



TECHNICAL MANUAL

AE/AH

R410A Window Air Conditioners & Heat Pumps

- All safety information must be followed.
See Installation instructions for more safety precautions.
- Refer to the appropriate Parts Catalog for part number information.
- Models listed on page 3.



This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures or services performed by an unqualified person.

RT4271000
May 2010



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PRODUCT IDENTIFICATION

The model number is used for positive identification of component parts used in manufacturing. Please use this number when requesting service or parts information.

AE093E35AX



AH093E35AX

AE123E35AX

AH123E35AX


AE183E35AX

AH183E35AX

 **WARNING** HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH. 

To avoid death, personal injury or property damage due to electrical shock:


- Observe all local codes and ordinances.
- Disconnect electrical power to unit before servicing.
- Ground appliance properly.
- Check with a qualified electrician if you are not sure this appliance is properly grounded.
- DO NOT ground to gas line.
- DO NOT ground to cold water pipe if pipe is interrupted by plastic, non-metallic gaskets, or other insulating (non-conducting) materials.
- DO NOT modify plug on power cord. If plug does not fit electrical outlet, have proper outlet installed by qualified electrician.
- DO NOT have a fuse in the neutral or ground circuit. A fuse in the neutral or ground circuit could result in an electrical shock.
- DO NOT use an extension cord with this appliance.
- DO NOT use an adapter plug with this appliance.
- DO NOT pinch power cord.
- DO NOT REMOVE warning tag from power cord.


 **WARNING**


HIGH TEMPERATURE STRESS HAZARD
This room air conditioner is not meant to provide unattended cooling or life support for persons or animals that are unable to react to failure of the product.

The failure of an unattended air conditioner may result in extreme heat in the conditioned space causing overheating or death of persons or animals.

Precautions must be taken to ward off or guard against such an occurrence.

 **WARNING** The United States Environmental Protection Agency (“EPA”) has issued various regulations regarding the introduction and disposal of refrigerants introduced into this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. These regulations may vary by jurisdiction. Should questions arise, contact your local EPA office.

 **WARNING** Do not connect or use any device that is not design certified by Goodman for use with this unit. Serious property damage, personal injury, reduced unit performance and/or hazardous conditions may result from the use of such non-approved devices.

 **WARNING** To prevent the risk of property damage, personal injury, or death, do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this appliance.

PRODUCT DESIGN

AE room air conditioners and AH heat pump units are designed for window installations in residential applications and are available in 9,000, 12,000 and 18,000 BTUH sizes. They are designed for 208/230 volt single phase applications.

The provided filter must be installed and under no circumstances should the unit be operated without the filter in place.

Location and Clearances

Be sure electrical service is adequate for chosen model of air conditioner or heat pump. Complete electrical rating for unit is found on serial plate located behind front grille. Electrical outlet must be close enough to unit for power cord to reach without strain.

Air conditioner should be the only appliance on individual circuit.

For personal safety and to avoid possible damage to appliance or home, observe all safety instructions.

- *Unit with an optional window mounting kit*
These models are designed for mounting through an opening in a wall. These units can be adapted to window installation by using the optional window mounting kit supplied with your unit.
- *Unit without a window mounting kit*
No window mounting kit is supplied with the unit. These models are designed for mounting through an opening in a wall. These units can be adapted to window installation by purchasing an optional window mounting kit. Consult your dealer to choose the kit that is appropriate for your model and installation.

