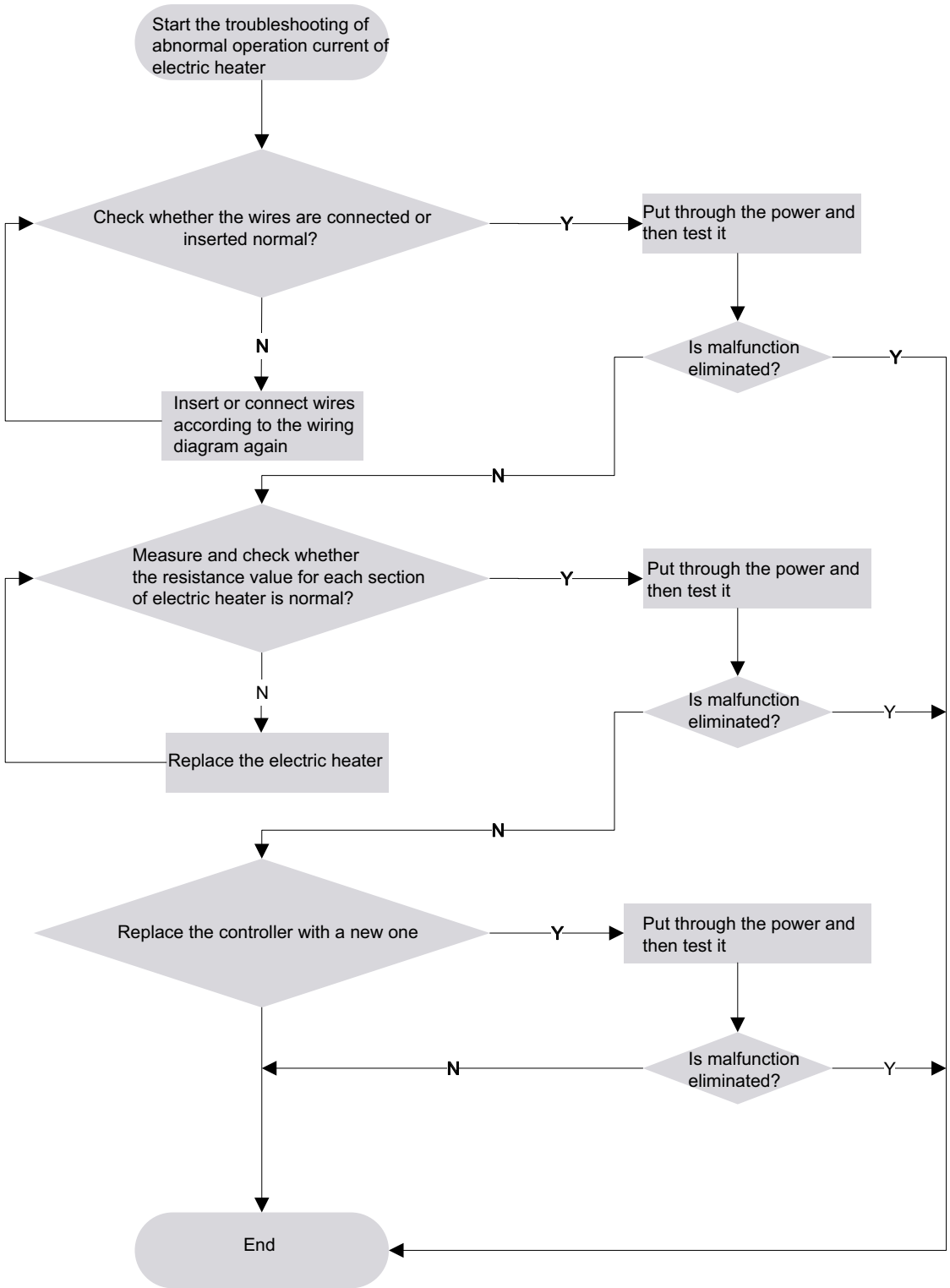
Detection procedure in details is as below:



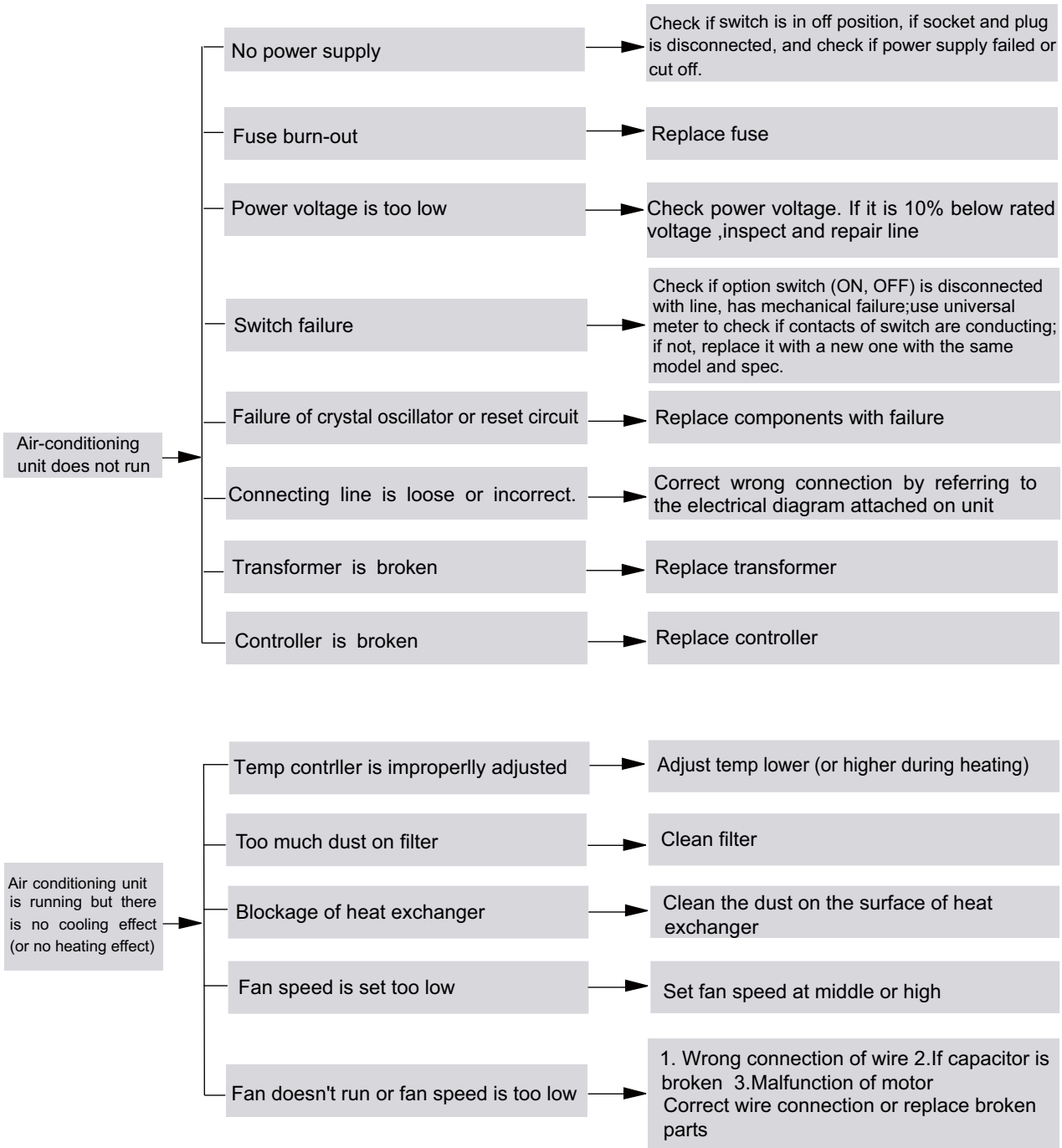
8. Circuit of temperature limiter is broken

