



MODINE

6-419.1

August, 1974

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

DIAGRAM INTERCHANGEABILITY

The following Model PA and BA gas-fired unit heater wiring diagrams are for either 115-volt, 60 Hertz, single-phase power, or for 460-volt, 60 Hertz, three-phase electrical service.

The 115V/60Hz/1 ϕ diagrams may also be utilized for 230V/60Hz/1 ϕ by substituting 230-volt components for the 115-volt shown.

The 460V/60Hz/3 ϕ diagrams may be converted to 208V/60V/3 ϕ by substituting a 208V/115V transformer for the 460V/115V model shown.

The 460V/60Hz/3 ϕ diagrams may be modified to 230/60V/3 ϕ by reconnecting the primary of the 460V/115V transformer as shown or by substituting 230-volt components for the 115-volt shown and supplying 230V/60Hz/1 ϕ power to the control system and accessories.

NOTE: As indicated in every diagram, all wiring must comply with the National Electrical Code and all local codes. All components must agree their respective power source.

POWER REQUIREMENTS—PROPELLER AND BLOWER MOTORS

Motor Ratings	Full Load Amperes				
	115V/60/1	230V/60/1	208/60/3	230/60/3	460/60/3
6W	0.6	0.3	—	—	—
16W	1.1	0.6	—	—	—
1/15HP	2.7	—	—	—	—
1/6HP	2.8	1.1	—	—	—
1/4HP	4.4	2.2	1.6	1.4	0.7
1/3HP	5.6	2.8	2.5	2.2	1.1
1/2HP	7.8	4.4	2.6	2.6	1.3
3/4HP	10.2	6.0	3.4	3.1	1.6
1HP	13.2	6.6	3.9	3.4	1.7
1 1/2HP	15.6	7.8	5.6	4.8	2.4
2HP	—	—	6.8	6.2	3.1
3HP	—	—	10.8	9.4	4.7

TWO-IN-ONE DIAGRAMS

Two wiring diagrams are furnished for each circuit configuration in this manual. Included are a connection diagram at the left for field installation and a circuit schematic at the right to aid in continuity and trouble shooting.

The heavier lines in the connection diagram indicate line voltage; the lighter lines are for low voltage. Solid lines show pre-wiring performed at the factory; dotted lines inform the installer of connections required to put the heater in operation.

DIAGRAM SELECTION

Diagrams are provided for both single- and three-phase circuits, and are readily identified in the Selection Chart on the following pages. The Selection Chart enables easy selection of the correct wiring diagram after the electrical components of the heater unit have been determined. The control codes are also listed to aid in locating the correct diagram when the control code is specified with or without various accessories.

To aid in determination, inspect the unit heater electrical components illustrated on page iv and relate them to the selection chart.

ABBREVIATIONS AND SYMBOLS

To facilitate interpretation and enable simplification the abbreviations and symbols have been selected as recommended by ANSI (American National Standards Institute) and NEMA (National Electrical Manufacturers Association) standards. These include:

XFMR or TR	Transformer
V	Volts
Hz	Cycle or Hertz
ϕ	Phase
LC	Limit Control
THERM or TH	Thermostat
MV	Main Valve
PV	Pilot Valve
SO	Shut Off
EPI	Electric Pilot Ignition Controller
G	Ground
HTR	Heater
H	Hot
SW	Switch
IGN	Ignitor Coil
EPS	Electric Pilot Switch
HI	High
Lo	Low
C	Common
"J" Box	Junction Box
W.S.	Warp Switch

H ₁ , H ₂ , etc.	Transformer Primary Terminals
SUM	Summer Contact (Summer-Winter Switch)
WIN	Winter Contact (Summer-Winter Switch)
S-W	Summer-Winter Switch
TRC	Transformer Relay Contact
O.L.C.	Overload Contact
C.S.	Power Venter Centrifugal Switch
FT _c	Fan Timer Contact
SPDT	Single-Pole Double-Throw Switch
VA	Volt Ampere
W	Watts

WIRE COLOR CODING

BK	Black
BU	Blue
R	Red
W	White
Y	Yellow
X1, X2, etc.	Transformer Secondary Terminals
L1, L2, etc.	Electric Load Terminals
T1, T2, etc.	Starter or Motor Terminals

WIRING DIAGRAMS, MODELS PA, BA, GAS-FIRED UNIT HEATERS

SELECTION CHART

Power Supply		Line Voltage Stat	Low Voltage Stat	Summer Winter Switch	Line Volt Power Venter	Fan Time Delay	Low Volt Power Venter	Non-100% Shut-off E.P.I.	100% Shut-off E.P.I.	2-Stage Gas Valve Low Volt	Mechanical Modulation	Mechanical Modulation w/Solenoid Bypass	Control Code	Page No.	Drawing No. 8H5985
1-Phase	3-Phase														
X		(X)											01, 02, 71, 72	1	A156
	X	(X)											01, 02, 71, 72	2	A160
X		(X)		X									01, 02, 71, 72	3	A167
	X	(X)		X									01, 02, 71, 72	4	A172
X		X			X								01, 02, 71, 72	5	A165
	X	X			X								01, 02, 71, 72	6	A170
X		(X)		X	X								01, 02, 71, 72	7	A168
	X	(X)		X	(X)								01, 02, 71, 72	8	A173
X			X										06, 07	9	A149
	X		X										06, 07	10	A169
X			(X)		X								06, 07	11	A166
	X		(X)		X								06, 07	12	A171
X		✓	(X)			(X)							11, 12, 81, 82	13	A150 ✓
	X		(X)			(X)							11, 12, 81, 82	14	A164
X		✓	(X)	X		(X)							11, 12, 81, 82	15	A201
	X		(X)	X		(X)							11, 12, 81, 82	16	A212
X		✓	(X)			(X)	(X)						11, 12, 81, 82	17	A198
	X		(X)			(X)	(X)						11, 12, 81, 82	18	A207
X		✓	(X)	X		(X)	(X)						11, 12, 81, 82	19	A202
	X		(X)	X		(X)	(X)						11, 12, 81, 82	20	A213
X			(X)			(X)		(X)				✓	16, 17	21	A144
	X		(X)			(X)		(X)					16, 17	22	A208
X			(X)	X		(X)		(X)				✓	16, 17	23	A203
	X		(X)	X		(X)		(X)					16, 17	24	A214
X			(X)			(X)	X	X				✓	16, 17	25	A199
	X		(X)			(X)	X	X	X				16, 17	26	A209
X			(X)	X		(X)	X	X				✓	16, 17	27	A204
	X		(X)	X		(X)	X	X					16, 17	28	A215
X			(X)			(X)			X				18, 19, 86, 87	29	A143
	X		(X)			(X)			X				18, 19, 86, 87	30	A210
X			(X)	X		(X)			X				18, 19, 86, 87	31	A205
	X		(X)	X		(X)			X				18, 19, 86, 87	32	A216
X			(X)			(X)	(X)		(X)				18, 19, 86, 87	33	A200
	X		(X)			(X)	(X)		(X)				18, 19, 86, 87	34	A211
X			(X)	X		(X)	(X)		(X)				18, 19, 86, 87	35	A206
	X		(X)	X		(X)	(X)		(X)				18, 19, 86, 87	36	A217
X			*(X)			(X)				(X)			25, 26, 83, 84	37	A157
	X		*(X)			(X)				(X)			25, 26, 83, 84	38	A227
X			*(X)	(X)		(X)				(X)			25, 26, 83, 84	39	A218
	X		*(X)	(X)		(X)				(X)			25, 26, 83, 84	40	A229
X			*(X)			(X)	(X)			(X)			25, 26, 83, 84	41	A219
	X		*(X)			(X)	(X)			(X)			25, 26, 83, 84	42	A228
X			*(X)	(X)		(X)	(X)			(X)			25, 26, 83, 84	43	A220
	X		*(X)	(X)		(X)	(X)			(X)			25, 26, 83, 84	44	A230
X			*(X)			(X)		(X)		(X)			35, 36	45	A158
	X		*(X)			(X)		(X)		(X)			35, 36	46	A231

*Two stage low voltage stat.

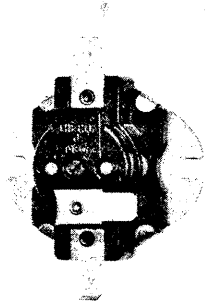
WIRING DIAGRAMS, MODELS PA, BA, GAS-FIRED UNIT HEATERS

SELECTION CHART

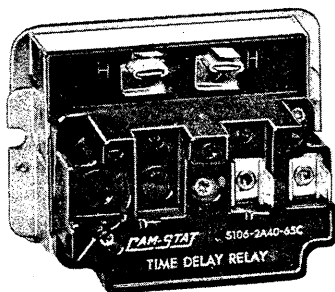
Power Supply		Low Volt Duct Stat	Low Voltage Stat	Summer Winter Switch	Line Volt Power Venter	Fan Time Delay	Low Volt Power Venter	Non-100% Shut-off E.P.I.	100% Shut-off E.P.I.	2-Stage Gas Valve Low Volt	Mechanical Modulation	Mechanical Modulation w/Solenoid Bypass	Control Code	Page No.	Drawing No. 8H5985
1-Phase	3-Phase														
X			*(X)	(X)		(X)		(X)		(X)			35, 36	47	A221
	X		*(X)	(X)		(X)		(X)		(X)			35, 36	48	A233
X			*(X)			(X)	(X)	(X)		(X)			35, 36	49	A222
	X		*(X)			(X)	(X)	(X)		(X)			35, 36	50	A232
X			*(X)	(X)		(X)	(X)	(X)		(X)			35, 36	51	A223
	X		*(X)	(X)		(X)	(X)	(X)		(X)			35, 36	52	A234
X			*(X)			(X)			(X)	(X)			45, 46, 88, 89	53	A159
	X		*(X)			(X)			(X)	(X)			45, 46, 88, 89	54	A235
X			*(X)	(X)		(X)			(X)	(X)			45, 46, 88, 89	55	A224
	X		*(X)	(X)		(X)			(X)	(X)			45, 46, 88, 89	56	A237
X			*(X)			(X)	(X)		(X)	(X)			45, 46, 88, 89	57	A225
	X		*(X)			(X)	(X)		(X)	(X)			45, 46, 88, 89	58	A236
X			*(X)	(X)		(X)	(X)		(X)	(X)			45, 46, 88, 89	59	A226
	X		*(X)	(X)		(X)	(X)		(X)	(X)			45, 46, 88, 89	60	A238
X											(X)		21, 22▲	61	A136
	X										(X)		21, 22▲	62	A176
X		(X)									(X)		21, 22▲	63	A137
	X	(X)									(X)		21, 22▲	64	A177
X					(X)						(X)		21, 22▲	65	A174
	X				(X)						(X)		21, 22▲	66	A178
X		(X)			(X)						(X)		21, 22▲	67	A175
	X	(X)			(X)						(X)		21, 22▲	68	A179
X			(X)									(X)	23, 24▲	69	A138
	X		(X)									(X)	23, 24▲	70	A190
X		(X)	(X)									(X)	23, 24▲	71	A139
	X	(X)	(X)									(X)	23, 24▲	72	A191
X			(X)		(X)							(X)	23, 24▲	73	A186
	X		(X)		(X)							(X)	23, 24▲	74	A192
X		(X)	(X)		(X)							(X)	23, 24▲	75	A187
	X	(X)	(X)		(X)							(X)	23, 24▲	76	A193
X								(X)			(X)		31, 32▲	77	A151
	X							(X)			(X)		31, 32▲	78	A180
X		(X)						(X)			(X)		31, 32▲	79	A152
	X	(X)						(X)			(X)		31, 32▲	80	A181
X					(X)			(X)			(X)		31, 32▲	81	A182
	X				(X)			(X)			(X)		31, 32▲	82	A184
X		(X)			(X)			(X)			(X)		31, 32▲	83	A183
	X	(X)			(X)			(X)			(X)		31, 32▲	84	A185
X			(X)					(X)				(X)	33, 34▲	85	A153
	X		(X)					(X)				(X)	33, 34▲	86	A194
X		(X)	(X)					(X)				(X)	33, 34▲	87	A154
	X	(X)	(X)					(X)				(X)	33, 34▲	88	A195
X			(X)		(X)			(X)				(X)	33, 34▲	89	A188
	X		(X)		(X)			(X)				(X)	33, 34▲	90	A196
X		(X)	(X)		(X)			(X)				(X)	33, 34▲	91	A189
	X	(X)	(X)		(X)			(X)				(X)	33, 34▲	92	A197

* 2 stage low voltage stat.
▲ BA Models Only.

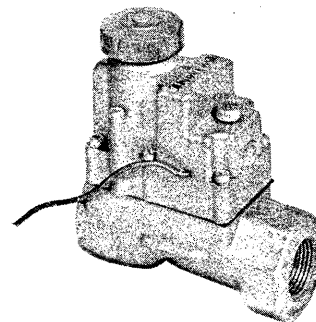
GAS CONTROL COMPONENTS



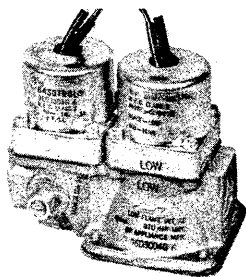
Limit control



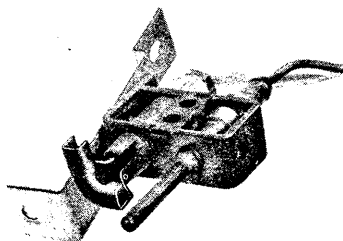
Fan time-delay relay



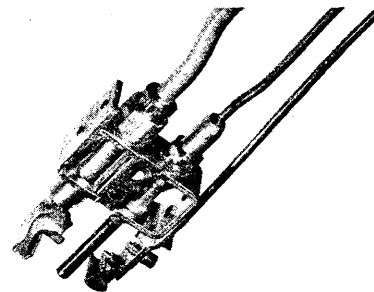
Modulating gas valve



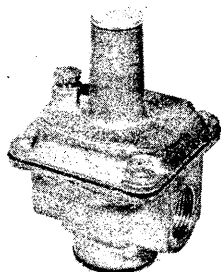
2-stage gas valve



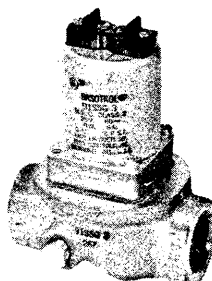
Standard capacity pilot with thermocouple



Safety pilot with thermocouple and ignition coil



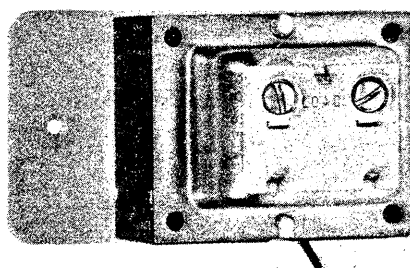
Pressure regulator



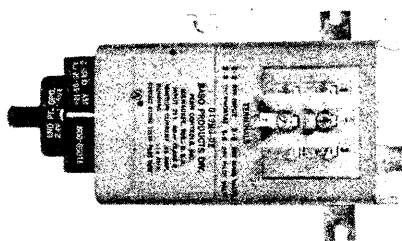
By pass solenoid gas valve



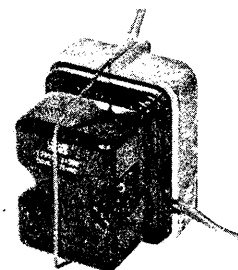
Pilot solenoid gas valve



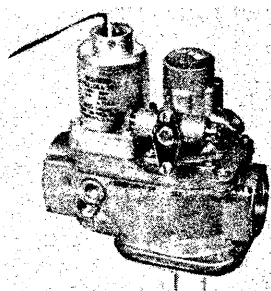
Low voltage transformer



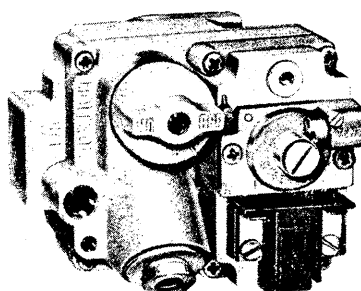
Electric pilot ignition control



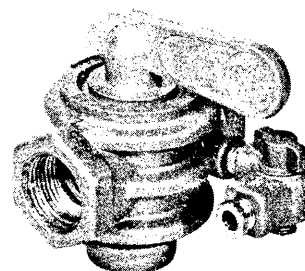
Low voltage relay (RBM)