NOTES:

1. Mechanical experience is required to install the air conditioner or heat pump.
2. Installation can take from 1 to 3 hours, depending on installer's knowledge and skill.
3. If you encounter problems during installation, call our consumer information line toll-free at 1-877-376-0214 (U.S. and Canada only). If your problem cannot be resolved by phone, contact an authorized Amana® brand servicer. *Contact and service will be at your expense.*

SPECIFICATIONS

AE***E35AX

MODEL	AE093E35AX	AE123E35AX	AE183E35AX
Cooling (BTU's)	9500 9200	11600 11200	17800 17400
@ EER	10.0	10.0	9.7
Cooling Watts	950 - 920	1160 - 1120	1835 - 1795
Cooling Amps	4.3 - 4.5	5.2 - 5.7	8.2 - 8.8
Electric Heat	10700 - 8500	10700 - 8500	11000 - 9000
Rating Electric Heat Watts	3500	3500	3600
Actual Electric Heat Watts	3575 - 2765	3575 - 2765	3555 - 2900
Electric Heat Amps	16.0 - 14.6	16.0 - 14.6	16.0 - 15.6
Heatpump			
Heatpump Watts	---	---	---
Heatpump Amps	---	---	---
Reverse Cycle Amps	---	---	---
Voltage	230 - 208	230 - 208	230 - 208
Power Cord			
Rating	20 amp	20 amp	20 amp
Type	LCDI	LCDI	LCDI
Length	6 feet	6 feet	6 feet
Dehumidification: pints / hour	2.3	2.6	4.2
Fan Speeds			
CFM cooling : High-Medium-Low	280 - 230	280 - 230	450 - 390
Exhaust Air & CFM	NO	NO	9.5
Motor Capacitor	4uf	4uf	7uf
Controls			
Thermostat temp. range	61 to 86 degrees	61 to 86 degrees	61 to 86 degrees
Energy Saver (auto fan)	Yes	Yes	Yes
24 hour timer	Yes	Yes	Yes
3 minute compressor delay	Auto	Auto	Auto
Chassis Size			
Chassis Height	15 3/8"	15 3/8"	16 7/8"
Chassis Width	22 5/8"	22 5/8"	26 "
Chassis Depth	24"	24"	27 3/4"

SPECIFICATIONS

AH***E35AX

MODEL	AH093E35AX	AH123E35AX	AH183E35AX
Cooling (BTU's)	9500 9200	11600 11200	17300 17000
@ EER	10.0	9.5	9.0
Cooling Watts	950 - 920	1220 - 1180	1920 - 1890
Cooling Amps	4.6 - 4.8	5.5 - 5.9	8.5 - 9.0
Electric Heat	10700 - 8500	10700 - 8500	11000 - 9000
Rating Electric Heat Watts	3500	3500	3600
Actual Electric heat Watts	3575 - 2765	3575 - 2765	3680 - 3030
Electric Heat Amps	16.0 - 14.6	16.0 - 14.6	16.0 - 15.6
Heatpump (BTU's)	8400 8100	10300 10000	16000 15700
@ C.O.P.	2.9	2.6	2.6
Heatpump Watts	850 - 820	1160 - 1130	1800 - 1770
Heatpump Amps	4.2 - 4.5	5.1 - 5.6	8.3 - 8.8
Voltage	230 -208	230 -208	230 -208
Power Cord			
Rating	20 amp	20 amp	20 amp
Type	LCDI	LCDI	LCDI
Length	6 feet	6 feet	6 feet
Dehumidification: pints / hour	2.2	2.5	4.1
Fan Speeds			
CFM cooling : High-Medium-Low	280 - 230	280 - 230	590-510
Exhaust Air & CFM	NO	NO	9.5
Motor Capacitor	4uf	4uf	7uf
Controls			
Thermostat temp. range	61 to 86 degrees	61 to 86 degrees	61 to 86 degrees
Energy Saver (auto fan)	Yes	Yes	Yes
24 hour timer	Yes	Yes	Yes
3 minute compressor delay	Auto	Auto	Auto
Chassis Size			
Chassis Height	15 3/8"	15 3/8"	16 7/8"
Chassis Width	22 5/8"	22 5/8"	26 "
Chassis Depth	24"	24"	30 1/2"