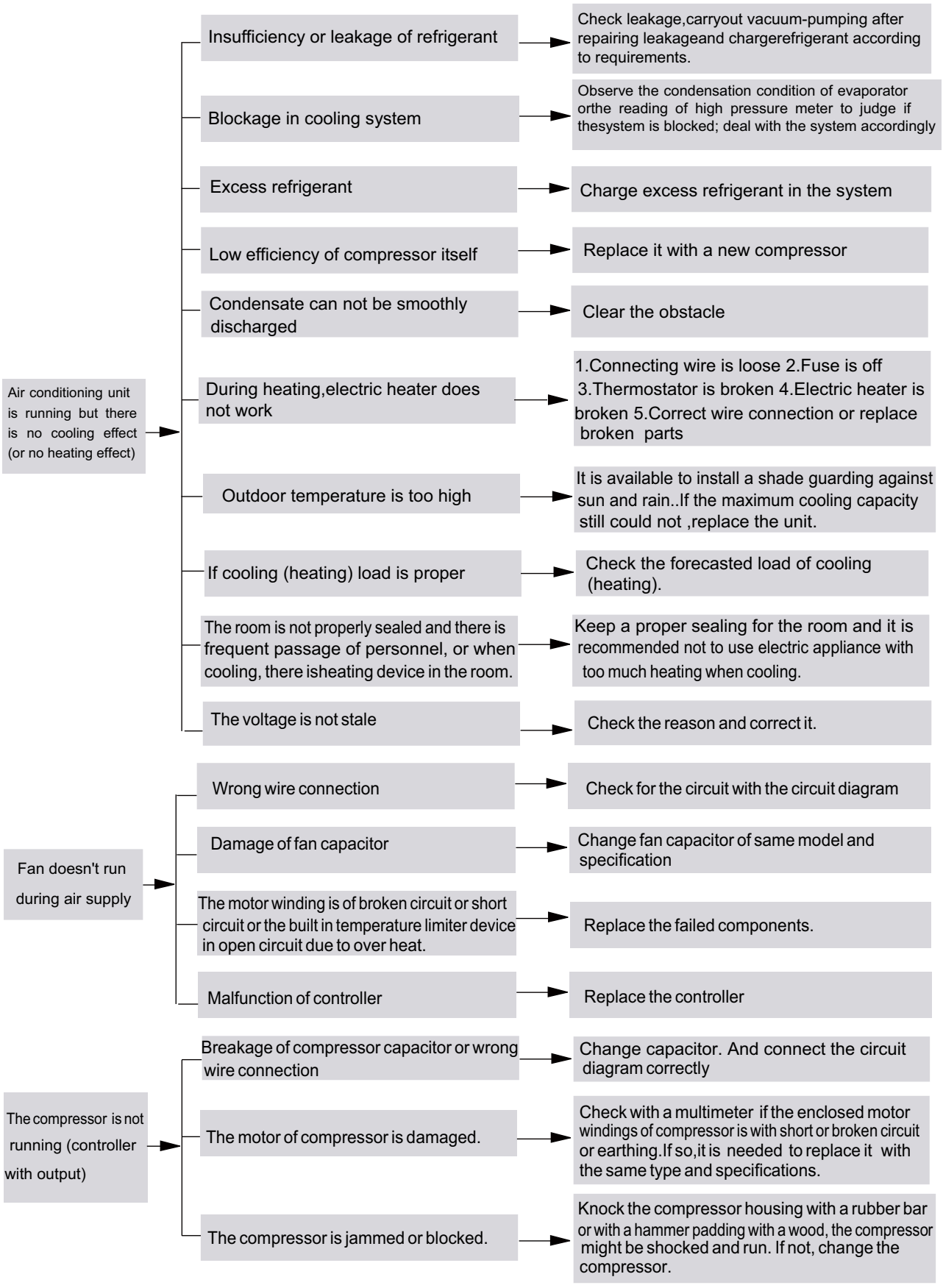
Main check points:

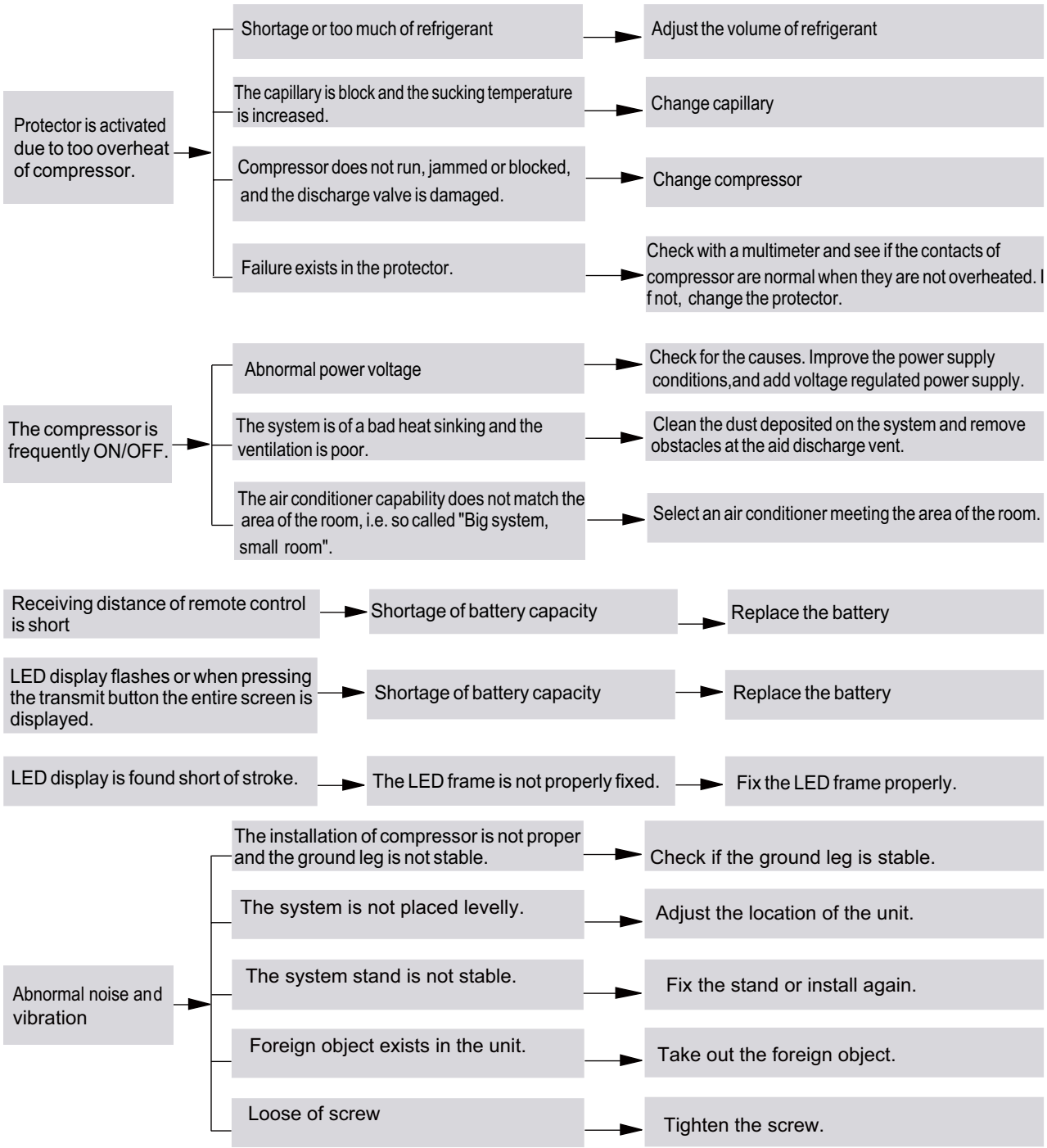
(1) wiring diagram (2) main board (3) electric heater



9.3 Malfunction Analysis




Air conditioning unit is running but there is no cooling effect (or no heating effect)
Insufficiency or leakage of refrigerant
Check leakage,carryout vacuum-pumping after repairing leakageand chargerefrigerant according to requirements.
Blockage in cooling system
Observe the condensation condition of evaporator orthe reading of high pressure meter to judge if thesystem is blocked; deal with the system accordingly
Excess refrigerant
Charge excess refrigerant in the system
Low efficiency of compressor itself
Replace it with a new compressor
Condensate can not be smoothly discharged
Clear the obstacle
During heating,electric heater does not work
1.Connecting wire is loose 2.Fuse is off 3.Thermostator is broken 4.Electric heater is broken 5.Correct wire connection or replace broken parts
Outdoor temperature is too high
It is available to install a shade guarding against sun and rain..If the maximum cooling capacity still could not ,replace the unit.
If cooling (heating) load is proper
Check the forecasted load of cooling (heating).
The room is not properly sealed and there is frequent passage of personnel, or when cooling, there isheating device in the room.
Keep a proper sealing for the room and it is recommended not to use electric appliance with too much heating when cooling.
The voltage is not stale
Check the reason and correct it.
Fan doesn't run during air supply
Wrong wire connection
Check for the circuit with the circuit diagram
Damage of fan capacitor
Change fan capacitor of same model and specification
The motor winding is of broken circuit or short circuit or the built in temperature limiter device in open circuit due to over heat.
Replace the failed components.
Malfunction of controller
Replace the controller
The compressor is not running (controller with output)
Breakage of compressor capacitor or wrong wire connection
Change capacitor. And connect the circuit diagram correctly
The motor of compressor is damaged.
Check with a multimeter if the enclosed motor windings of compressor is with short or broken circuit or earthing.If so,it is needed to replace it with the same type and specifications.
The compressor is jammed or blocked.
Knock the compressor housing with a rubber bar or with a hammer padding with a wood, the compressor might be shocked and run. If not, change the compressor.