Solenoid gas valve and regulator

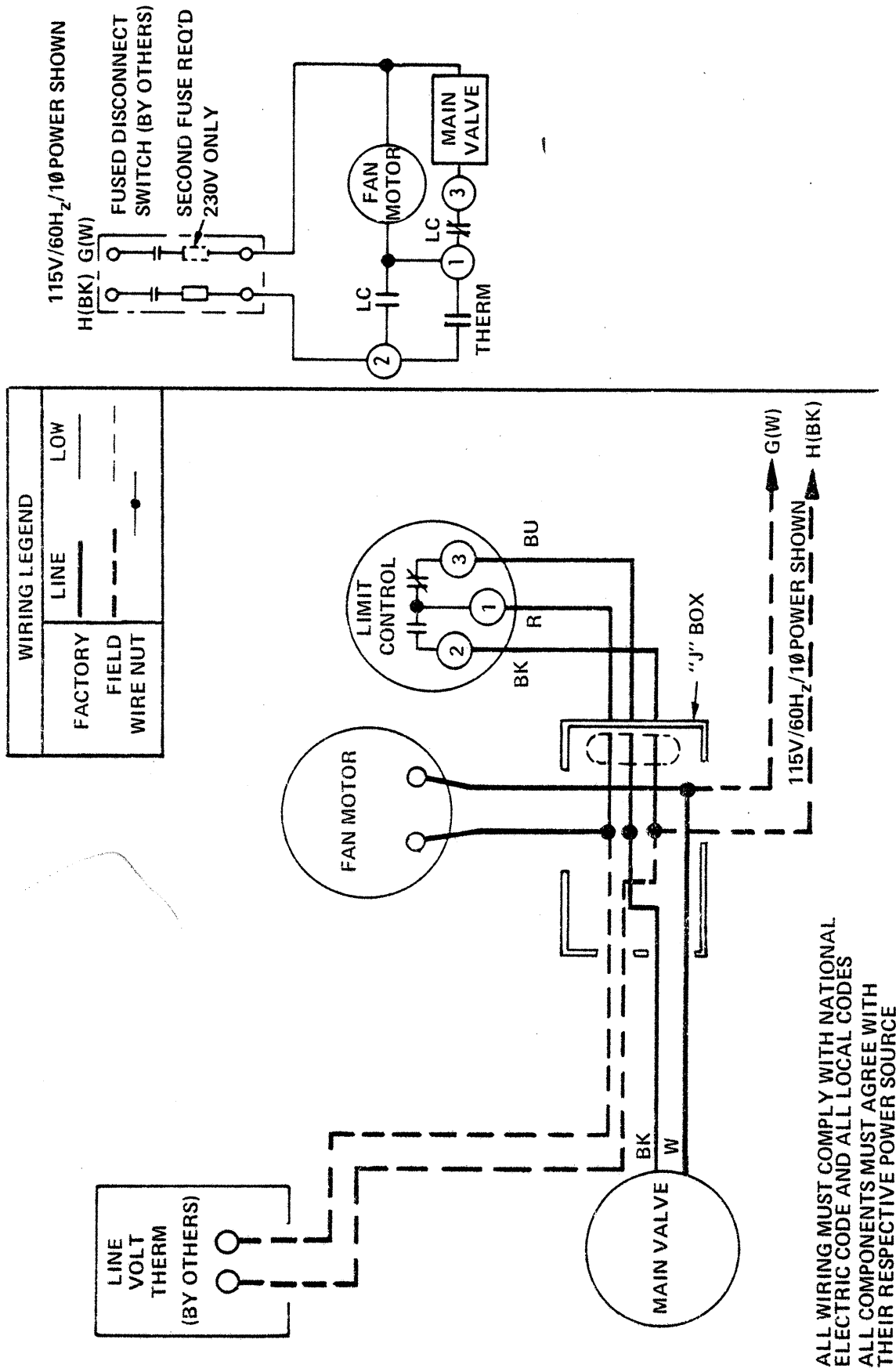


Combination gas valve (includes regulator, solenoid and manual gas valves)

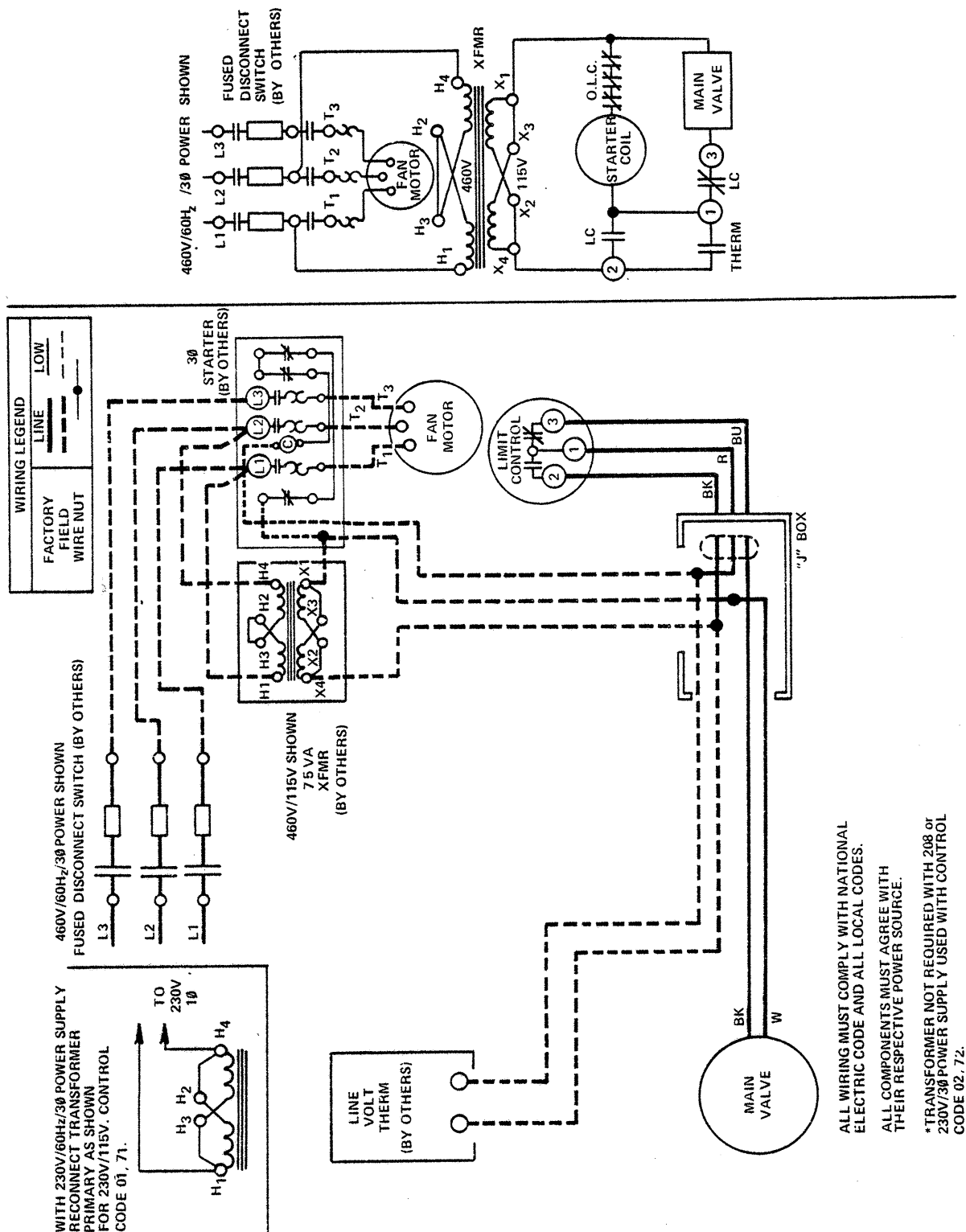


Manual (A) and pilot (B) gas valves

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

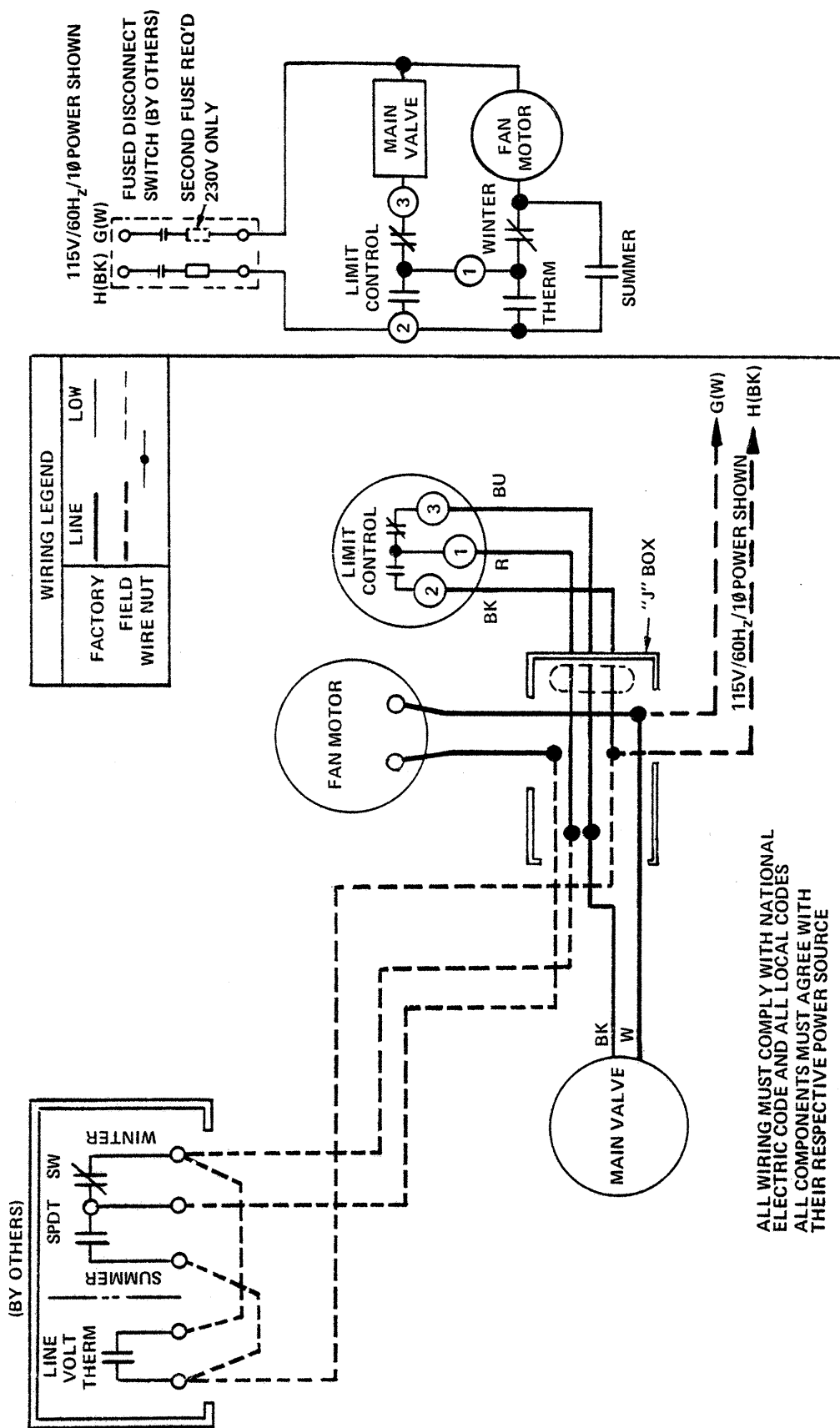


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



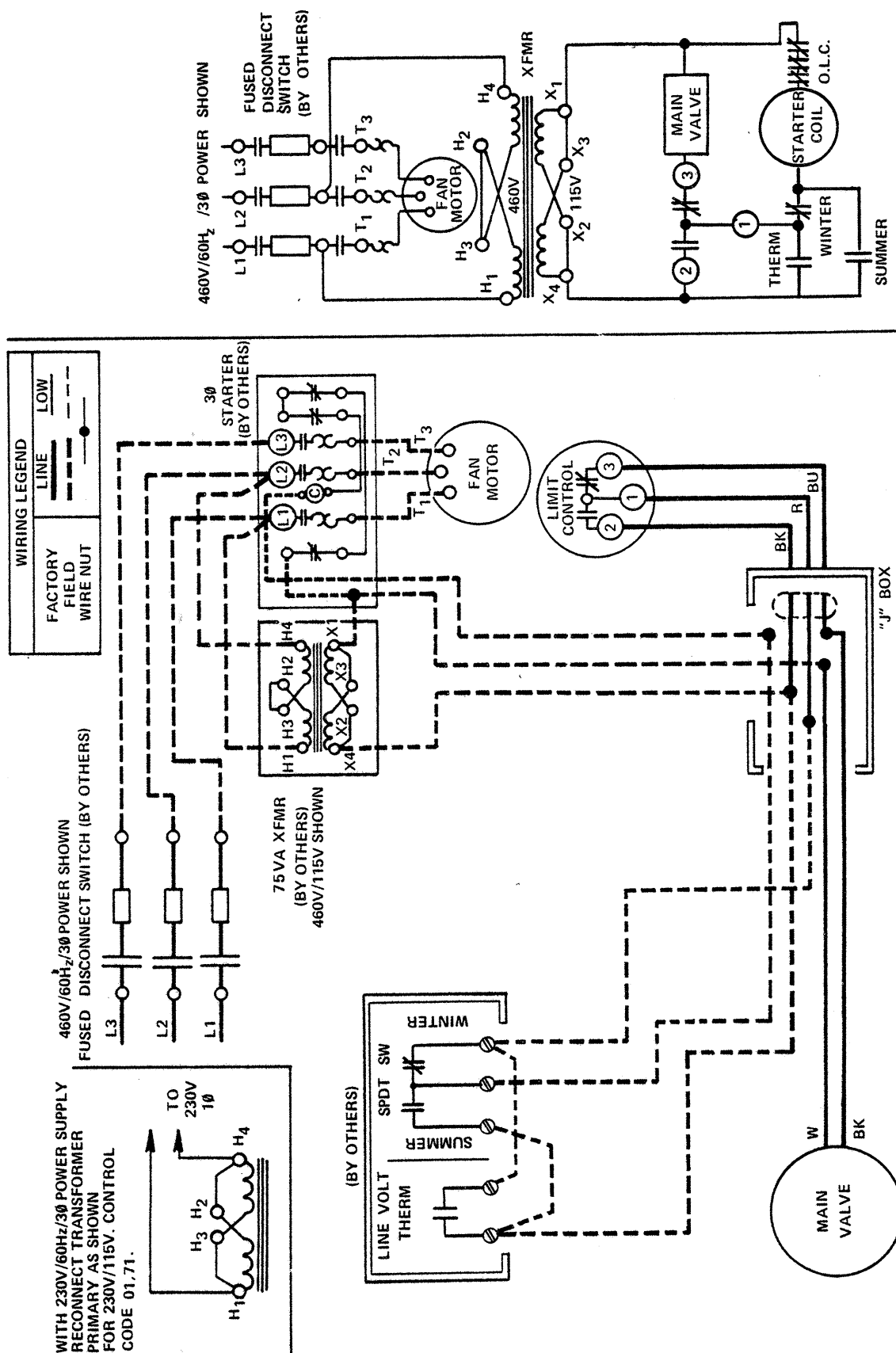
8H5985A160—Standard control with line voltage thermostat, three phase. Control codes 01, 02, 71, 72.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A167—Standard control with line voltage thermostat, S-W switch, single phase. Control codes 01, 02, 71, 72.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