COOLING PERFORMANCE DATA

AE***E35AX

AE "E" MODEL 230V

OUTDOOR TEMP

MODEL	ID WB ENT	ID DB ENT	TOTAL BTUH	SEN BTUH 85	SHR	TOTAL BTUH	SEN BTUH 95	SHR	TOTAL BTUH	SEN BTUH 105	SHR	TOTAL BTUH	SEN BTUH 115	SHR
AE093	61	75	8960	6770	76	8495	6540	77	8000	6295	79	7470	6055	81
		80	8910	7925	89	8460	7690	91	7975	7445	93	7570	7570	100
		85	9065	9065	100	8695	8695	100	8315	8315	100	7875	7875	100
	67	75	10135	5435	54	9680	5230	54	9045	5020	55	8455	4915	58
		80	10035	6725	67	9500	6285	66	8930	6065	68	8345	5775	69
		85	9875	7825	79	9420	7690	82	8780	7405	84	8230	6965	85
73	75	11390	4075	36	10790	3855	36	10185	3635	36	9540	3405	36	
	80	11260	5210	46	10670	4990	47	10040	4765	47	9390	4535	48	
	85	11115	6340	57	10520	6125	58	9890	5895	60	9230	5665	61	
AE123	61	75	10985	10985	100	10355	8225	79	9645	7895	82	9055	7515	83
		80	10940	9965	91	10320	9660	94	9585	9305	97	9165	8900	97
		85	11220	11220	100	10695	10695	100	10055	10055	100	9380	9380	100
	67	75	12445	6775	54	11895	6545	55	11040	6190	56	10185	5850	57
		80	12305	8150	66	11600	7855	68	10840	7545	70	9960	7220	73
		85	12105	9585	79	11505	9335	81	10640	9005	85	9745	8675	89
73	75	14050	4985	35	13285	4700	35	12510	4420	35	11625	4105	35	
	80	13880	6400	46	13105	6115	47	12315	5830	47	11335	5485	48	
	85	13695	7815	57	12940	7540	58	12055	7250	60	11070	6880	62	
AE183	61	75	16855	16855	100	15890	12625	79	14795	12120	82	9055	11530	127
		80	16790	15290	91	15835	14820	94	14705	14275	97	9165	13660	149
		85	17215	17215	100	16410	16410	100	15430	15430	100	14390	14390	100
	67	75	19095	10400	54	18250	10045	55	16935	9500	56	15630	8975	57
		80	18885	12505	66	17800	12055	68	16635	11580	70	15280	11080	73
		85	18575	14705	79	17655	14325	81	16325	13820	85	14955	13310	89
73	75	21560	7650	35	20385	7215	35	19195	6780	35	17835	6295	35	
	80	21300	9825	46	20115	9885	47	18900	8950	47	17395	8420	48	
	85	21015	11995	57	19860	11570	58	18500	11130	60	16985	10560	62	