Notice: The above malfunction analysis is only for reference. There is no malfunction related to heaitng for cooling only unit.

9.4 Troubleshooting for Normal Malfunction

1. Air Conditioner can't be Started Up

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
No power supply, or poor connection for power plug	After energization, operation indicator isn't bright and the buzzer can't give out sound	Confirm whether its due to power failure. If yes, wait for power recovery. If not, check power supply circuit and make sure the power plug is connected well.
Wrong wire connection between indoor unit and outdoor unit, or poor connection for wiring terminals	Under normal power supply circumstances, operation indicator isn't bright after energization	Check the circuit according to circuit diagram and connect wires correctly. Make sure all wiring terminals are connected firmly
Electric leakage for air conditioner	After energization, room circuit breaker trips off at once	Make sure the air conditioner is grounded reliably Make sure wires of air conditioner is connected correctly Check the wiring inside air conditioner. Check whether the insulation layer of power cord is damaged; if yes, place the power cord.
Model selection for air switch is improper	After energization, air switch trips off	Select proper air switch
Malfunction of remote controller	After energization, operation indicator is bright, while no display on remote controller or buttons have no action.	Replace batteries for remote controller Repair or replace remote controller

2. Poor Cooling (Heating) for Air Conditioner

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Set temperature is improper	Observe the set temperature on remote controller	Adjust the set temperature
Rotation speed of the IDU fan motor is set too low	Small wind blow	Set the fan speed at high or medium
Filter of indoor unit is blocked	Check the filter to see its blocked	Clean the filter
Installation position for indoor unit and outdoor unit is improper	Check whether the installation postion is proper according to installation requirement for air conditioner	Adjust the installation position, and install the rainproof and sunproof for outdoor unit
Refrigerant is leaking	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Units pressure is much lower than regulated range	Find out the leakage causes and deal with it. Add refrigerant.
Malfunction of 4-way valve	Blow cold wind during heating	Replace the 4-way valve
Malfunction of capillary	Discharged air temperature during cooling is higher than normal discharged wind temperature; Discharged air temperature during heating is lower than normal discharged wind temperature; Unitt pressure is much lower than regulated range. If refrigerant isn't leaking, part of capillary is blocked	Replace the capillary
Flow volume of valve is insufficient	The pressure of valves is much lower than that stated in the specification	Open the valve completely
Malfunction of horizontal louver	Horizontal louver can't swing	Refer to point 3 of maintenance method for details
Malfunction of the IDU fan motor	The IDU fan motor can't operate	Refer to troubleshooting for H6 for maintenance method in details
Malfunction of the ODU fan motor	The ODU fan motor can't operate	Refer to point 4 of maintenance method for details
Malfunction of compressor	Compressor can't operate	Refer to point 5 of maintenance method for details

3. Horizontal Louver can't Swing

Possible Causes	Discriminating Method (Air conditioner Status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Stepping motor is damaged	Stepping motor can't operate	Repair or replace stepping motor
Main board is damaged	Others are all normal, while horizontal louver can't operate	Replace the main board with the same model

4. ODU Fan Motor can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of the ODU fan motor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the capacity of fan
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Motor of outdoor unit is damaged	When unit is on, cooling/heating performance is bad and ODU compressor generates a lot of noise and heat.	Change compressor oil and refrigerant. If no better, replace the compressor with a new one

5. Compressor can't Operate

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Wrong wire connection, or poor connection	Check the wiring status according to circuit diagram	Connect wires according to wiring diagram to make sure all wiring terminals are connected firmly
Capacity of compressor is damaged	Measure the capacity of fan capacitor with an universal meter and find that the capacity is out of the deviation range indicated on the nameplate of fan capacitor.	Replace the compressor capacitor
Power voltage is a little low or high	Use universal meter to measure the power supply voltage. The voltage is a little high or low	Suggest to equip with voltage regulator
Coil of compressor is burnt out	Use universal meter to measure the resistance between compressor terminals and its 0	Repair or replace compressor
Cylinder of compressor is blocked	Compressor can't operate	Repair or replace compressor

6. Air Conditioner is Leaking

Possible causes	Discriminating method (air conditioner status)	Troubleshooting
Drain pipe is blocked	Water leaking from indoor unit	Eliminate the foreign objects inside the drain pipe
Drain pipe is broken	Water leaking from drain pipe	Replace drain pipe
Wrapping is not tight	Water leaking from the pipe connection place of indoor unit	Wrap it again and bundle it tightly

7. Abnormal Sound and Vibration

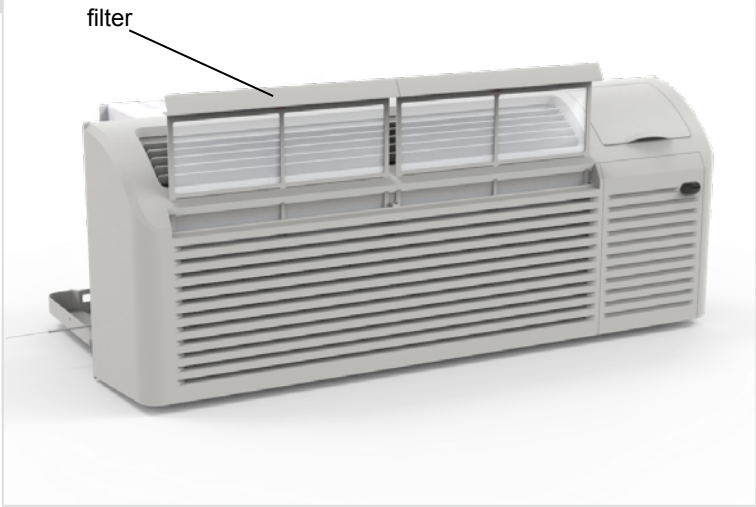
Possible causes	Discriminating method (air conditioner status)	Troubleshooting
When turn on or turn off the unit, the panel and other parts will expand and theres abnormal sound	Theres the sound of "PAPA"	Normal phenomenon. Abnormal sound will disappear after a few minutes.
When turn on or turn off the unit, theres abnormal sound due to flow of refrigerant inside air conditioner	Water-running sound can be heard	Normal phenomenon. Abnormal sound will disappear after a few minutes.
Foreign objects inside the indoor unit or therere parts touching together inside the indoor unit	Theres abnormal sound fro indoor unit	Remove foreign objects. Adjust all parts position of indoor unit, tighten screws and stick damping plaster between connected parts
Foreign objects inside the outdoor unit or therere parts touching together inside the outdoor unit	Theres abnormal sound fro outdoor unit	Remove foreign objects. Adjust all parts position of outdoor unit, tighten screws and stick damping plaster between connected parts
Short circuit inside the magnetic coil	During heating, the way valve has abnormal electromagnetic sound	Replace magnetic coil
Abnormal shake of compressor	Outdoor unit gives out abnormal sound	Adjust the support foot mat of compressor, tighten the bolts
Abnormal sound inside the compressor	Abnormal sound inside the compressor	If add too much refrigerant during maintenance, please reduce refrigerant properly. Replace compressor for other circumstances.