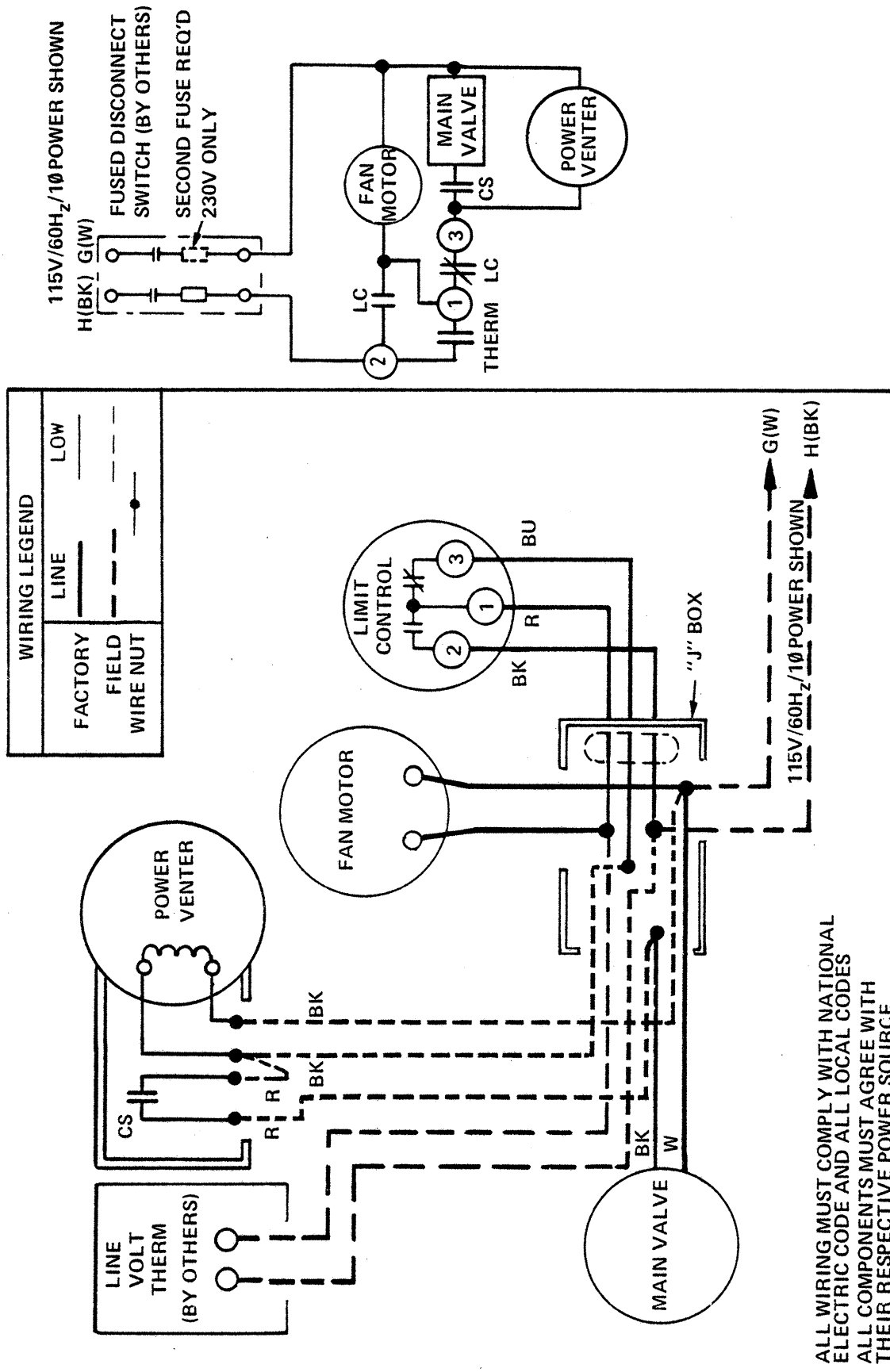
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.

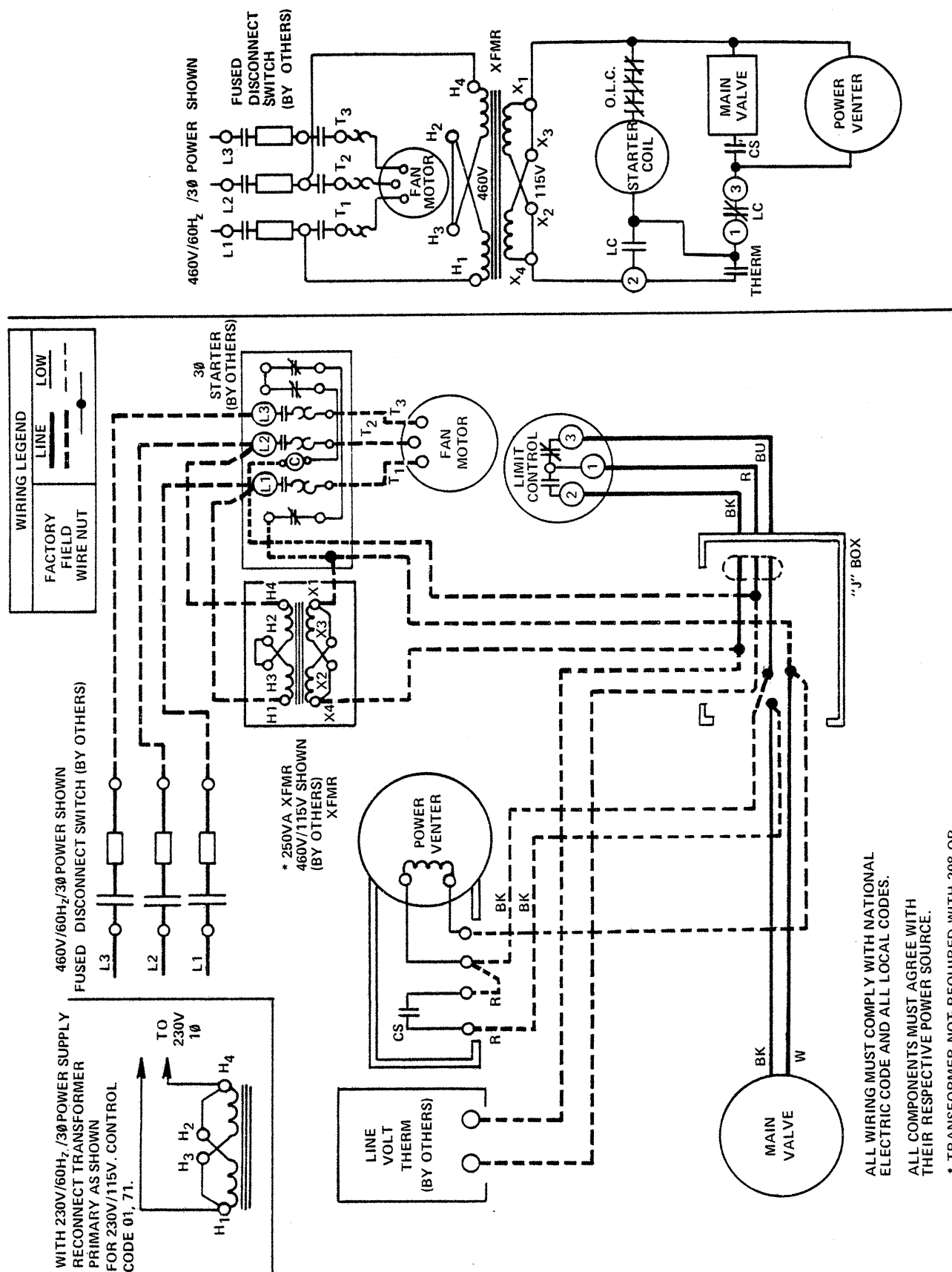
* TRANSFORMER NOT REQUIRED WITH 208 OR
230V/3Ø POWER SUPPLY USED WITH CONTROL
CODES 02, 72.

8H5985A172—Standard control with line voltage thermostat, S-W switch, three phase. Control codes 01, 02, 71, 72.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

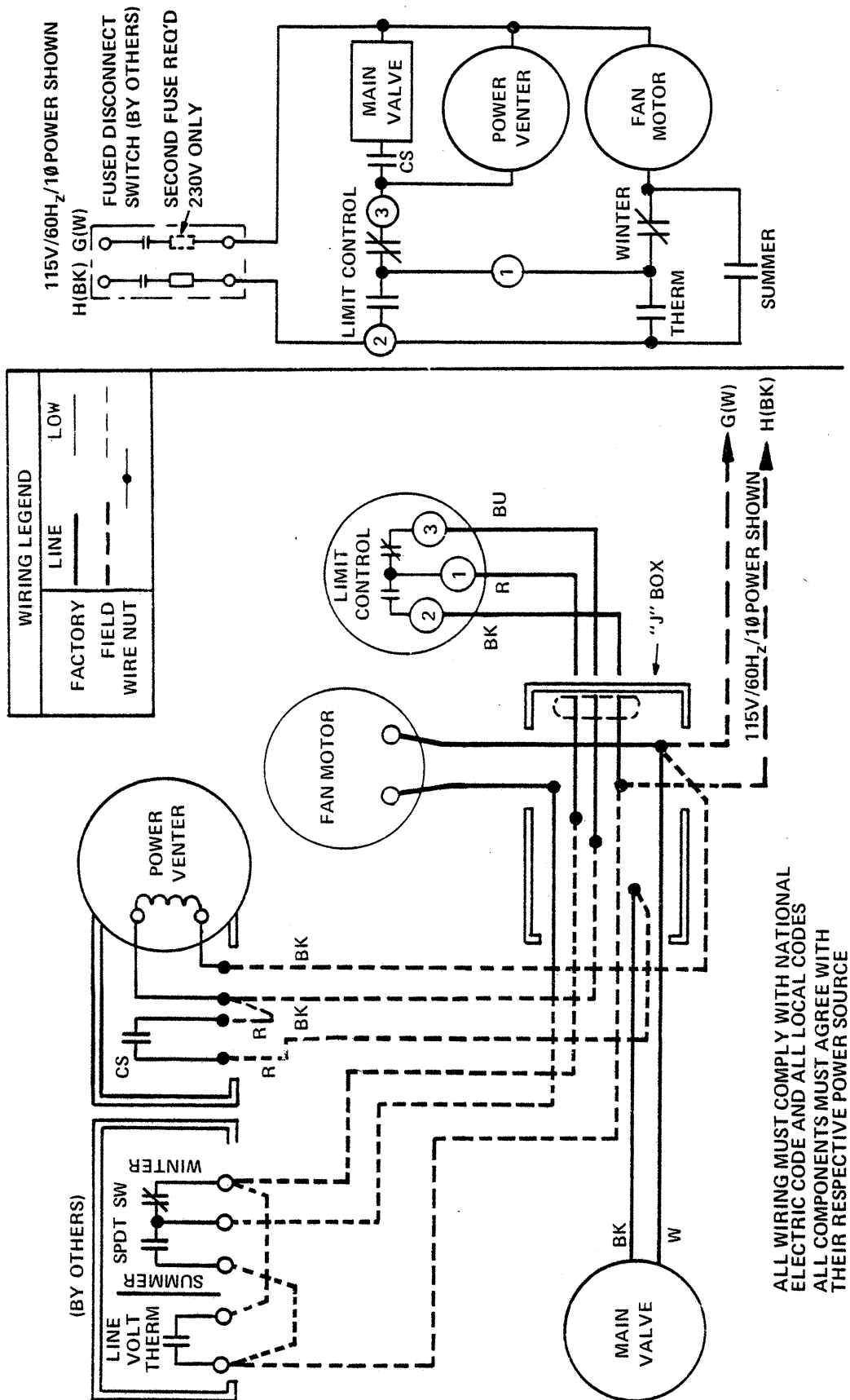


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

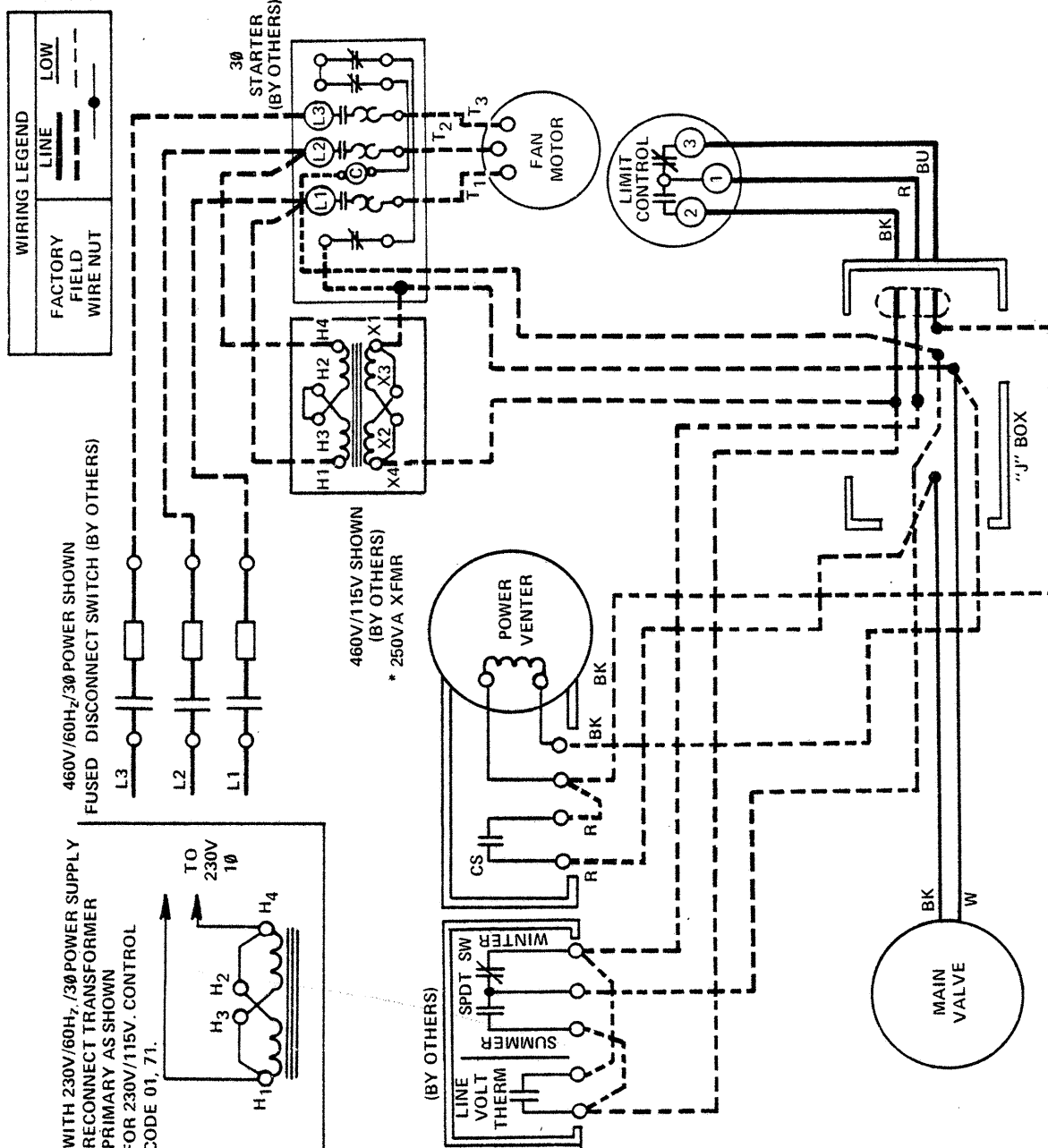
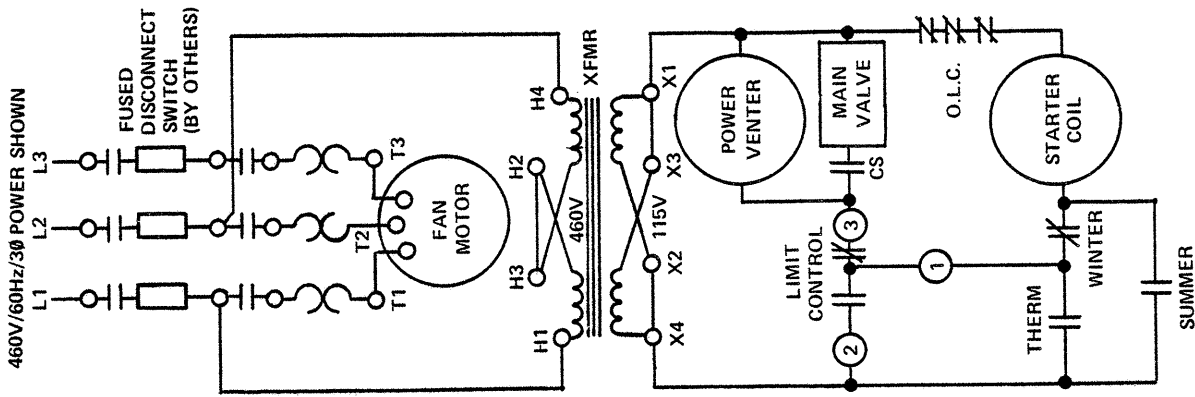