COOLING PERFORMANCE DATA

AE***E35AX

AE "E" MODEL 208V

MODEL	ID WB ENT	ID DB ENT	TOTAL BTUH	SEN BTUH 85	SHR	TOTAL BTUH	SEN BTUH 95	SHR	TOTAL BTUH	SEN BTUH 105	SHR	TOTAL BTUH	SEN BTUH 115	SHR
AE093	61	75	8660	6470	75	8195	6240	76	7700	5995	78	7170	5755	80
		80	8610	7625	89	8160	7390	91	7675	7145	93	7270	7270	100
		85	8765	8765	100	8395	8395	100	8015	8015	100	7575	7575	100
AE093	67	75	9835	5135	52	9380	4930	53	8745	4720	54	8155	4615	57
		80	9735	6425	66	9200	5985	65	8630	5765	67	8045	5475	68
		85	9575	7525	79	9120	7390	81	8480	7105	84	7930	6665	84
AE093	73	75	11090	3775	34	10490	3555	34	9885	3335	34	9240	3105	34
		80	10960	4910	45	10370	4690	45	9740	4465	46	9090	4235	47
		85	10815	6040	56	10220	5825	57	9590	5595	58	8930	5365	60
AE123	61	75	10585	10585	100	9955	7825	79	9245	7495	81	8655	7115	82
		80	10540	9565	91	9920	9260	93	9185	8905	97	8765	8500	97
		85	10820	10820	100	10295	10295	100	9655	9655	100	8980	8980	100
AE123	67	75	12045	6375	53	11495	6145	53	10640	5790	54	9785	5450	56
		80	11905	7750	65	11200	7455	67	10440	7145	68	9560	6820	71
		85	11705	9185	78	11105	8935	80	10240	8605	84	9345	8275	89
AE123	73	75	13650	4585	34	12885	4300	33	12110	4020	33	11225	3705	33
		80	13480	6000	45	12705	5715	45	11915	5430	46	10935	5085	47
		85	13295	7415	56	12540	7140	57	11655	6850	59	10670	6480	61
AE183	61	75	16455	16455	100	15490	12225	79	14395	11720	81	8655	11130	129
		80	16390	14890	91	15435	14420	93	14305	13875	97	8765	13260	151
		85	16815	16815	100	16010	16010	100	15030	15030	100	13990	13990	100
AE183	67	75	18695	10000	53	17850	9645	54	16535	9100	55	15230	8575	56
		80	18485	12105	65	17400	11655	67	16235	11180	69	14880	10680	72
		85	18175	14305	79	17255	13925	81	15925	13420	84	14555	12910	89
AE183	73	75	21160	7250	34	19985	6815	34	18795	6380	34	17435	5895	34
		80	20900	9425	45	19715	8985	46	18500	8550	46	16995	8020	47
		85	20615	11595	56	19460	11170	57	18100	10725	59	16585	10160	61

COOLING PERFORMANCE DATA

AH***E35AX

AH "E" MODEL 230V

OUTDOOR TEMP

MODEL	ID WB ENT	ID DB ENT	TOTAL BTUH	SEN BTUH 85	SHR	TOTAL BTUH	SEN BTUH 95	SHR	TOTAL BTUH	SEN BTUH 105	SHR	TOTAL BTUH	SEN BTUH 115	SHR
AH093	61	75	8960	6670	74	8485	6435	76	7970	6185	78	7445	5930	80
		80	8890	7785	88	8425	7540	89	7935	7290	92	7400	7380	100
		85	8955	8955	100	8570	8570	100	8155	8155	100	7710	7710	100
	67	75	10155	5390	53	9670	5250	54	9040	4960	55	8430	4855	58
		80	10030	6430	64	9500	6185	65	8920	6005	67	8315	5670	68
		85	9865	7690	78	9405	7545	80	8755	7250	83	8150	6965	85
	73	75	11410	4090	36	10820	3870	36	10190	3635	36	9535	3400	36
		80	11275	5175	46	10680	4955	46	10045	4720	47	9385	4485	48
		85	11130	6260	56	10530	6040	57	9885	5805	59	9220	5570	60
AH123	61	75	10985	8520	78	10355	8225	79	9645	7895	82	8795	7515	85
		80	10940	9965	91	10320	9660	94	9585	9305	97	8900	8900	100
		85	11220	11220	100	10695	10695	100	10055	10055	100	9380	9380	100
	67	75	12445	6775	54	11895	6545	55	11040	6190	56	10185	5850	57
		80	12305	8150	66	11600	7855	68	10840	7545	70	9960	7220	73
		85	12105	9585	79	11505	9335	81	10640	9005	85	9745	8675	89
	73	75	14050	4985	35	13285	4700	35	12510	4420	35	11625	4105	35
		80	13880	6400	46	13105	6115	47	12315	5830	47	11335	5485	48
		85	13695	7815	57	12940	7540	58	12055	7250	60	11070	6880	62
AH183	61	75	16380	12710	78	15445	12270	79	14380	11775	82	13120	11205	85
		80	16320	14865	91	15390	14405	94	14295	13875	97	13275	13275	100
		85	16730	16730	100	15950	15950	100	14995	14995	100	13990	13990	100
	67	75	18560	10105	54	17740	9760	55	16460	9235	56	15195	8725	57
		80	18355	12155	66	17300	11715	68	16165	11255	70	14850	10770	73
		85	18055	14295	79	17160	13925	81	15865	13435	85	14535	12935	89
	73	75	20955	7435	35	19810	7010	35	18655	6590	35	17335	6120	35
		80	20700	9545	46	19550	9125	47	18370	8695	47	16910	8180	48
		85	20425	11655	57	19300	11245	58	17980	10815	60	16510	10260	62