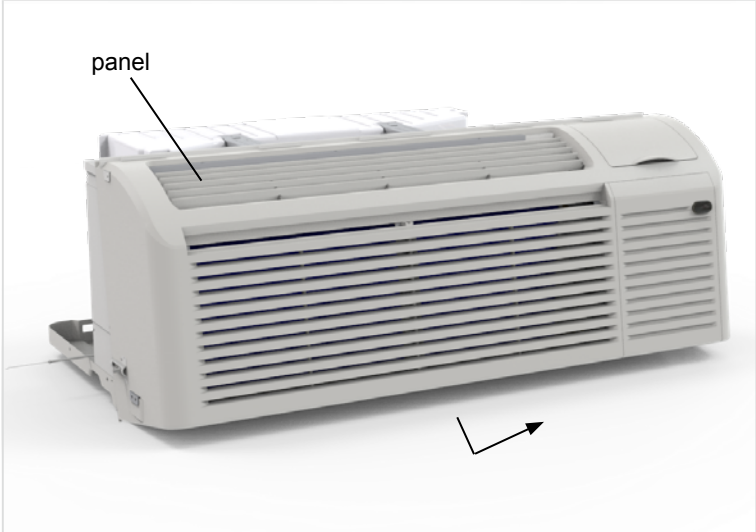
10. Removal Procedure

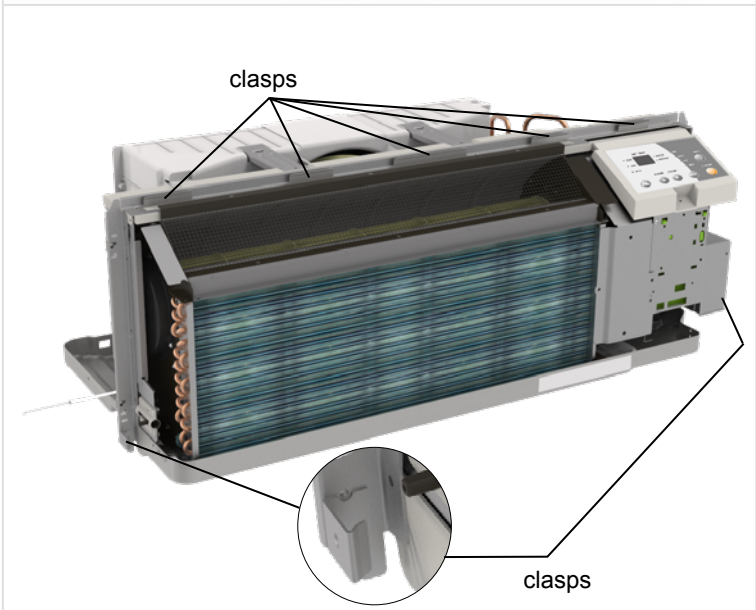
Note: Take heat pump+electric heating unit as example for the disassemly; cooling only+electric heating is a little different

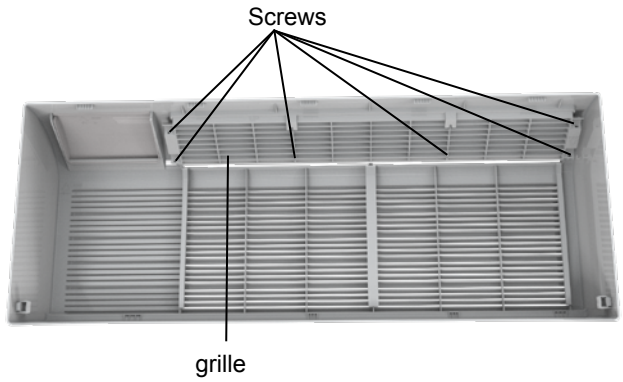
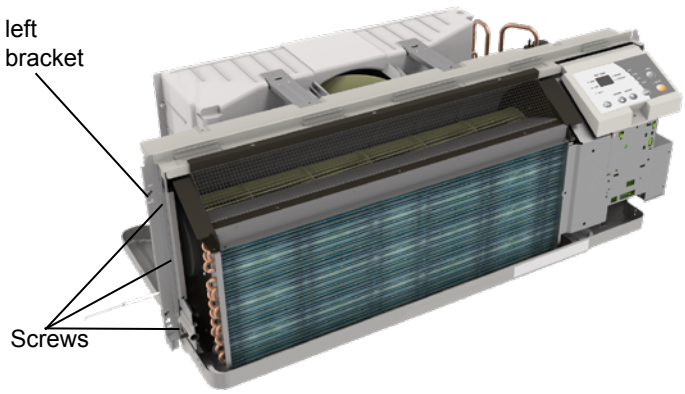
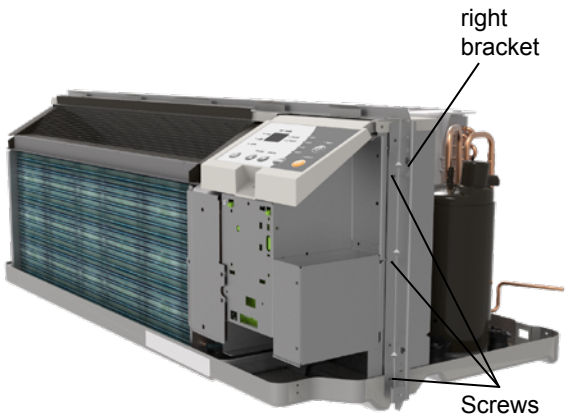
⚠ **Caution: pull out the power,discharge the refrigerant completely before removal.**

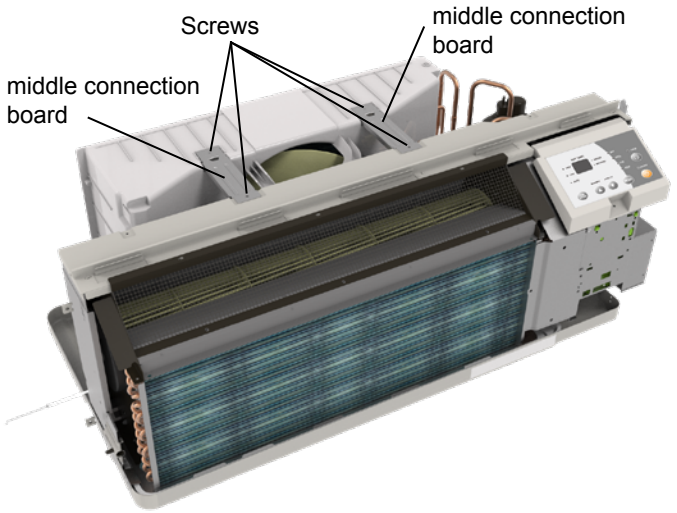
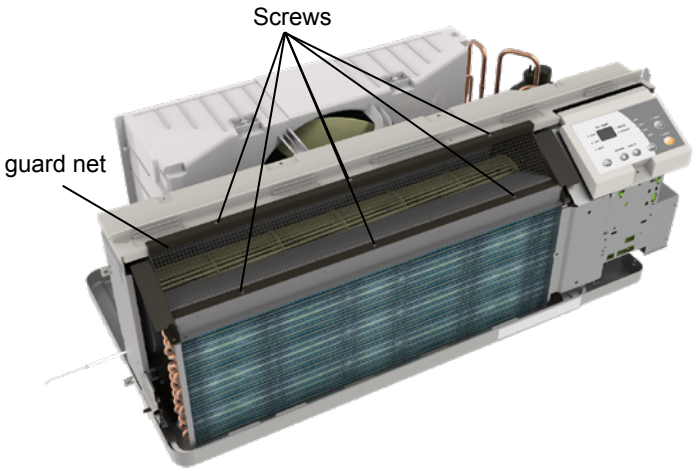
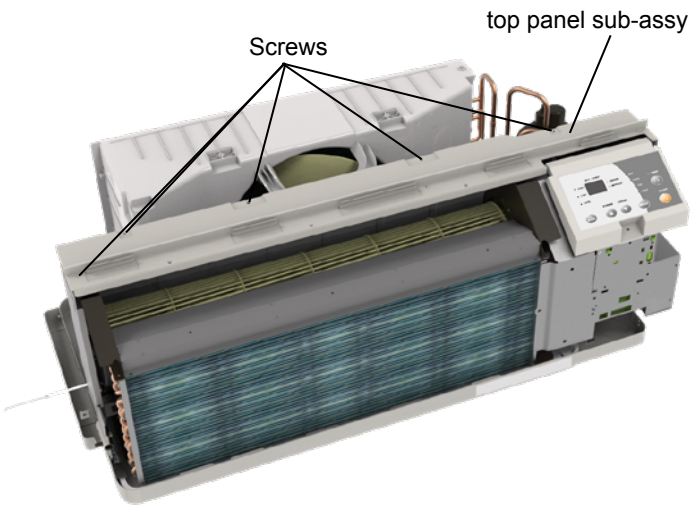
Step	Procedure
1. Remove panel	
	Hold front end of filter with hand and then pull the filter upwards to remove it.
	Drag the lower part of panel, pull it outwards and upwards to left separate from clasps,and then remove the front panel.