8H5985A170—Power venter, line voltage thermostat, three phase. Control codes 01, 02, 71, 72.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



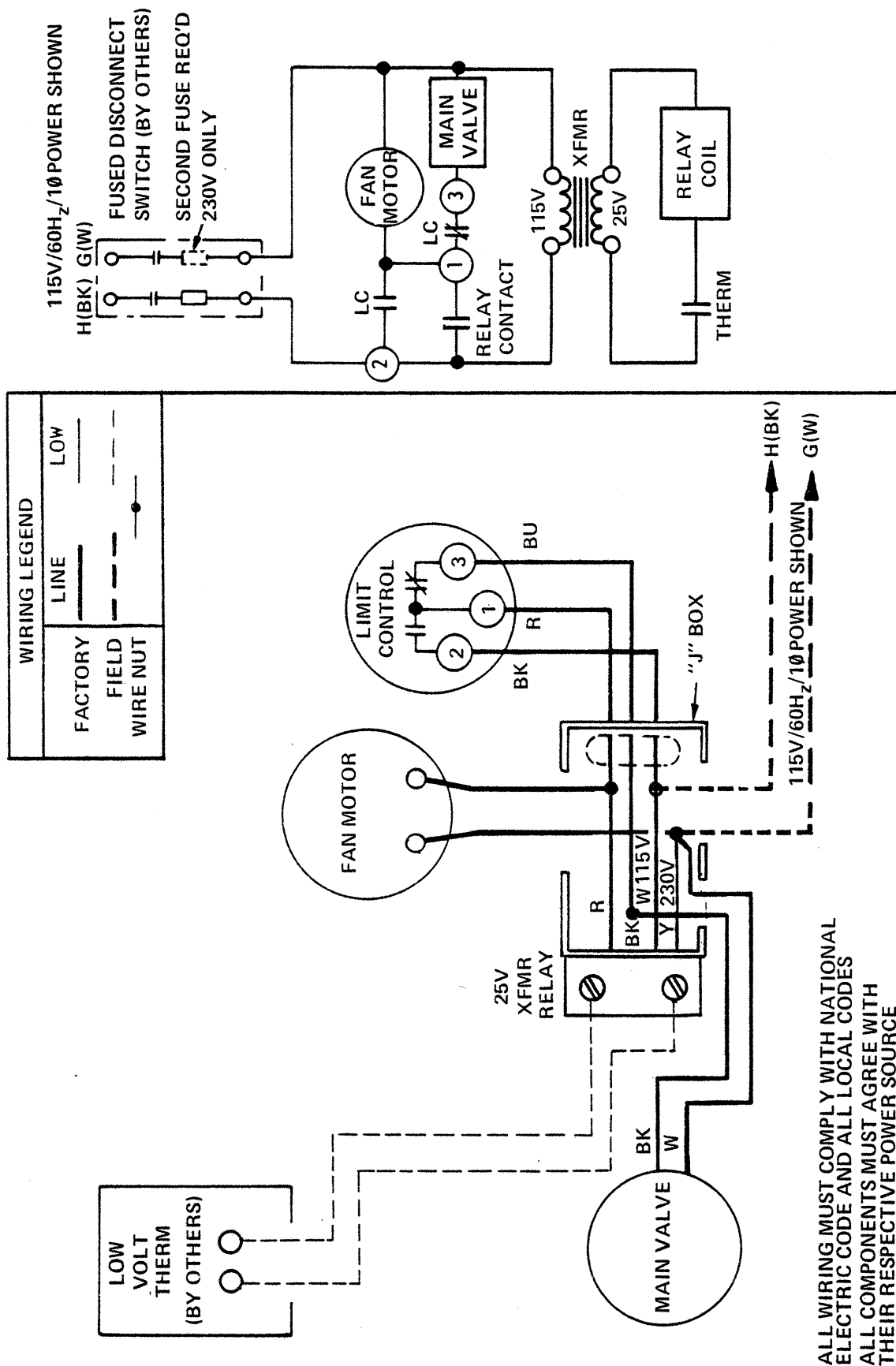
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

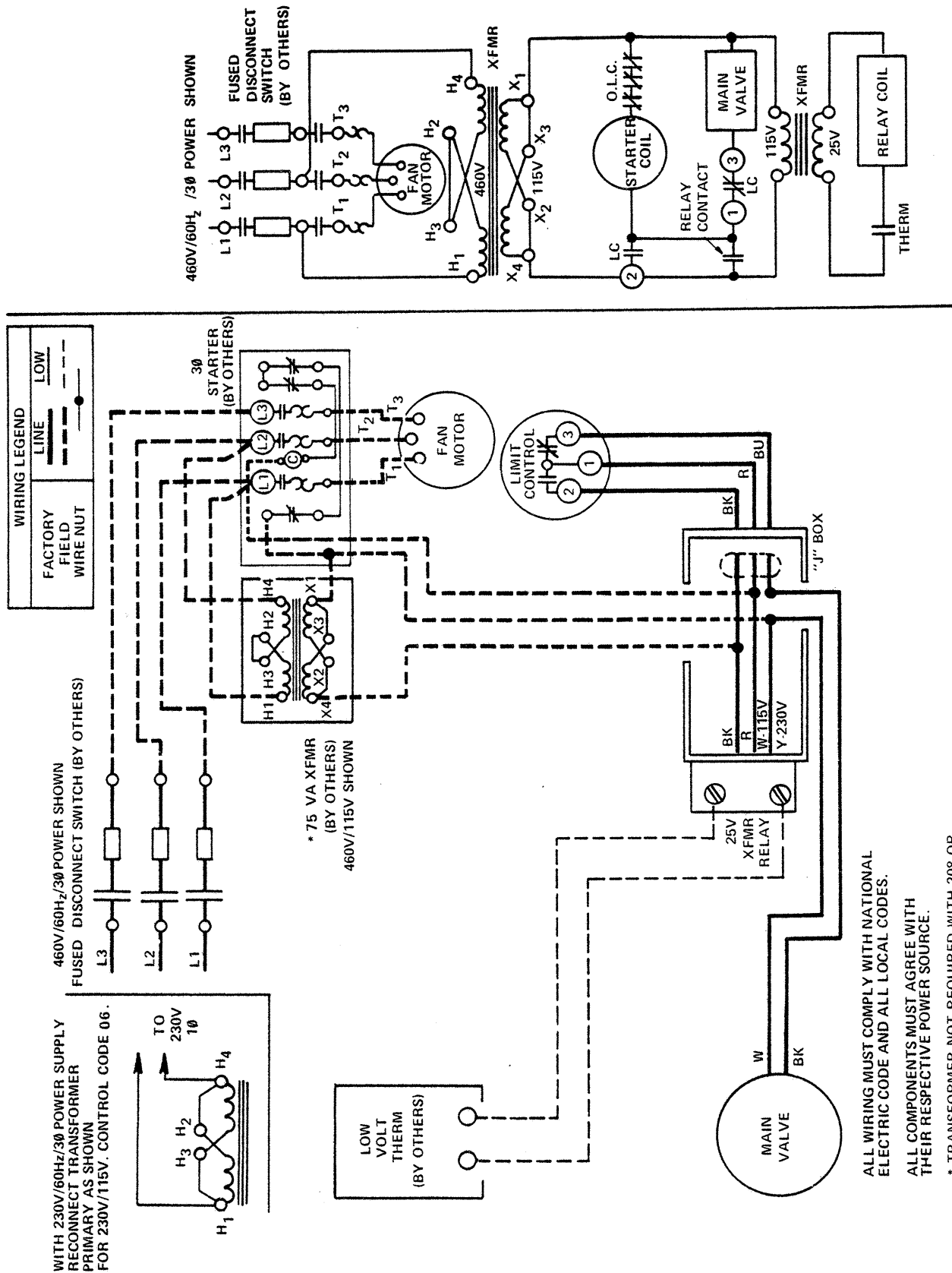
* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODES 02, 72 AND 230V POWER VENTER.

8H5985A173—Power venter, line voltage thermostat, S-W switch, three phase. Control Codes 01, 02, 71, 72.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

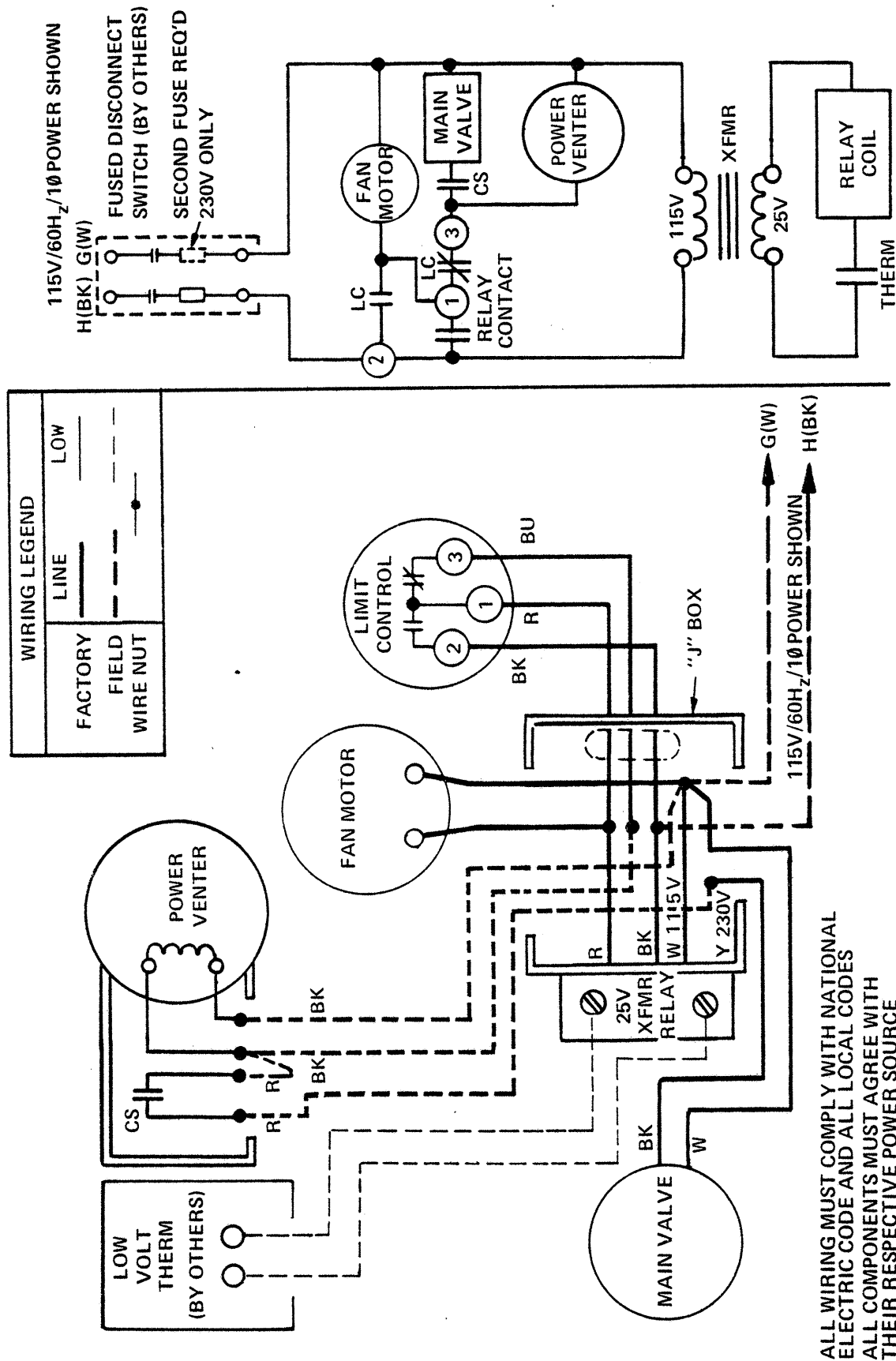


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



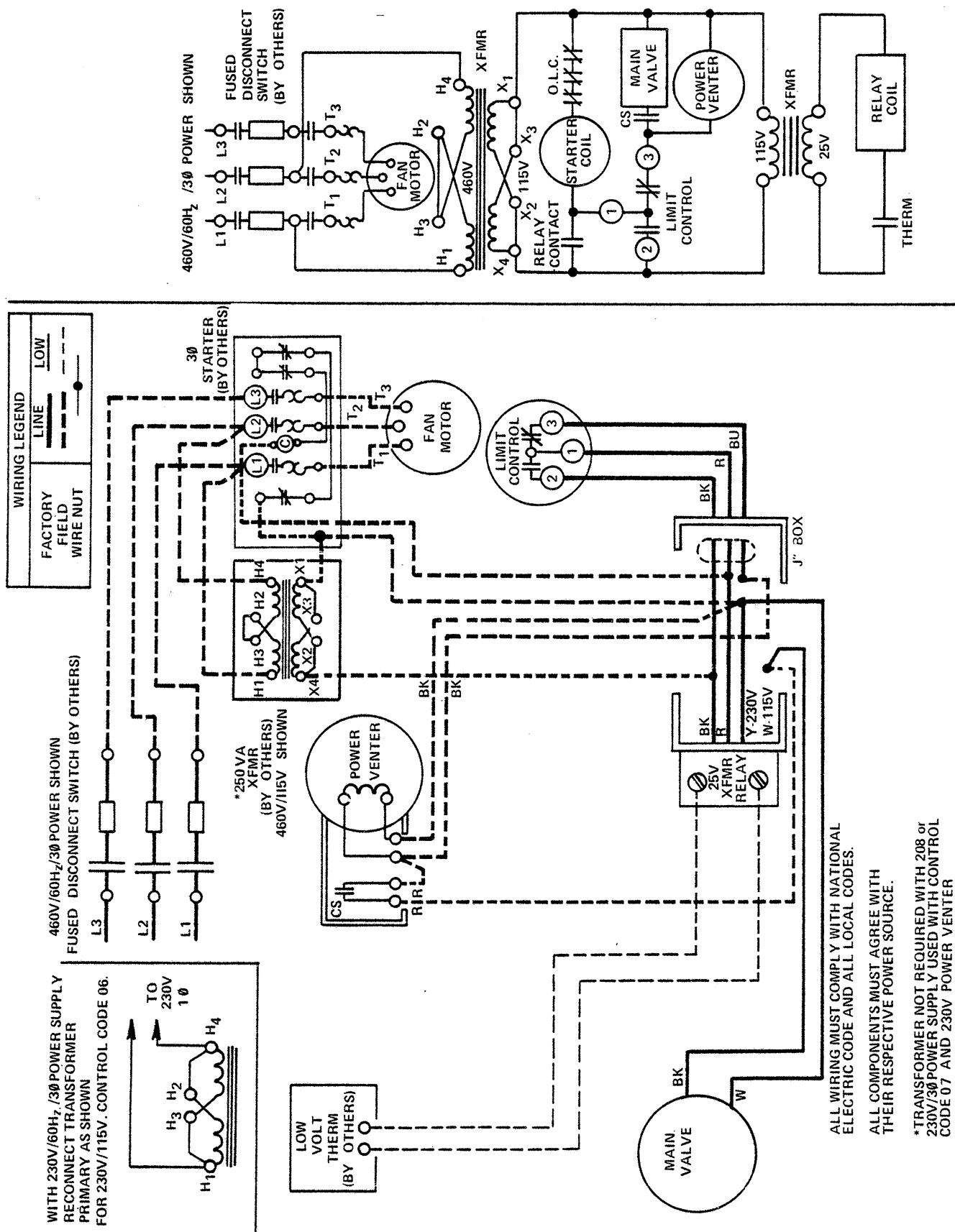
8H5985A169—Transformer relay, low voltage thermostat, three phase. Control codes 06, 07.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