COOLING PERFORMANCE DATA

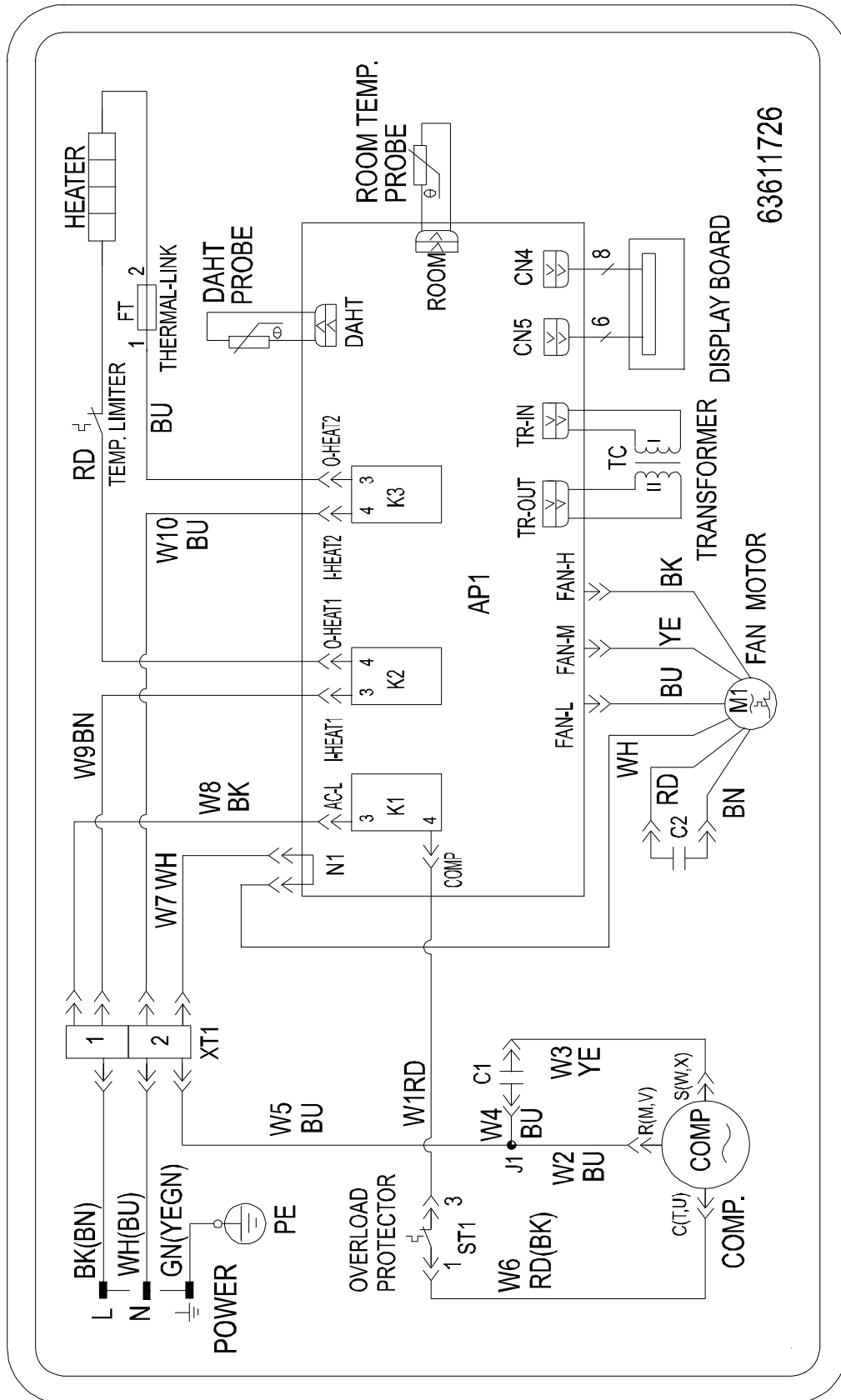
AH***E35AX

AH "E" MODEL 208V

MODEL	ID WB ENT	ID DB ENT	TOTAL BTUH	SEN BTUH 85	SHR	TOTAL BTUH	SEN BTUH 95	SHR	TOTAL BTUH	SEN BTUH 105	SHR	TOTAL BTUH	SEN BTUH 115	SHR
AH093	61	75	8660	6370	74	8185	6135	75	7670	5885	77	7145	5630	79
		80	8590	7485	87	8125	7240	89	7635	6990	92	7105	7080	100
		85	8655	8655	100	8270	8270	100	7855	7855	100	7140	7410	100
	67	75	9855	5090	52	9370	4950	53	8740	4660	53	8130	4555	56
		80	9730	6130	63	9200	5885	64	8620	5705	66	8015	5370	67
		85	9565	7390	77	9105	7245	80	8455	6950	82	7850	6665	85
	73	75	11110	3790	34	10520	3570	34	9890	3335	34	9235	3100	34
		80	10975	4875	44	10380	4655	45	9745	4420	45	9085	4185	46
		85	10830	5960	55	10230	5740	56	9585	5505	57	8920	5270	59
AH123	61	75	10585	8120	77	9955	7825	79	9245	7495	81	8395	7115	85
		80	10540	9565	91	9920	9260	93	9185	8905	97	8500	8500	100
		85	10820	10820	100	10295	10295	100	9655	9655	100	8980	8980	100