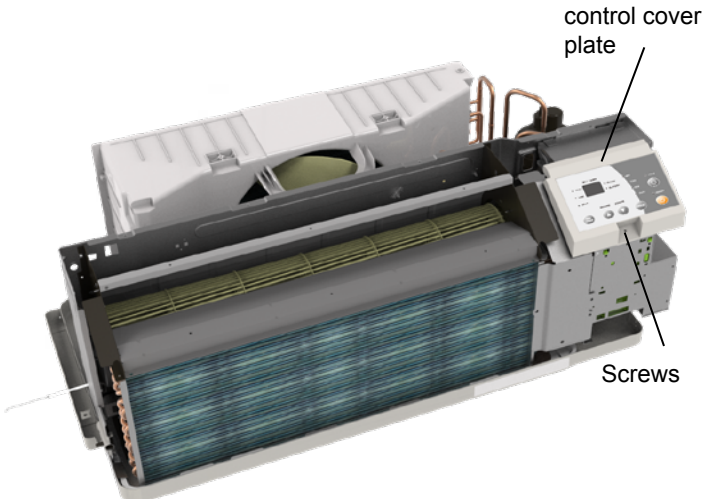
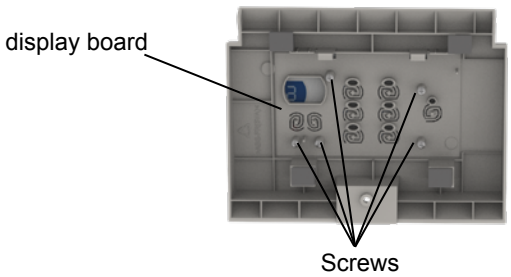
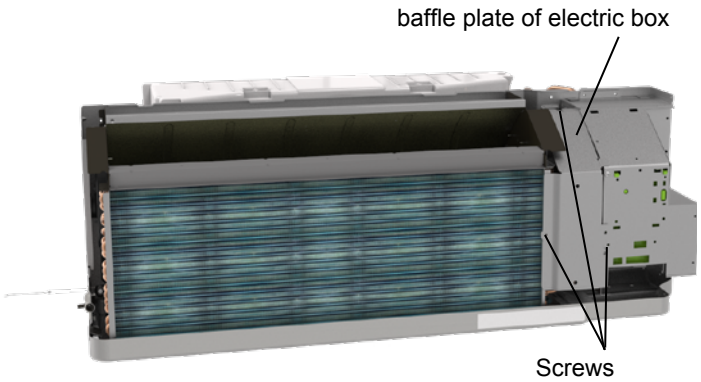
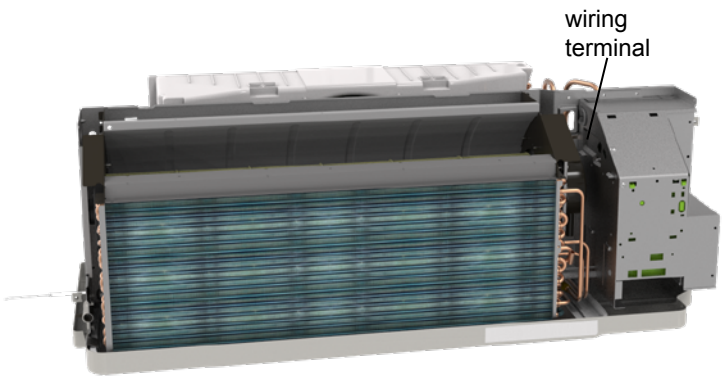


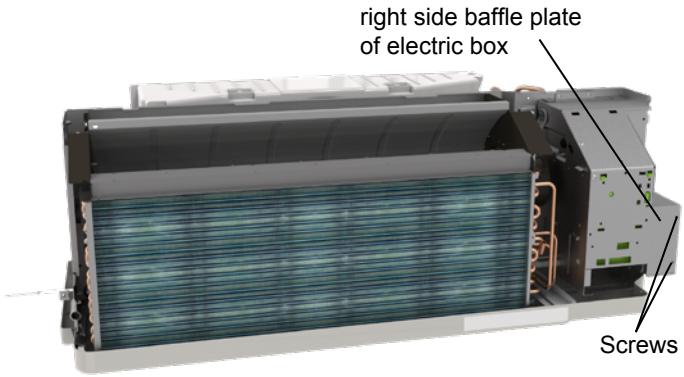
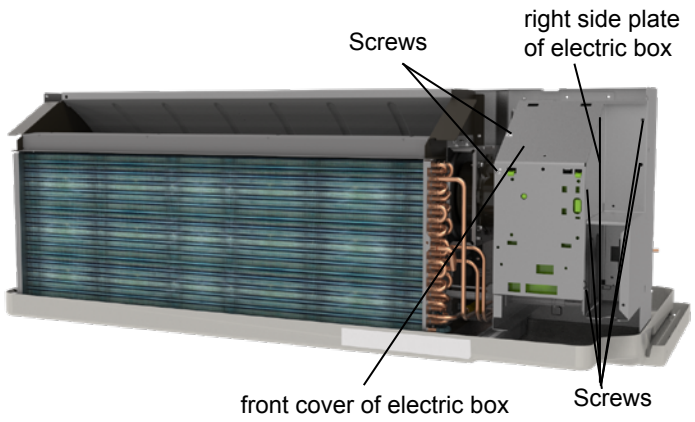
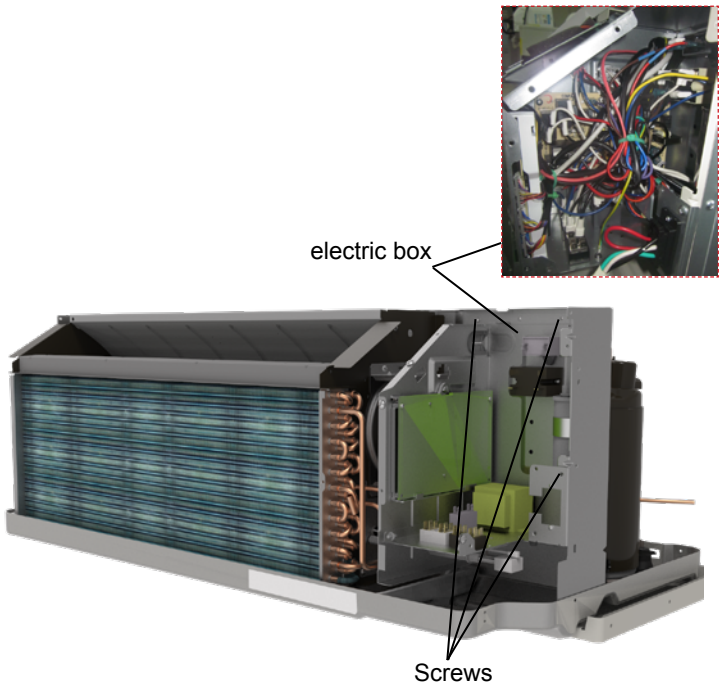