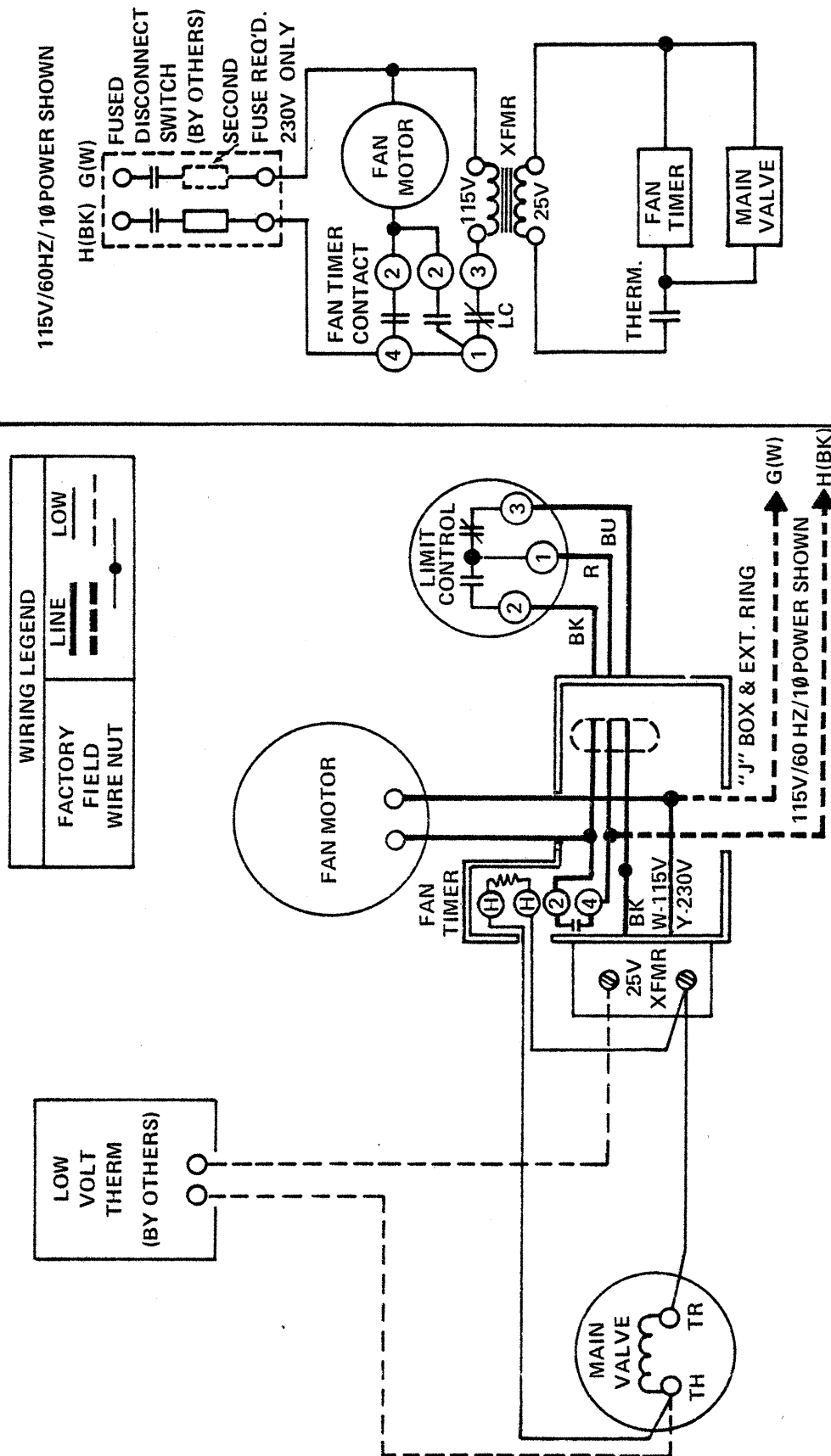
8H5985A166—Transformer relay, power venter, low voltage thermostat, single phase. Control codes 06, 07.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



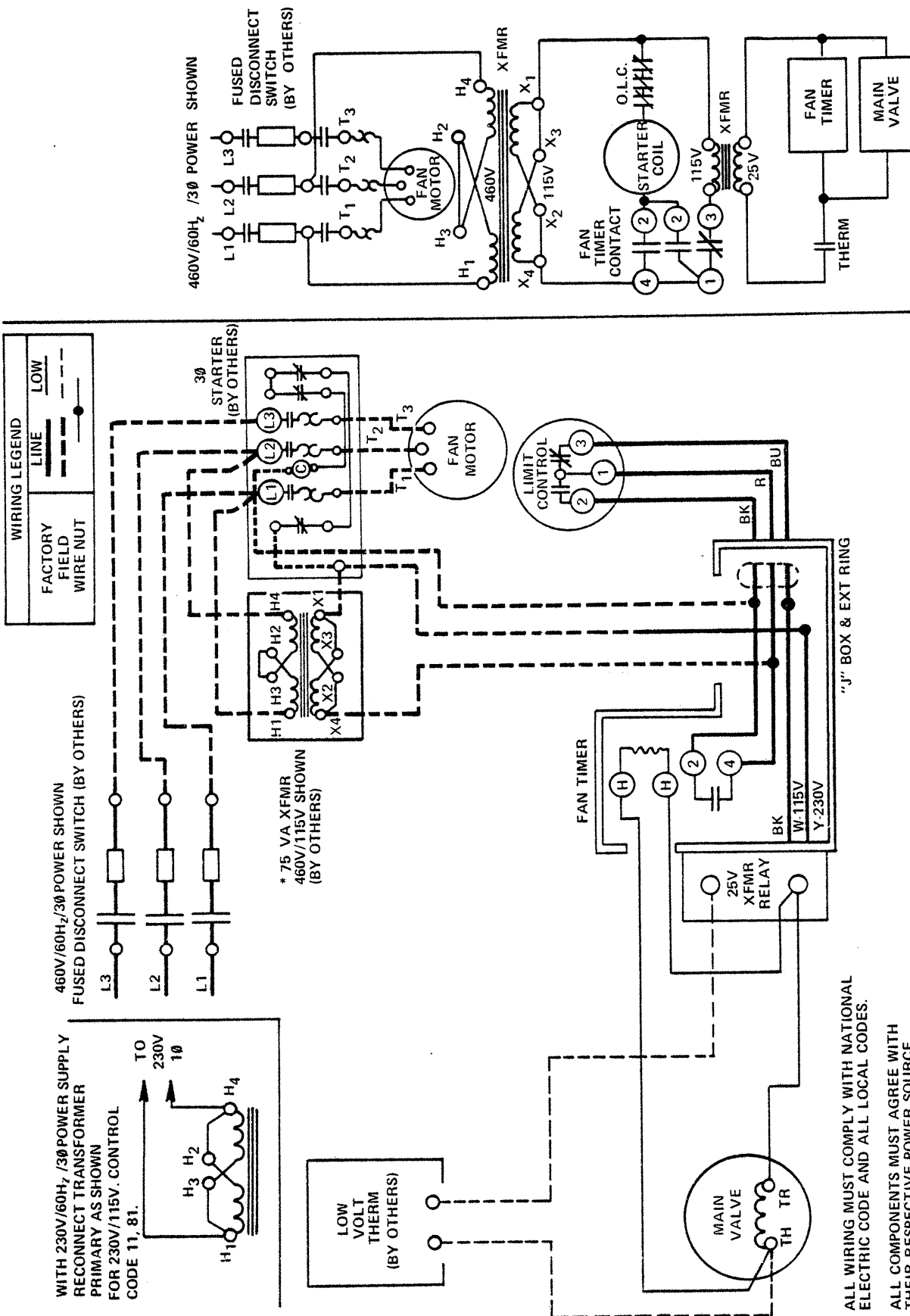
8H5985A171—Transformer relay, power venter, low voltage thermostat, three phase. Control codes 06, 07.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



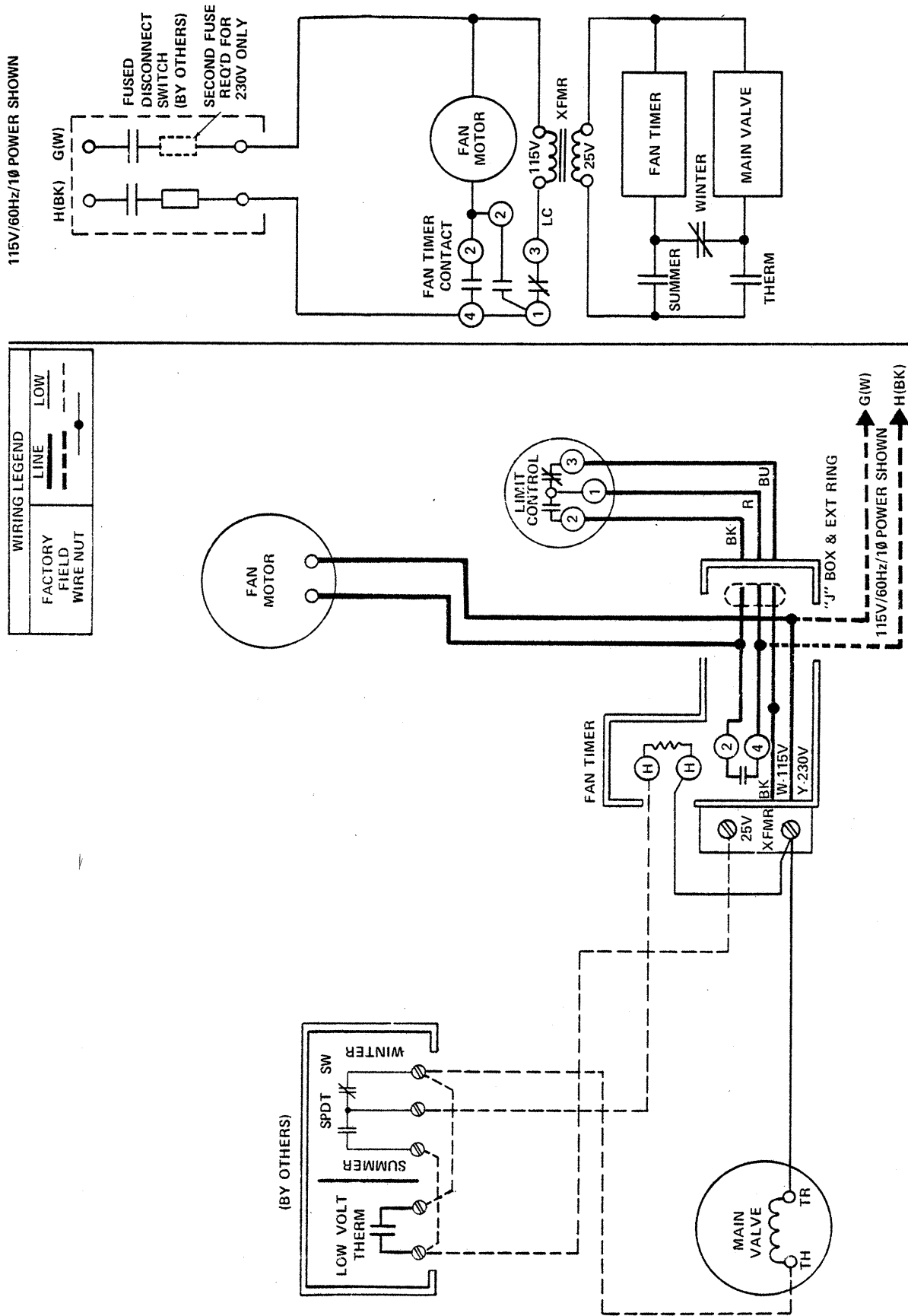
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



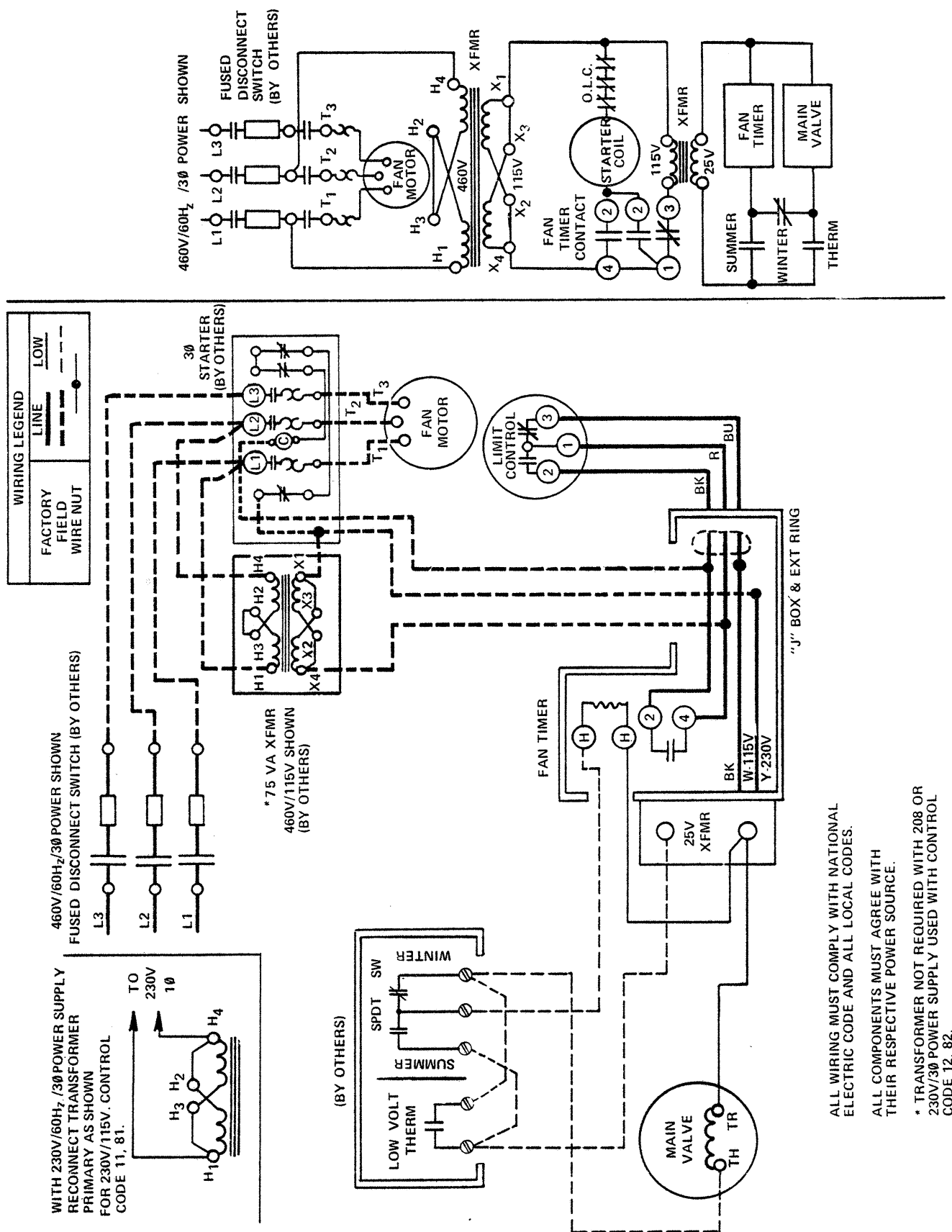
8H5985A164—Fan time delay, low voltage thermostat, three phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