	67	75	12045	6375	53	11495	6145	53	10640	5790	54	9785	5450	56
		80	11905	7750	65	11200	7455	67	10440	7145	68	9560	6820	71
		85	11705	9185	78	11105	8935	80	10240	8605	84	9345	8275	89
	73	75	13650	4585	34	12885	4300	33	12110	4020	33	11225	3705	33
		80	13480	6000	45	12705	5715	45	11915	5430	46	10935	5085	47
		85	13295	7415	56	12540	7140	57	11655	6850	59	10670	6480	61
AH183	61	75	16080	12410	77	15145	11970	79	14080	11475	82	12820	10905	85
		80	16020	14565	91	15090	14105	93	13995	13575	97	12975	12975	100
		85	16430	16430	100	15650	15650	100	14695	14695	100	13690	13690	100
	67	75	18260	9805	54	17440	9460	54	16160	8935	55	14895	8425	57
		80	18055	11855	66	17000	11415	67	15865	10955	69	14550	10470	72
		85	17755	13995	79	16860	13625	81	15565	13135	84	14235	12635	89
	73	75	20655	7135	35	19510	6710	34	18355	6290	34	17035	5820	34
		80	20400	9245	45	19250	8825	46	18070	8395	46	16610	7880	47
		85	20125	11355	56	19000	10945	58	17680	10515	59	16210	9960	61