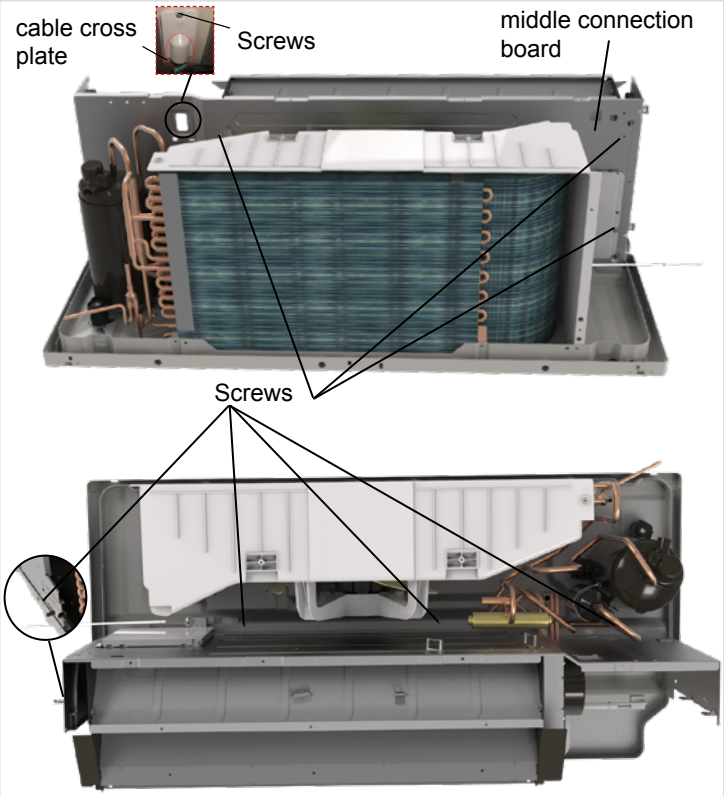
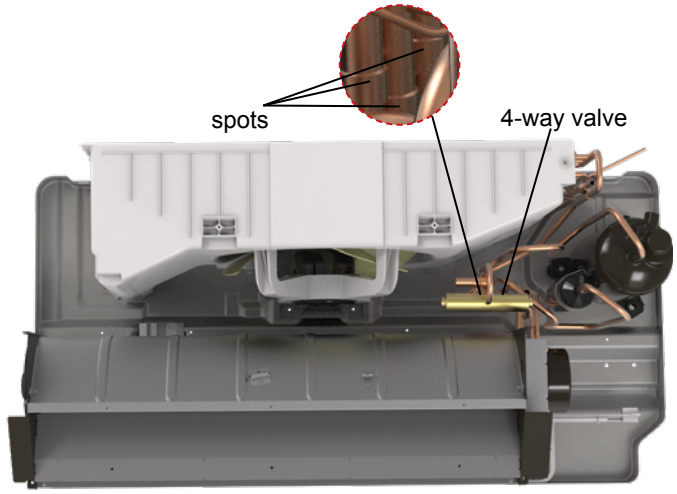
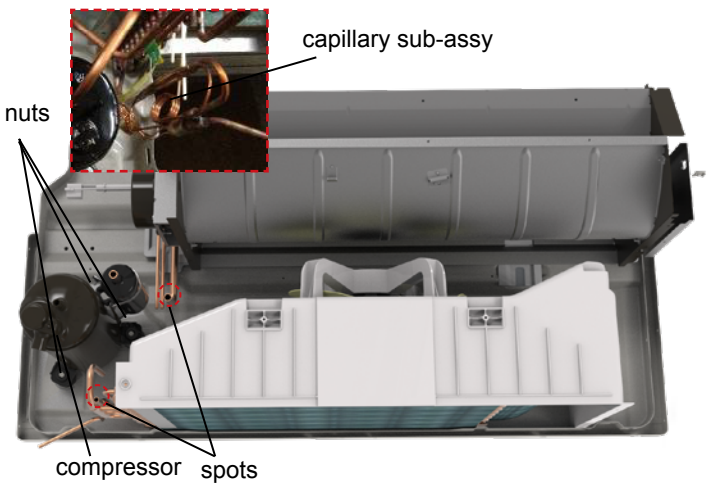


Step	Procedure	
	Remove 6 screws fixing the grille and then remove the grille.	
2.Remove left and right brackets and guard board		
	Remove 3 screws fixing left bracket and then remove the left bracket.	
	Remove 3 screws fixing right bracket and then remove the right bracket.	

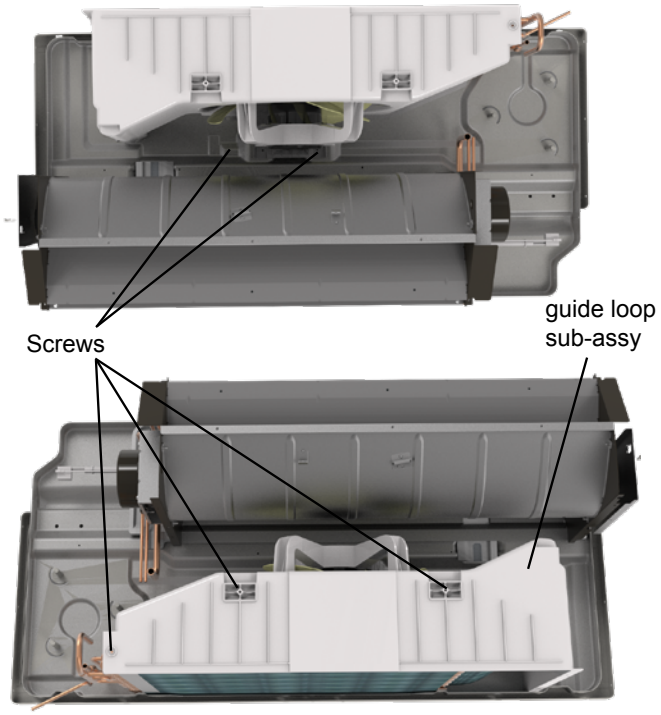
Step	Procedure
3.Remove middle connection board	
Remove 4 screws fixing the middle connection board and then remove the middle connection board.	
4.Remove guard net	
Remove 6 screws fixing the guard net and then remove the guard net.	
5.Remove top panel sub-assy	
Remove 5 screws fixing the top panel subassy and then remove the top panel subassy.	

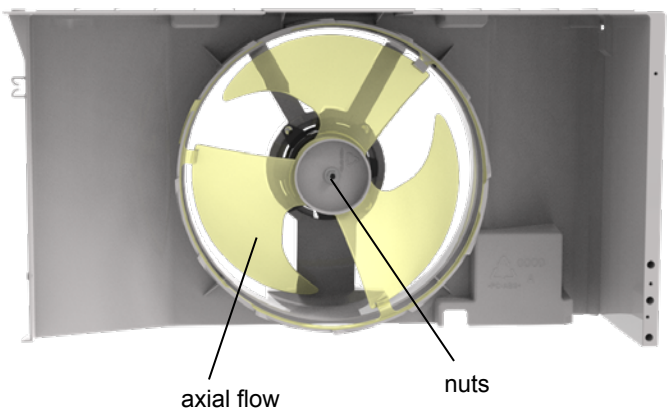
Step	Procedure
6.Remove electric box	
Remove one screw fixing the control cover plate, pull out the wiring terminal connecting control cover plate and electric box and then remove the control cover plate.	
Remove 5 screws fixing display board and then remove the display board.	
Remove screws fixing baffle plate of electric box and then remove the baffle plate of electric box.	
Pull out the motor wiring terminal.	

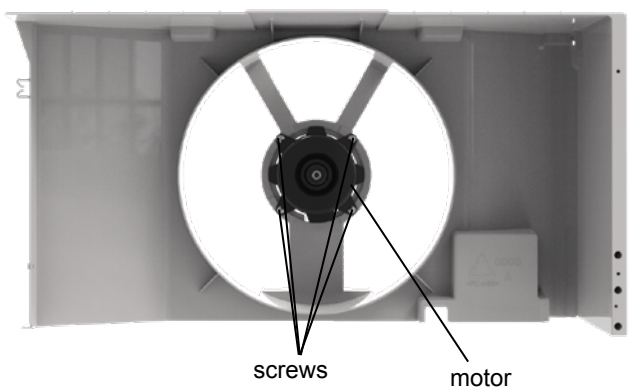
Step	Procedure	
	Remove screws fixing right side baffle plate of electric box and then remove the right side baffle plate of electric box.	
	(1) Remove screws fixing right side plate of electric box and then remove the right side plate of electric box. (2) Remove 2 screws fixing front cover of electric box and then remove the front cover of electric box.	
	Remove screws fixing electric box and then remove the electric box.	