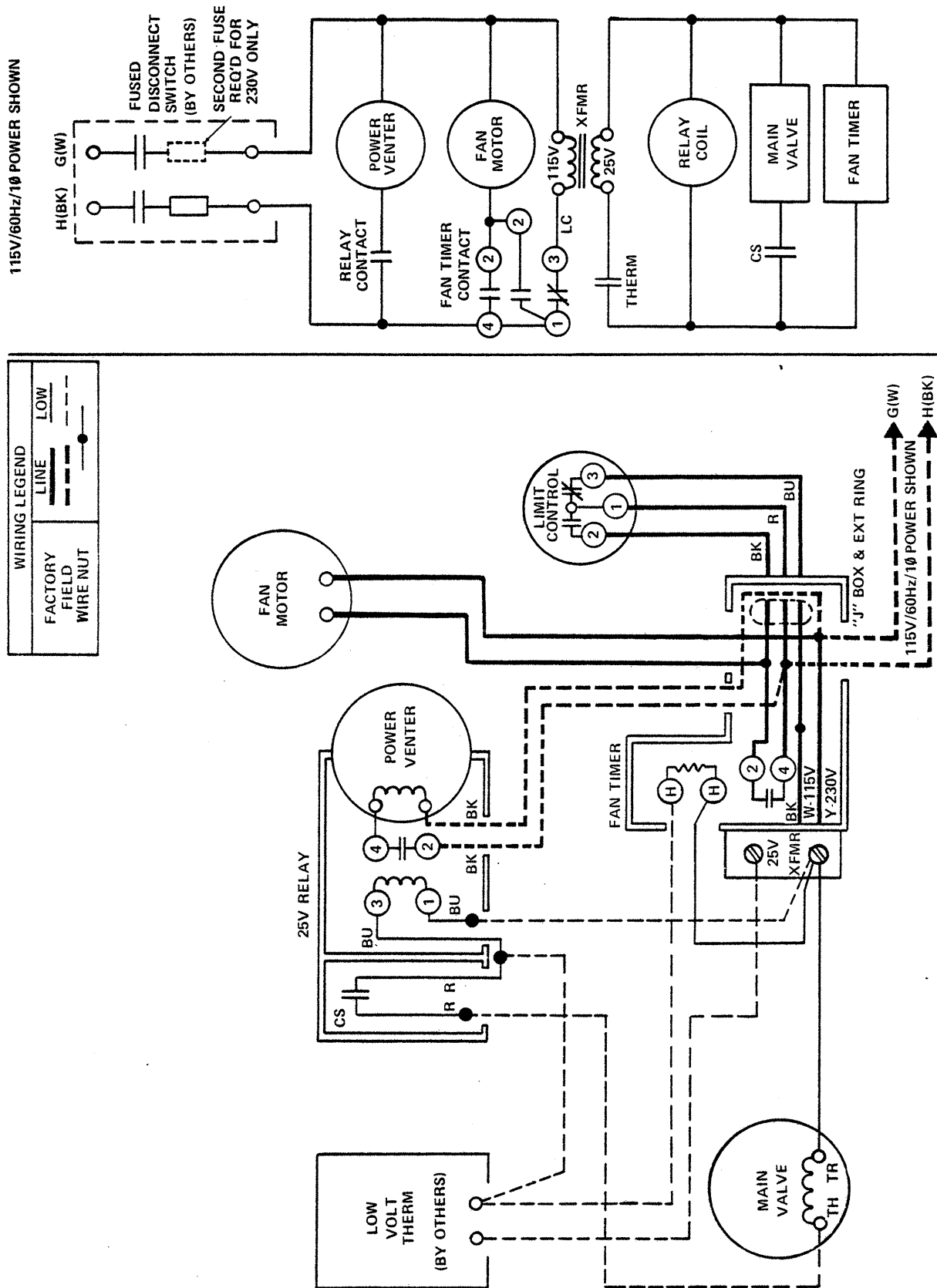
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



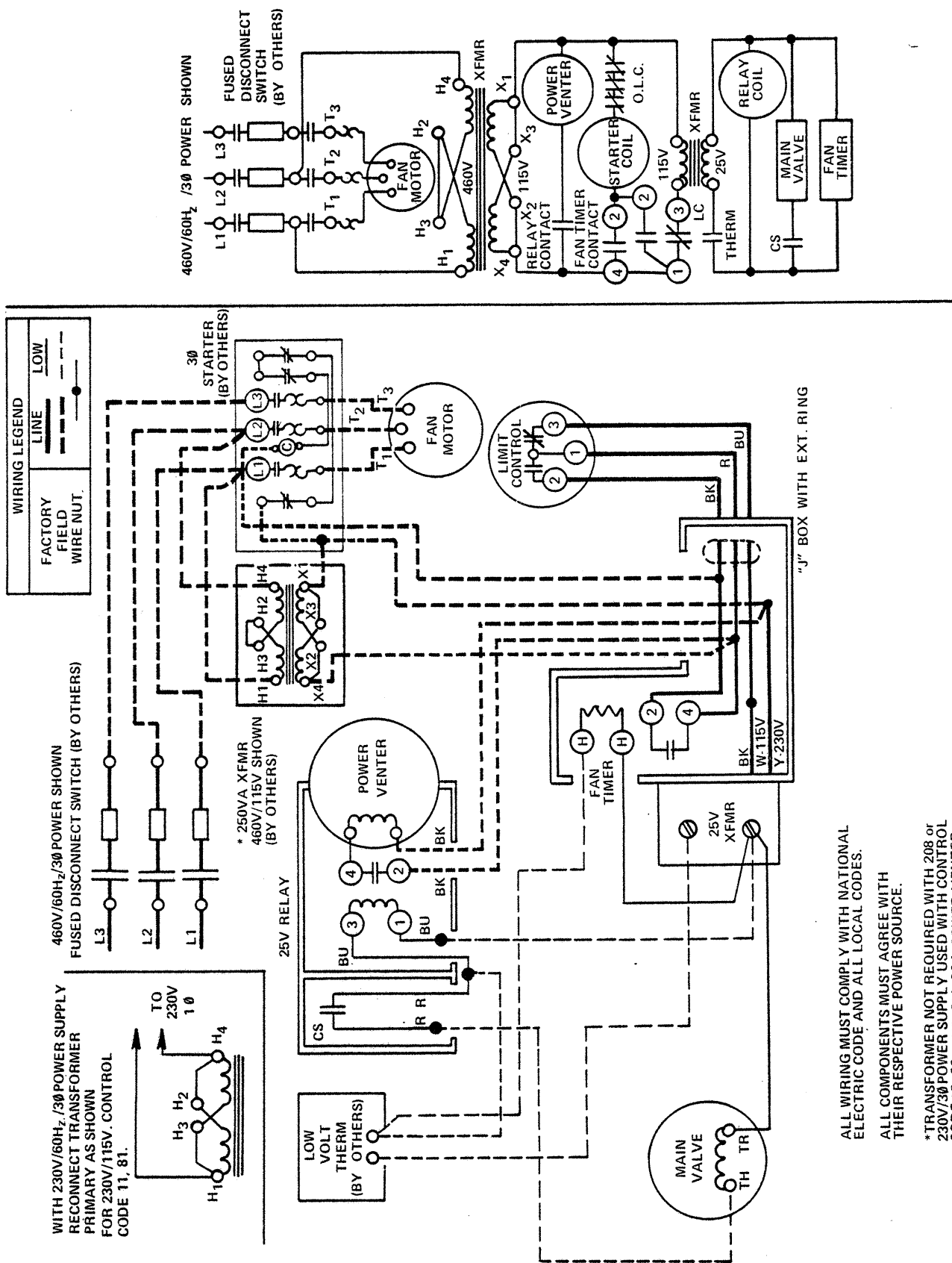
88H5985A212—Fan time delay, low voltage thermostat, S-W switch, three phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



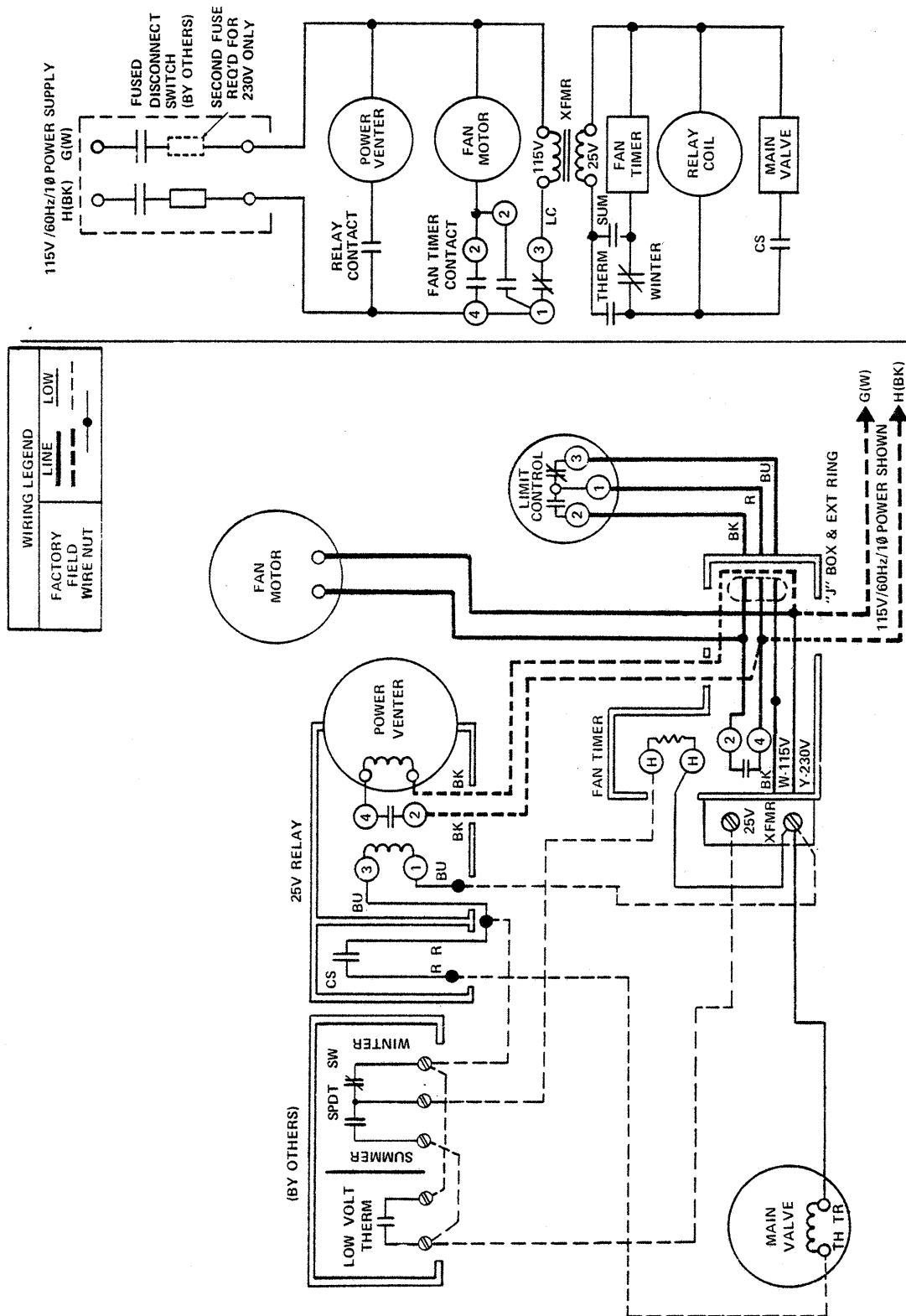
8H5985A198—Fan time delay, low voltage controlled power venter, low voltage thermostat, single phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A207—Fan time delay, low voltage controlled power venter, low voltage thermostat, three phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

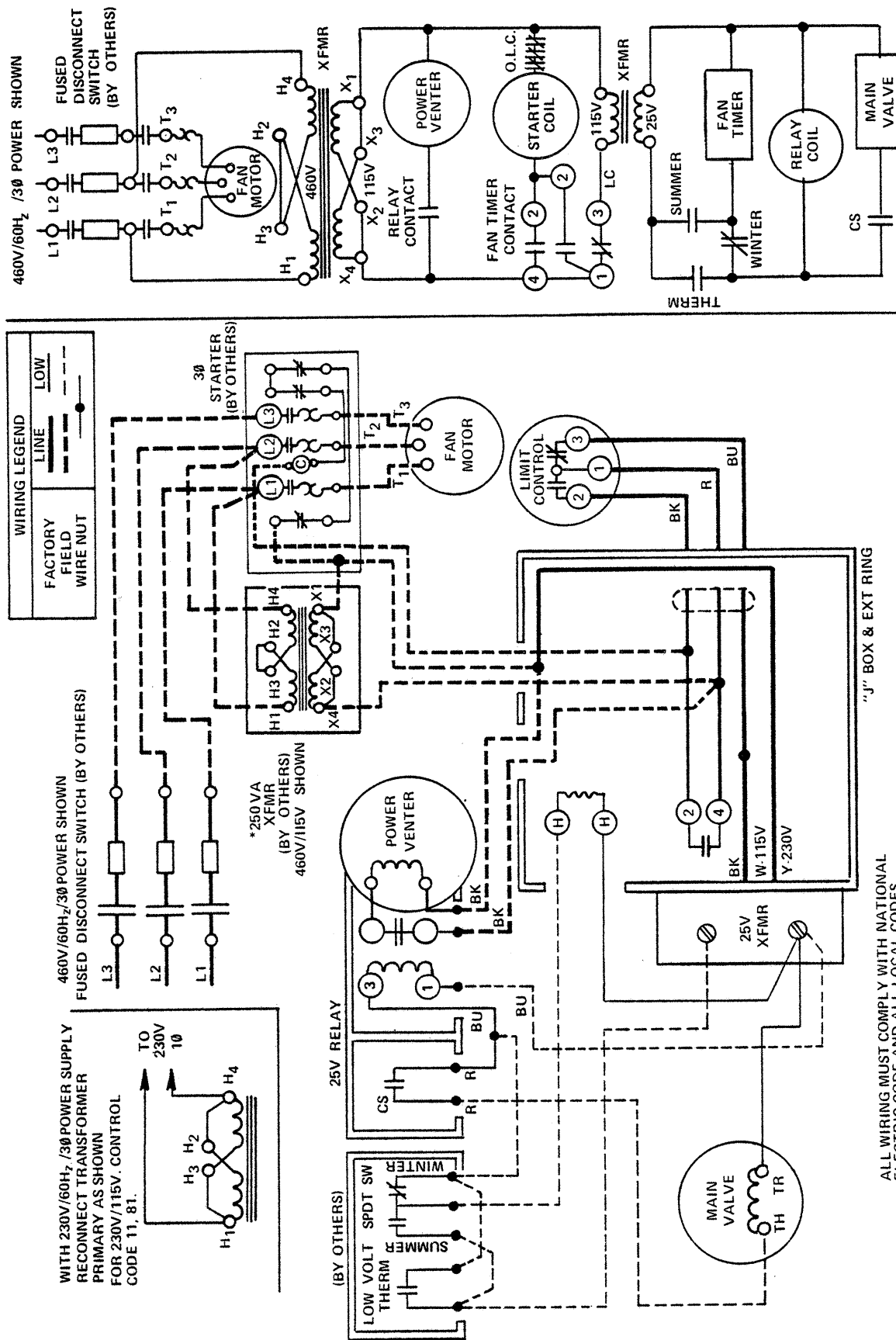


ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.

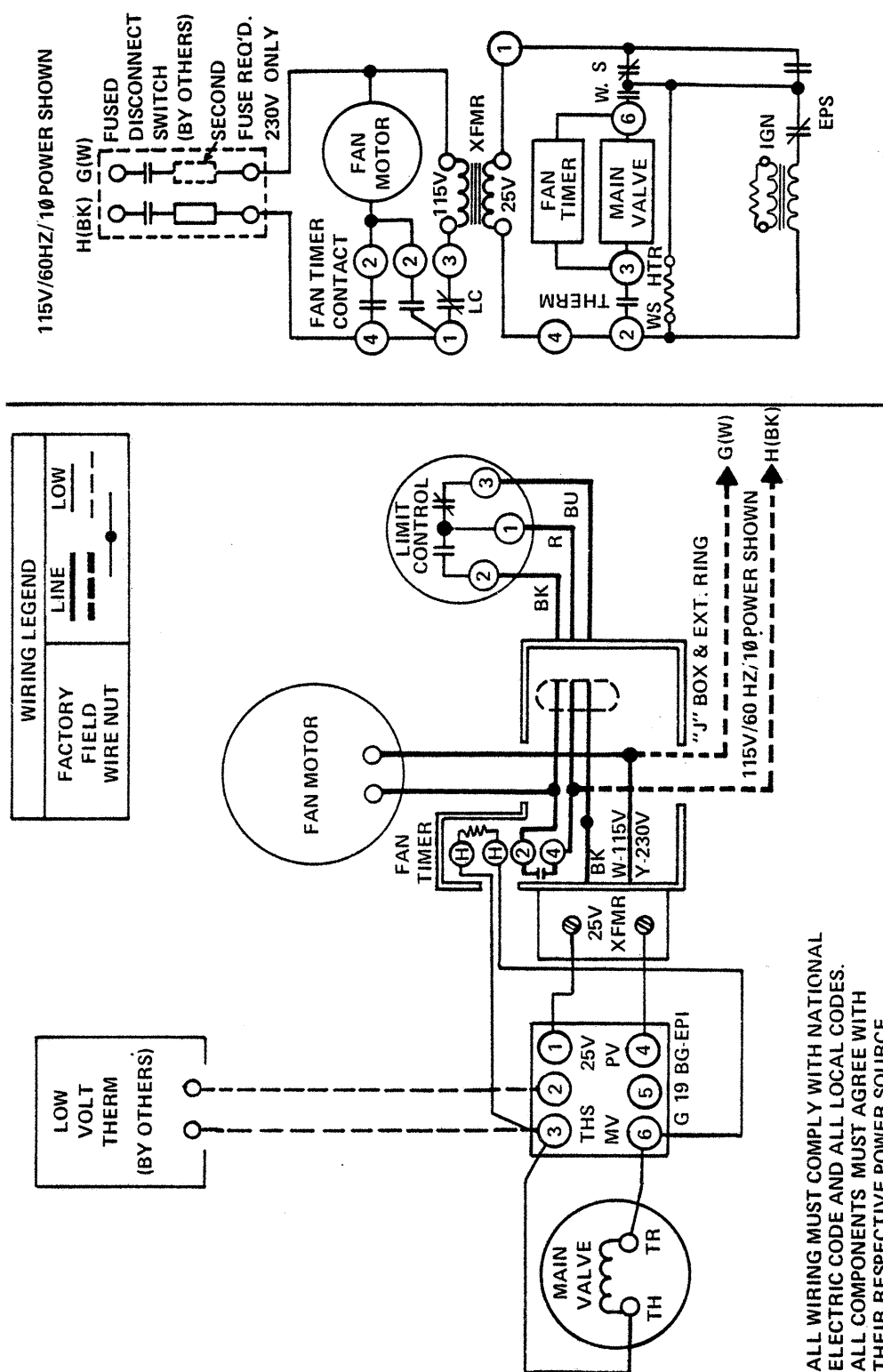
8H5985A202—Fan time delay, low voltage controlled power venter, low voltage thermostat, S-W switch, single phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