WARNING

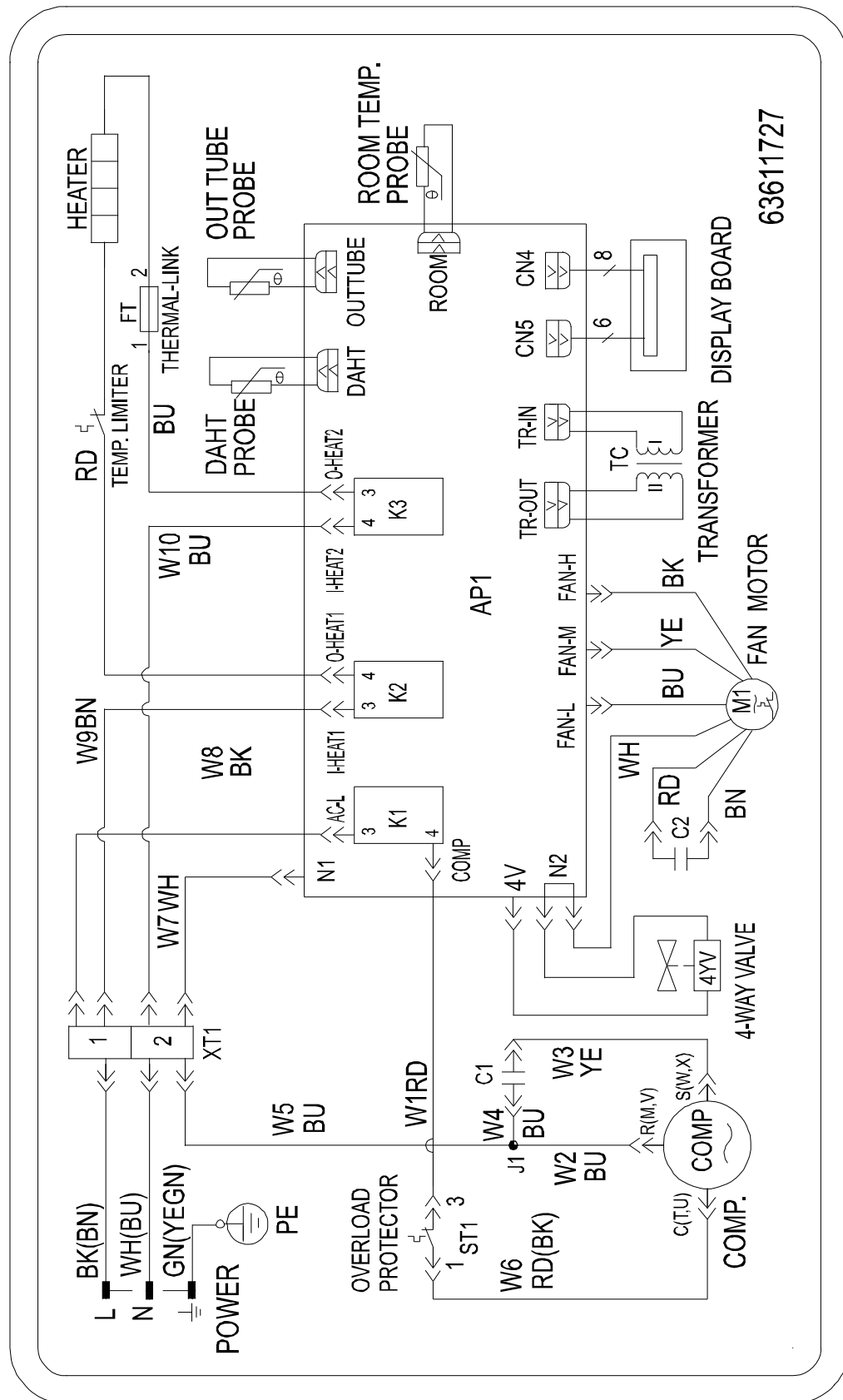
HIGH VOLTAGE!
 DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