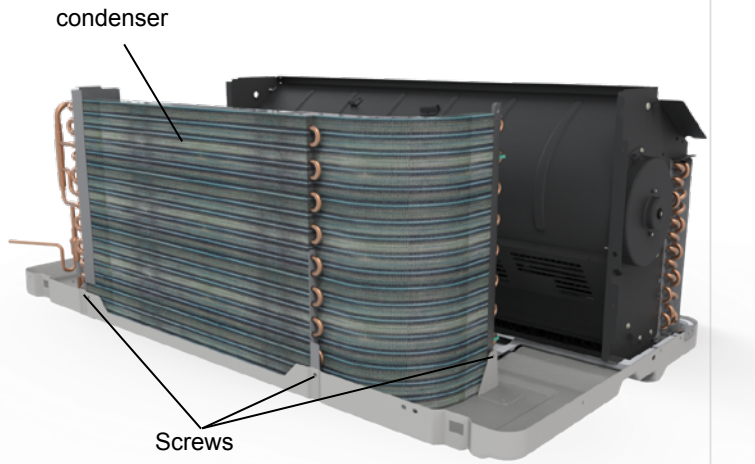
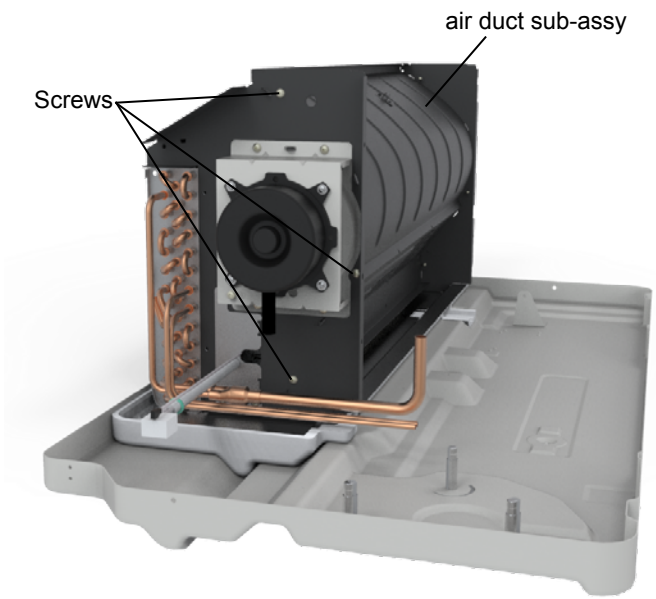
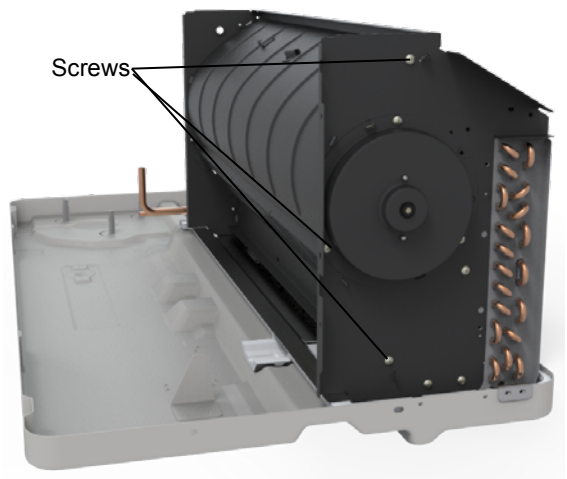
Step	Procedure
7.Remove middle connection board	
Remove 7 screws fixing the middle connection board and then remove the middle connection board. Remove one screw fixing the cable cross plate and then remove the cable cross plate.	
8.Remove 4-way valve	
Unsolder spot weld between 4-way valve and compressor, condenser and evaporator, and then remove 4-way valve.	
9.Remove compressor and capillary sub-assy	
Remove 3 nuts fixing compressor and then remove compressor. Unsolder spot weld between capillary subassy compressor and condenser and then remove capillary sub-assy.	

Step	Procedure
10.Remove guide loop sub-assy	
	Remove screws fixing the guide loop subassy,and then pull the guide loop upwards to remove it.
11.Remove axial flow	
	Remove nuts fixing axial flow blade and then pull the axial flow blade outwards to remove it.
12.Remove outdoor motor	
	Remove 4 screws fixing motor and then remove the motor.

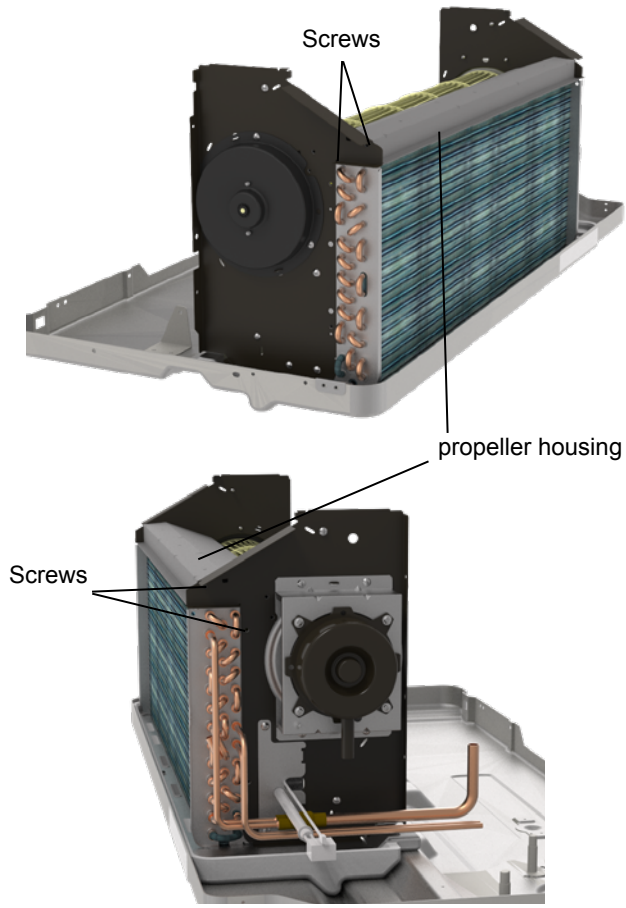


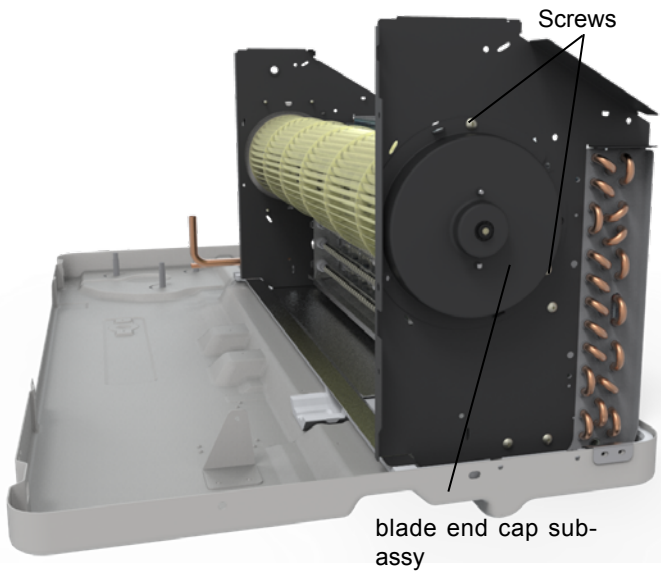




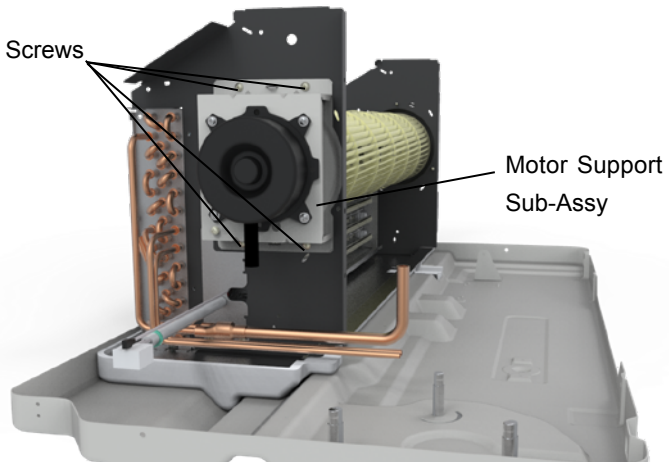
Step	Procedure
13.Remove condenser	
	Remove 3 screws fixing condenser and then pull the condenser upwards to remove it.
	
14.Remove air duct sub-assy	
	Remove 6 screws fixing the air duct sub-assy and then remove the air duct sub-assy.
	
	

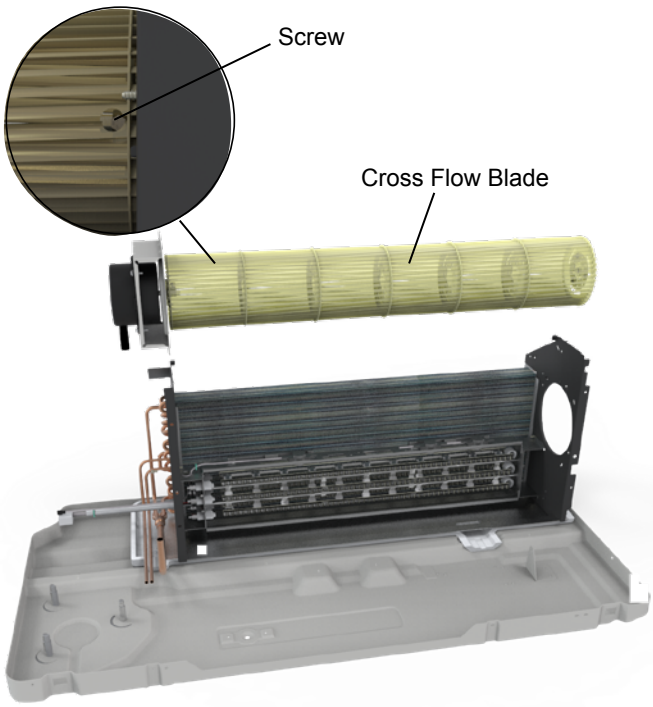
Step	Procedure
15.Remove propeller housing	
	Remove 4 screws fixing the propeller housing and then remove the propeller housing.
16.Remove blade end cap sub-assy	
	Remove 2 screws fixing the blade end cap sub-assy and then remove the Blade end cap sub-assy.