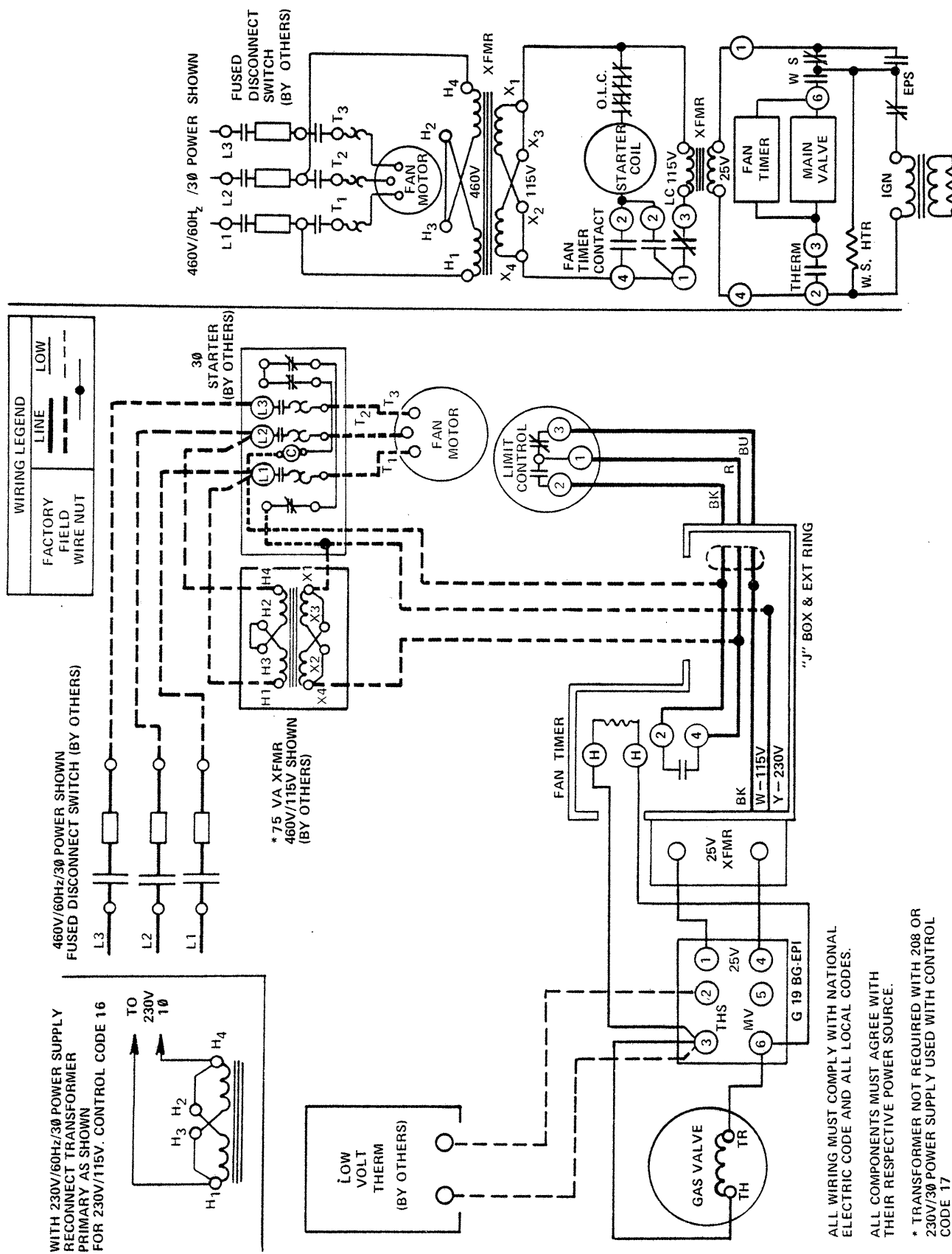
8H5985A213—Fan time delay, low voltage controlled power venter, low voltage thermostat, S-W switch, three phase. Control codes 11, 12, 81, 82.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



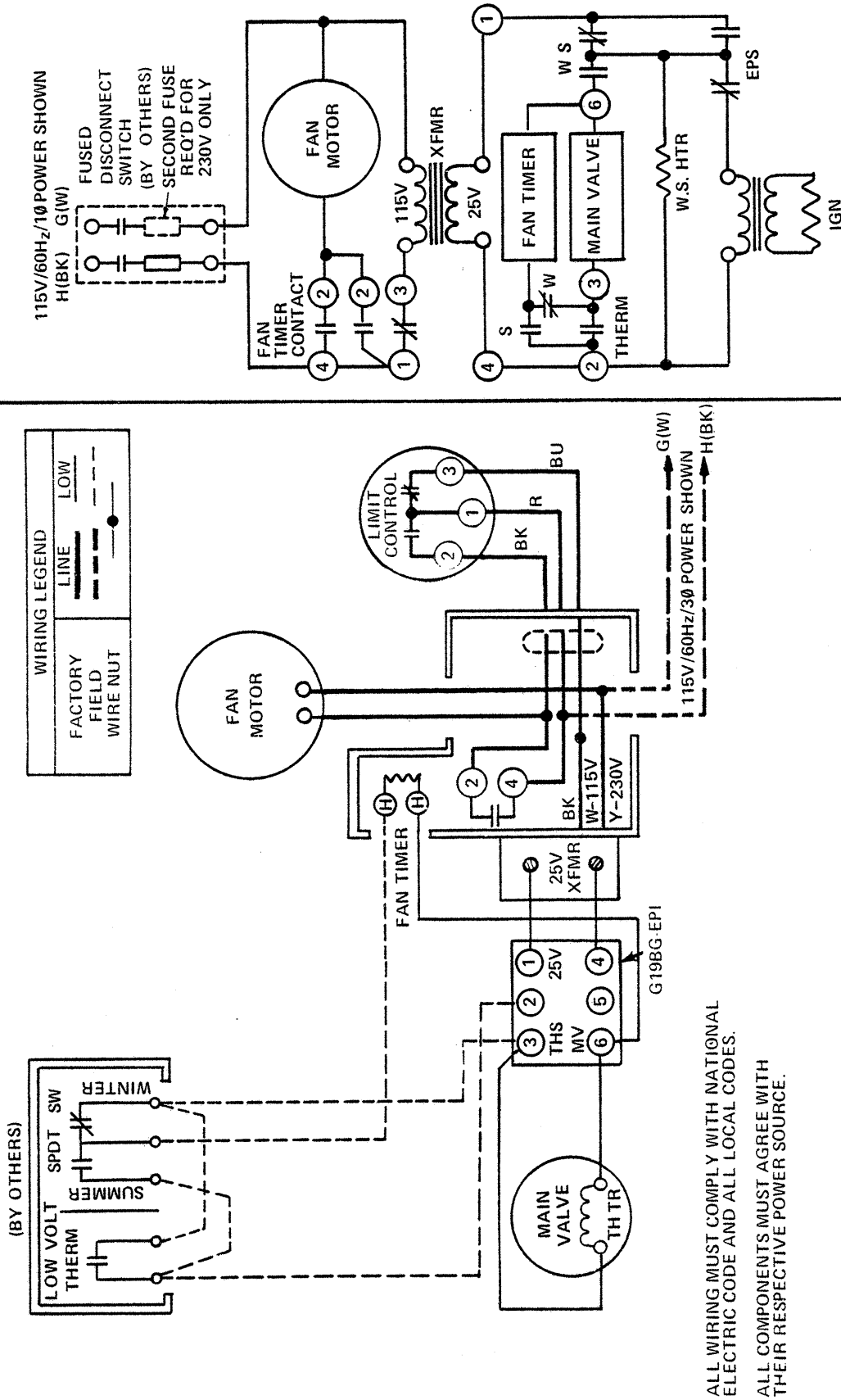
8H5985A144—Non 100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, single phase. Control codes 16, 17.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

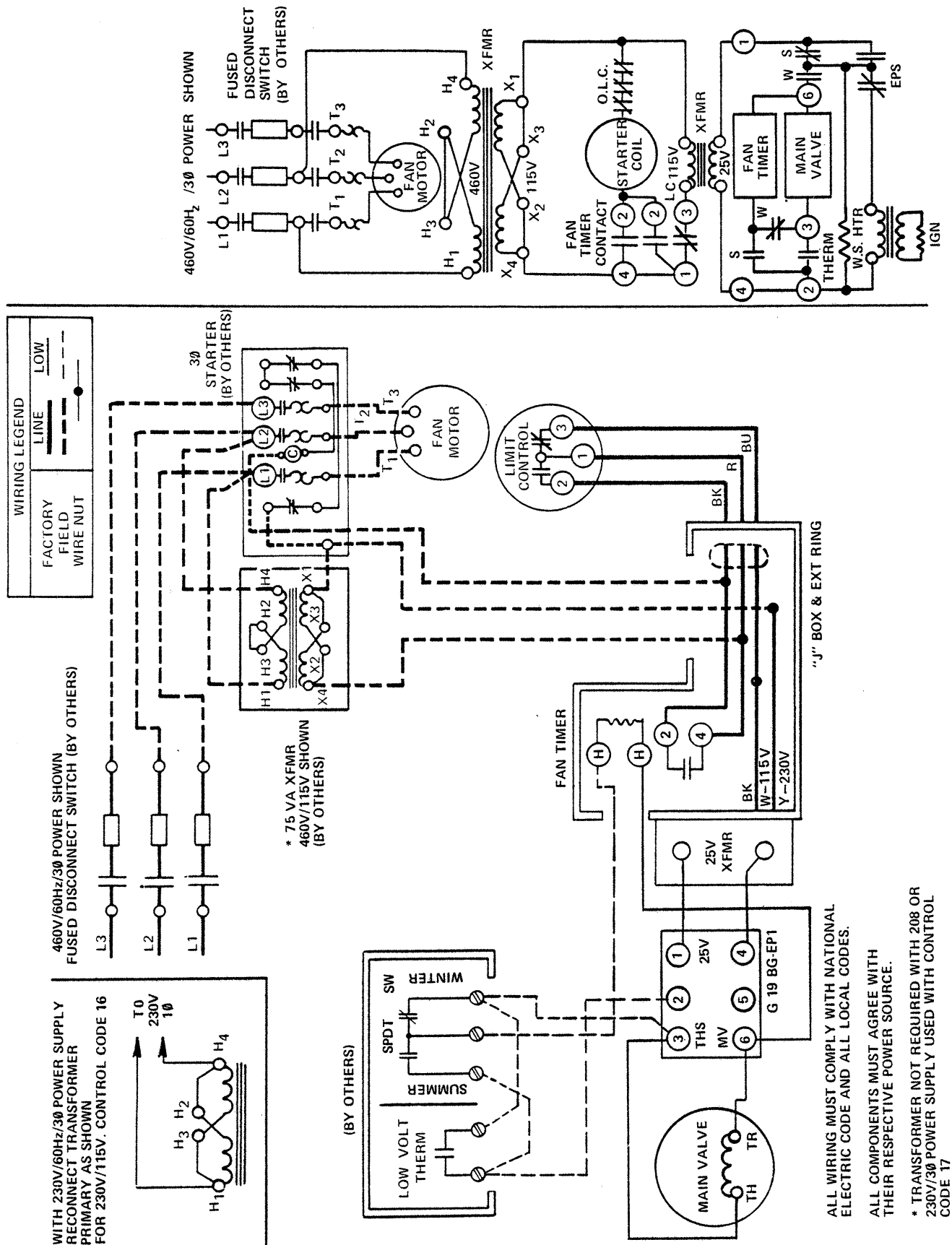


8H5985A208—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, three phase. Control codes 16, 17.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