WARNING

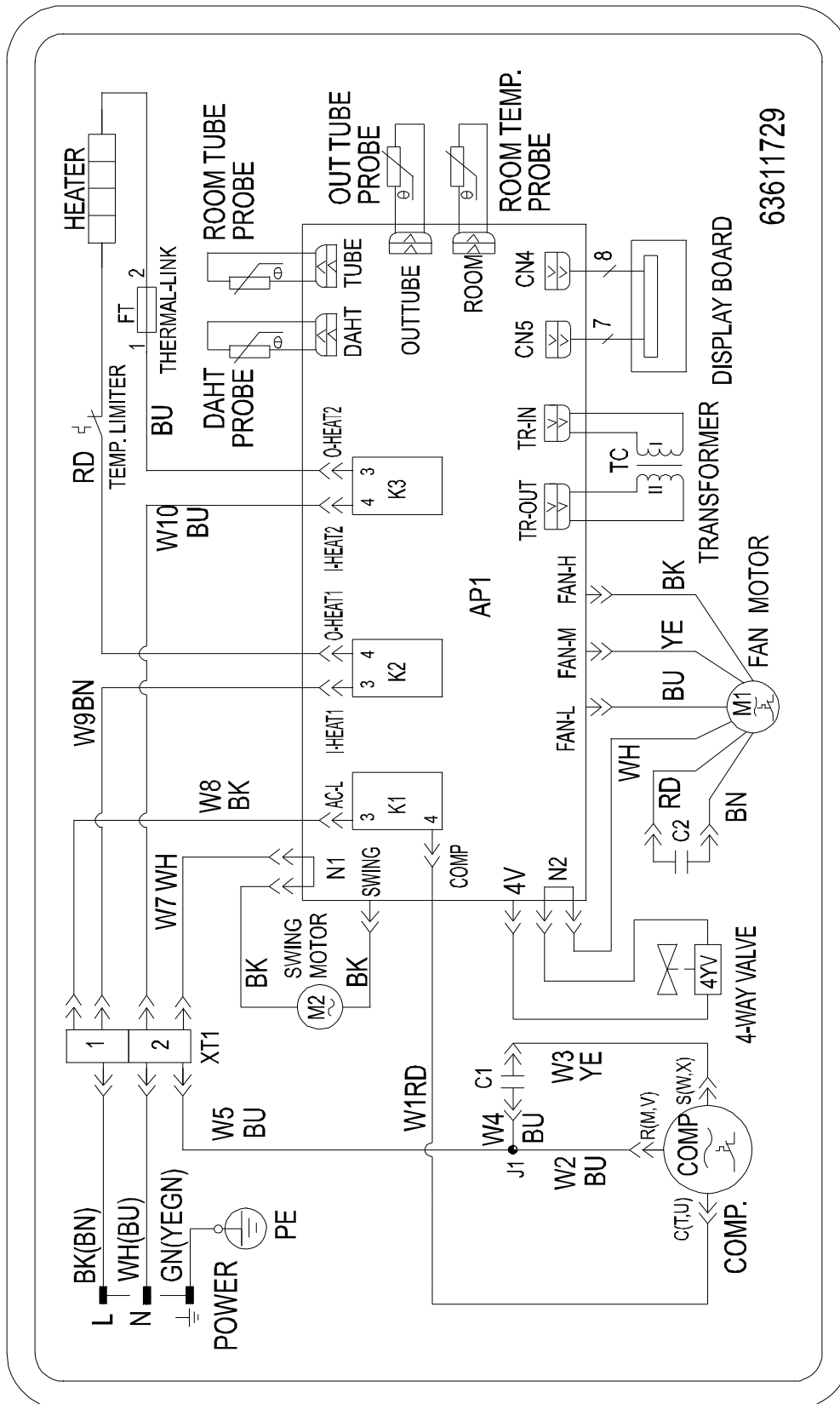
HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

WARNING

HIGH VOLTAGE!
 DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change, always refer to the wiring diagram on the unit for the most up-to-date wiring.

TROUBLESHOOTING

CODE		STATUS	CORRECTIVE ACTION
1	F1	Outdoor ambient thermostat not registering on the board.	Replace or re-connect the thermostat
2	F2	Outdoor ambient thermostat not registering on the board.	Replace or re-connect the thermostat
3	F4	Outdoor coil thermostat not registering on the board	Replace or re-connect the thermostat
4	FJ	Indoor discharge thermostat not registering on the board	Replace or re-connect the thermostat