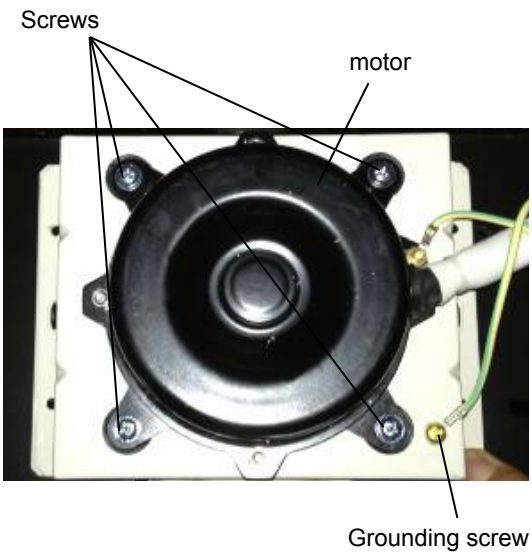


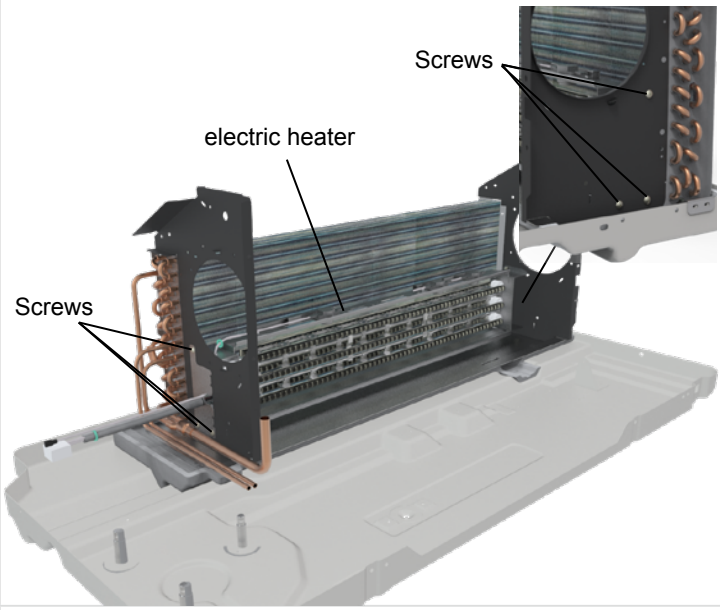
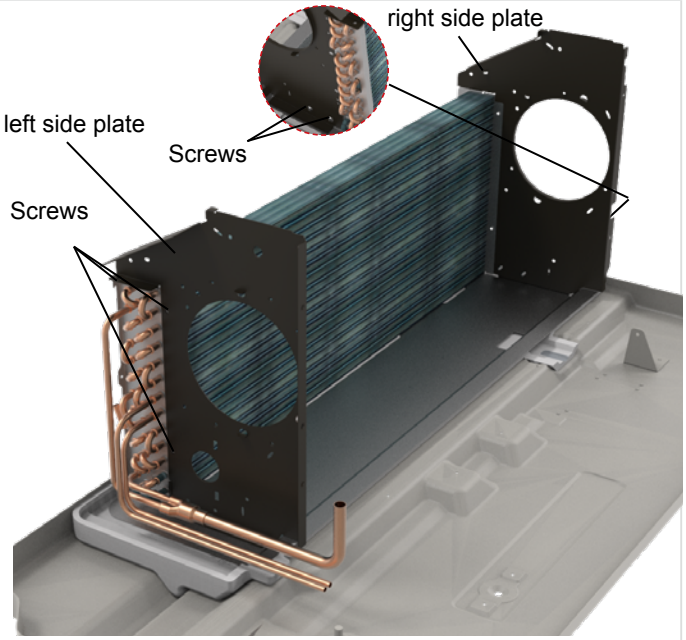
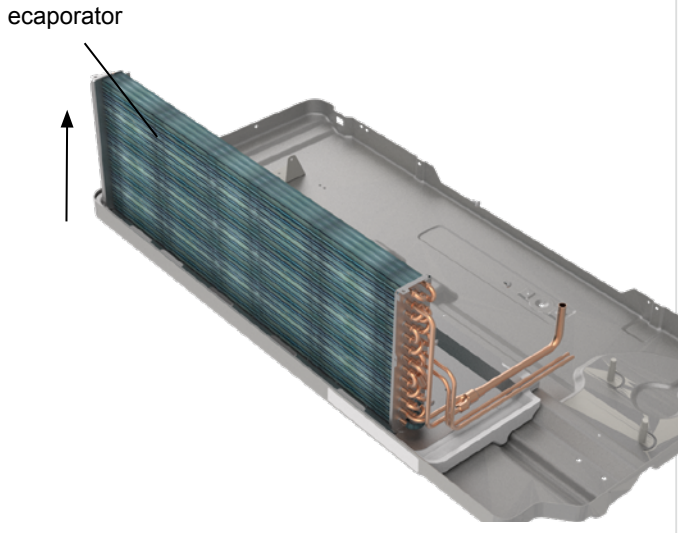


Step	Procedure
17.Remove motor support sub-assy, motor and cross flow fan	
a	Remove 4 screws fixing motor support, then remove the motor support sub-assy , the motor and the cross flow fan;
b	unlocking one screw fixing cross flow blade, then remove the motor support sub-assy.
c	Remove 4 screws fixing motor and one grounding screw, then remove the motor.







Step	Procedure
18.Remove electric heater	
	Remove screws fixing electric heater,and then pull the electric heater vertically to remove it.
	
19.Remove left side plate and right side plate	
	Remove screws fixing left side plate and right side plate,and then remove the left side plate and right side plate.
	
20.Remove evaporator	
	Pull the evaporator upwards to remove it.
	

Appendix:

Appendix 1: Reference Sheet of Celsius and Fahrenheit

Conversion formula for Fahrenheit degree and Celsius degree: Tf=Tcx1.8+32

Set temperature

Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）	Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）	Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

Ambient temperature

Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）	Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）	Fahrenheit display temperature（˚F）	Fahrenheit（˚F）	Celsius（℃）
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

Appendix 2: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor (15K)

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	138.10	0	49.02	20	18.75	40	7.97
-18	128.60	2	44.31	22	17.14	42	7.35
-16	115.00	4	40.09	24	15.68	44	6.79
-14	102.90	6	36.32	26	14.36	46	6.28
-12	92.22	8	32.94	28	13.16	48	5.81
-10	82.75	10	29.90	30	12.07	50	5.38
-8	74.35	12	27.18	32	11.09	52	4.99
-6	66.88	14	24.73	34	10.20	54	4.63
-4	60.23	16	22.53	36	9.38	56	4.29
-2	54.31	18	20.54	38	8.64	58	3.99

Resistance Table of Ambient Temperature Sensor (20K)

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	181.40	20	25.01	60	4.95	100	1.35
-15	145.00	25	20.00	65	4.14	105	1.16
-10	110.30	30	16.10	70	3.48	110	1.01
-5	84.61	35	13.04	75	2.94	115	0.88
0	65.37	40	10.62	80	2.50	120	0.77
5	50.87	45	8.71	85	2.13	125	0.67
10	39.87	50	7.17	90	1.82	130	0.59
15	31.47	55	5.94	95	1.56	135	0.52

Resistance Table of Ambient Temperature Sensor (50K)

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-30	911.400	10	98	50	17.65	90	4.469
-25	660.8	15	77.35	55	14.62	95	3.841
-20	486.5	20	61.48	60	12.17	100	3.315
-15	362.9	25	49.19	65	10.18	105	2.872
-10	274	30	39.61	70	8.555	110	2.498
-5	209	35	32.09	75	7.224	115	2.182
0	161	40	26.15	80	6.129	120	1.912
5	125.1	45	21.43	85	5.222	125	1.682

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