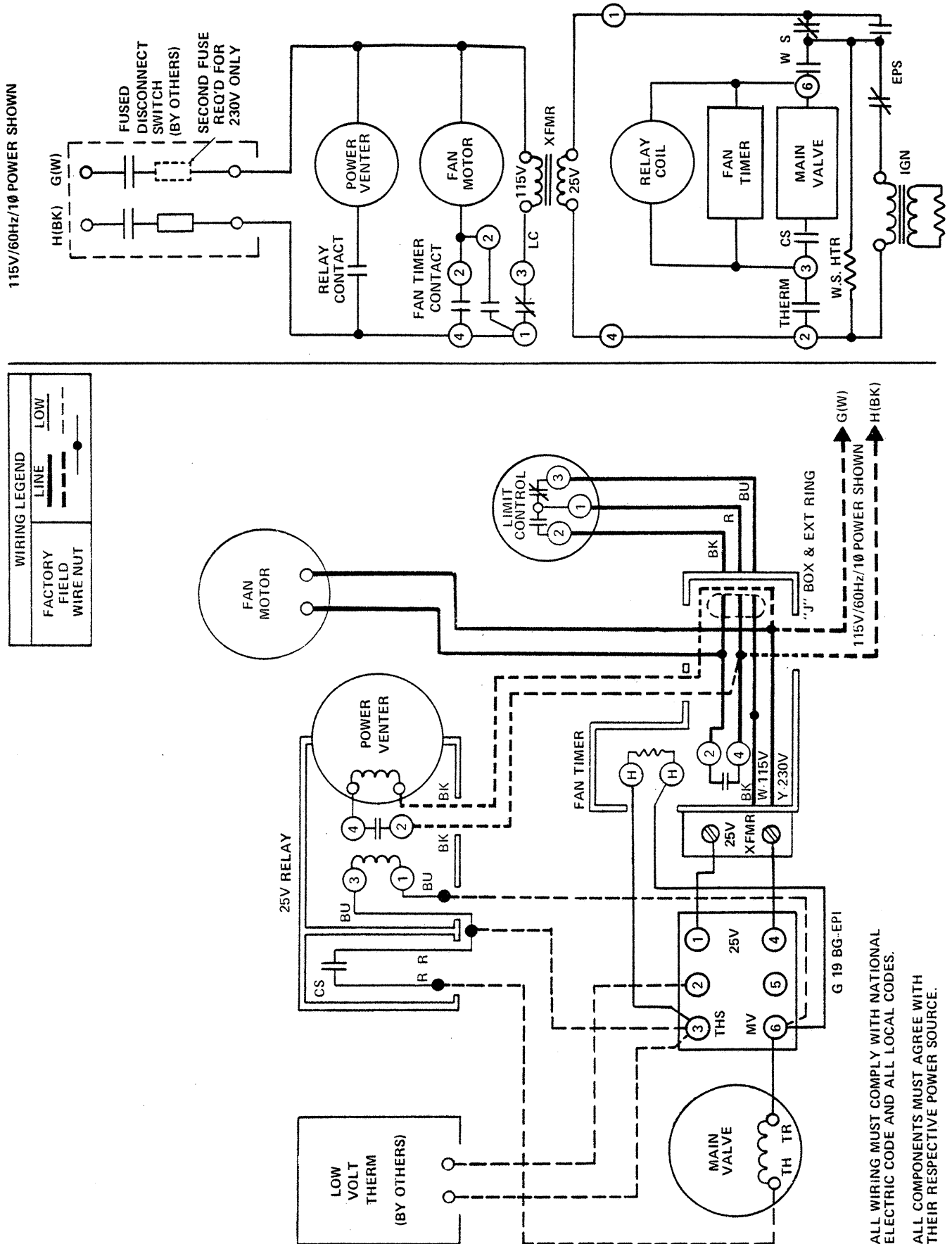


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

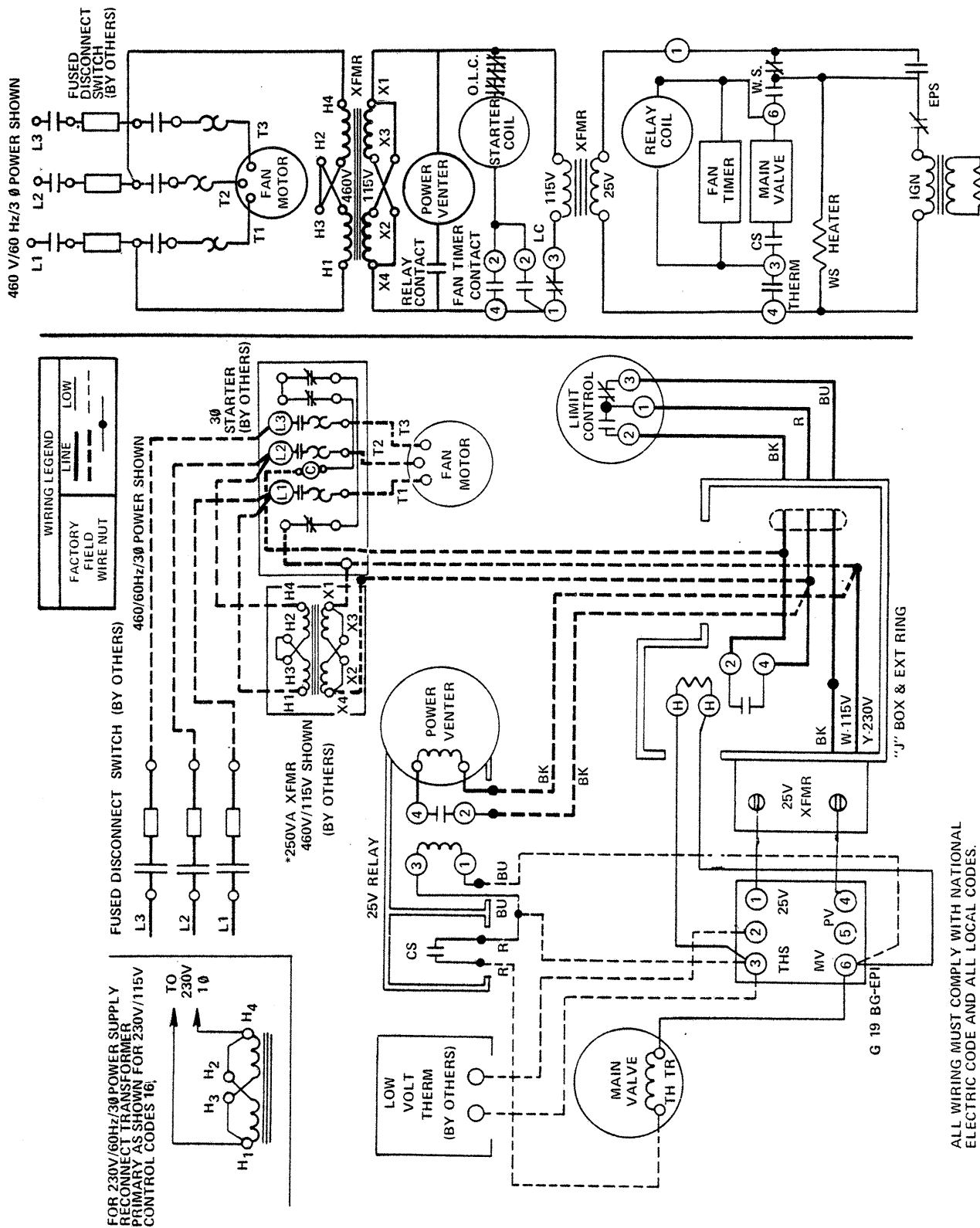


8H5985A214—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, S-W switch, three phase. Control Codes 16, 17.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

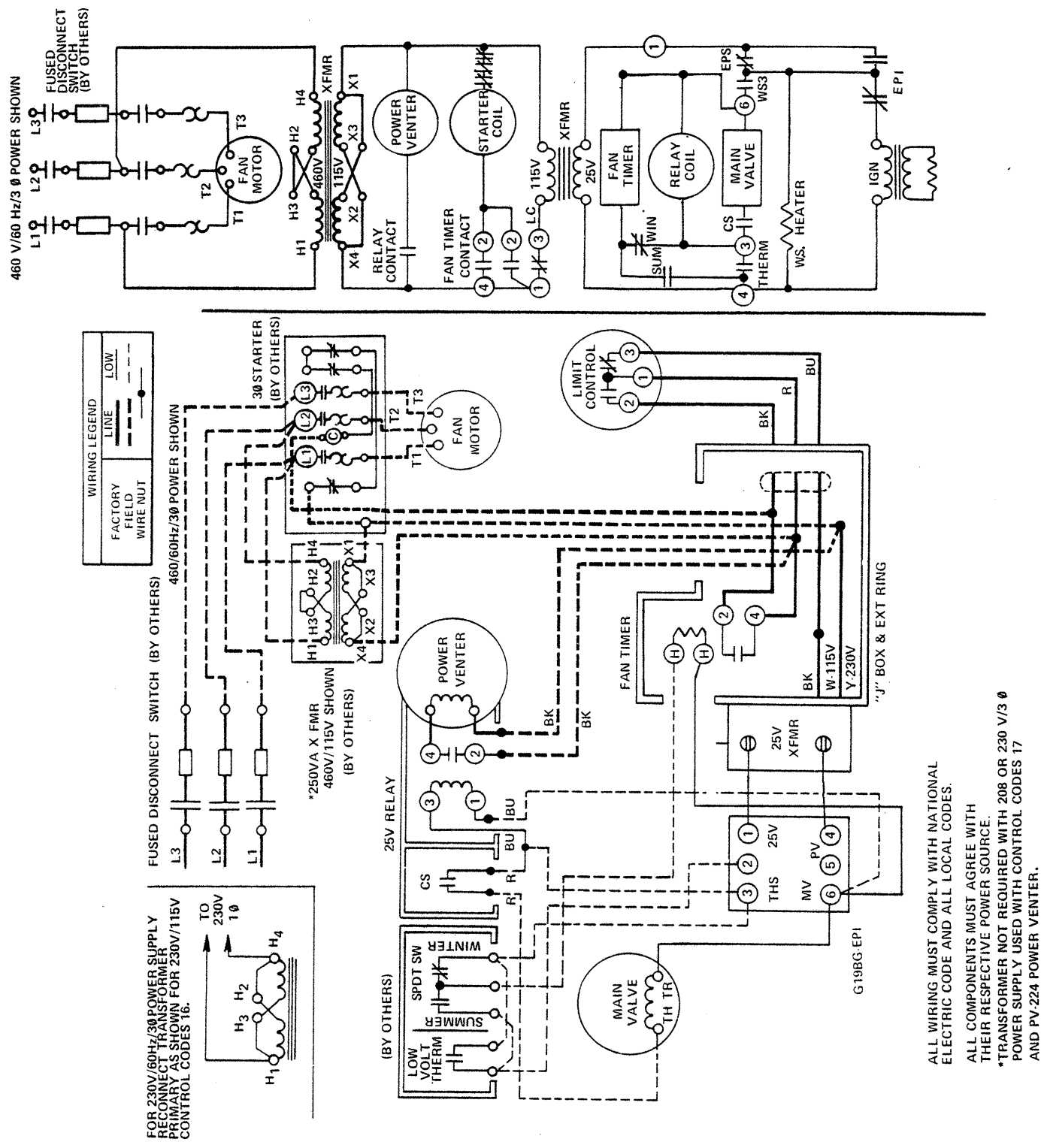
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH

CONTROL CODES 17 AND PV-224 POWER VENTER

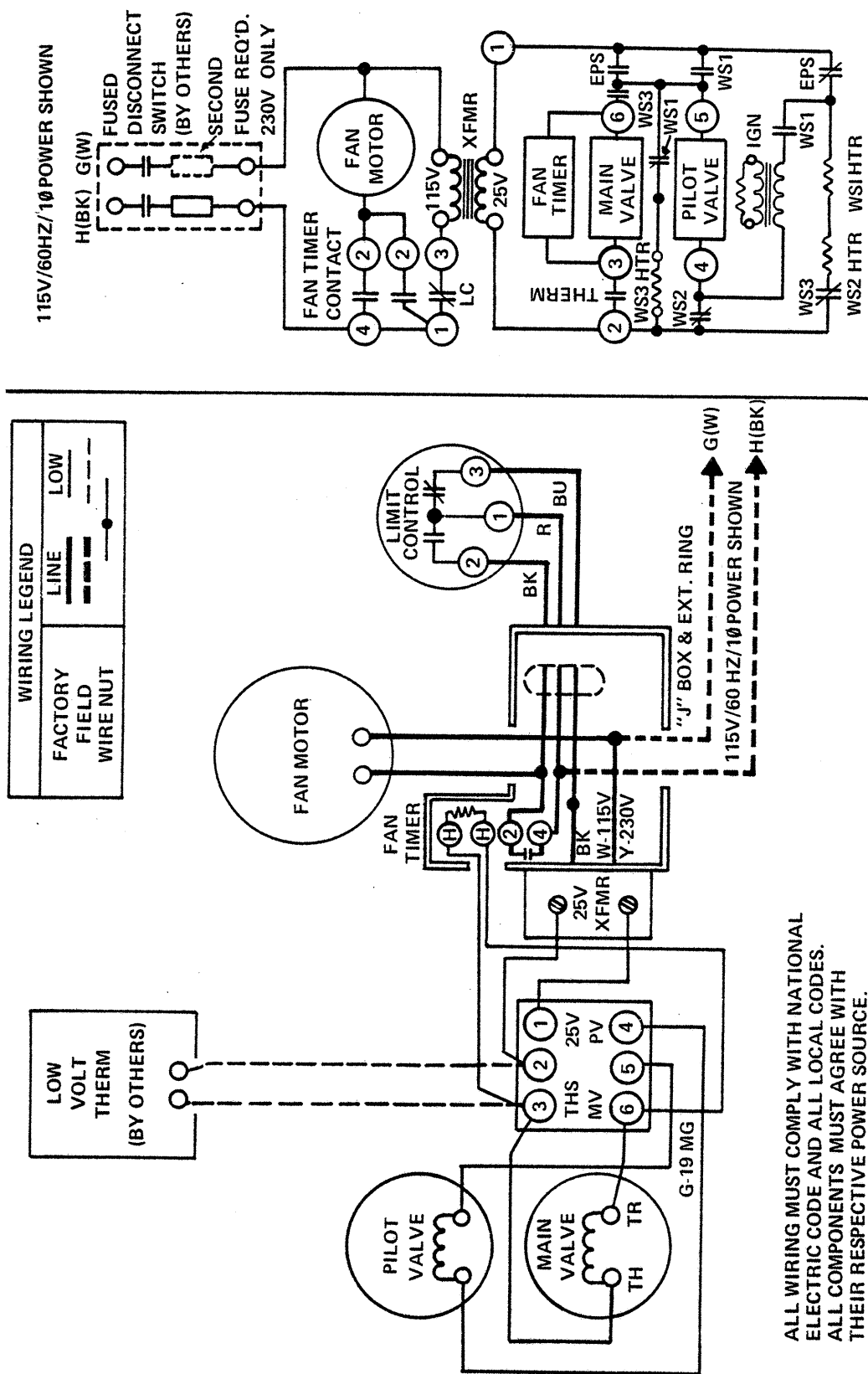
8H5985A209—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, low voltage controlled power venter, three phase. Control codes 16, 17.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



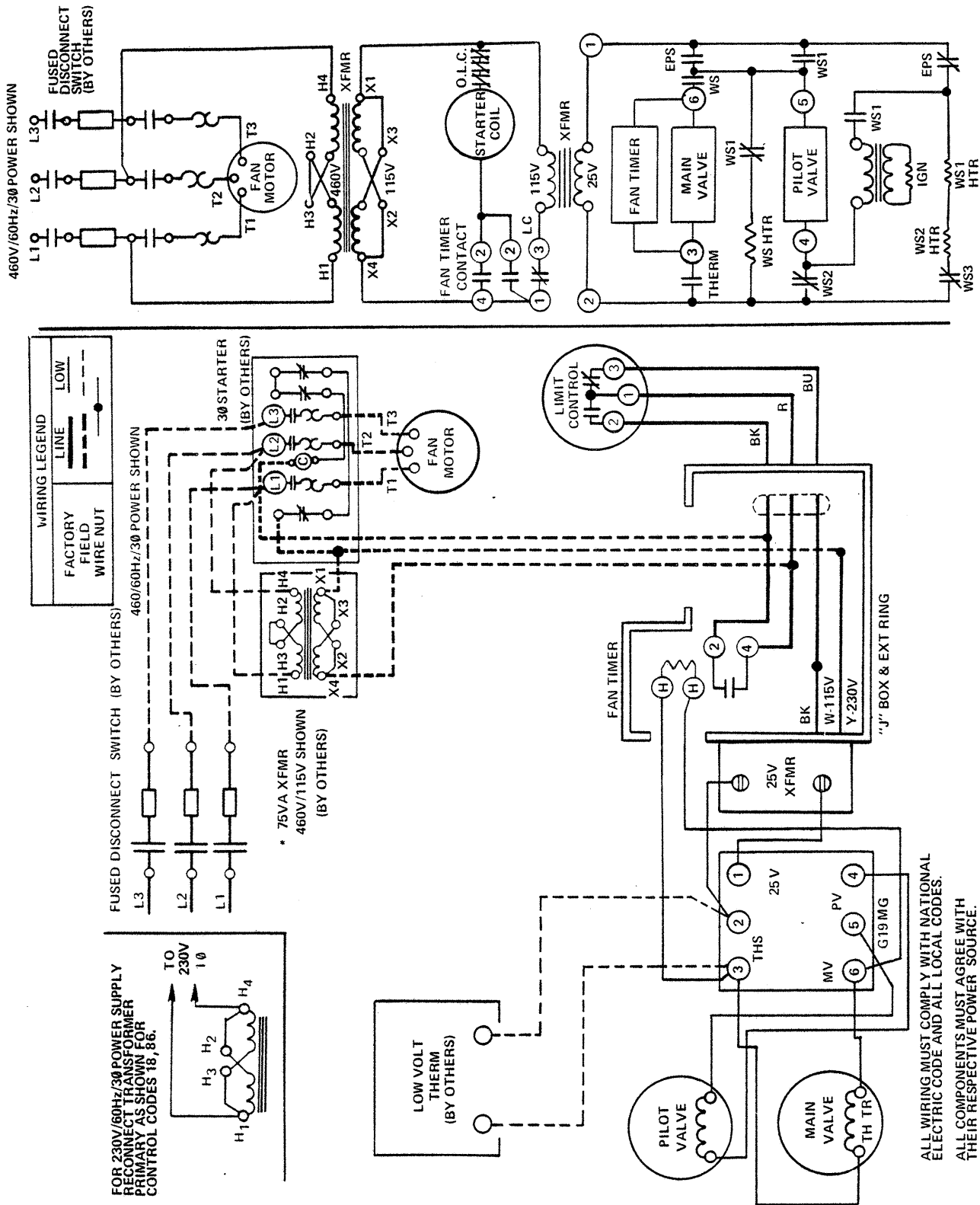
8H5985A215—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, low voltage controlled power vent, S.W. switch, three phase. Control codes 16, 17.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



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WIRING DIAGRAMS, MODELS PA, BA, GAS-FIRED UNIT HEATERS



ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.

*TRANSFORMER NOT REQUIRED WITH 208 OR 230 V/3 Ø
POWER SUPPLY USED WITH CONTROL CODES 19 AND 87

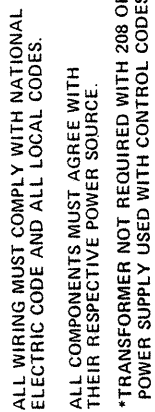
8H5985A210—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, three phase. Control codes 18, 19, 86, 87.

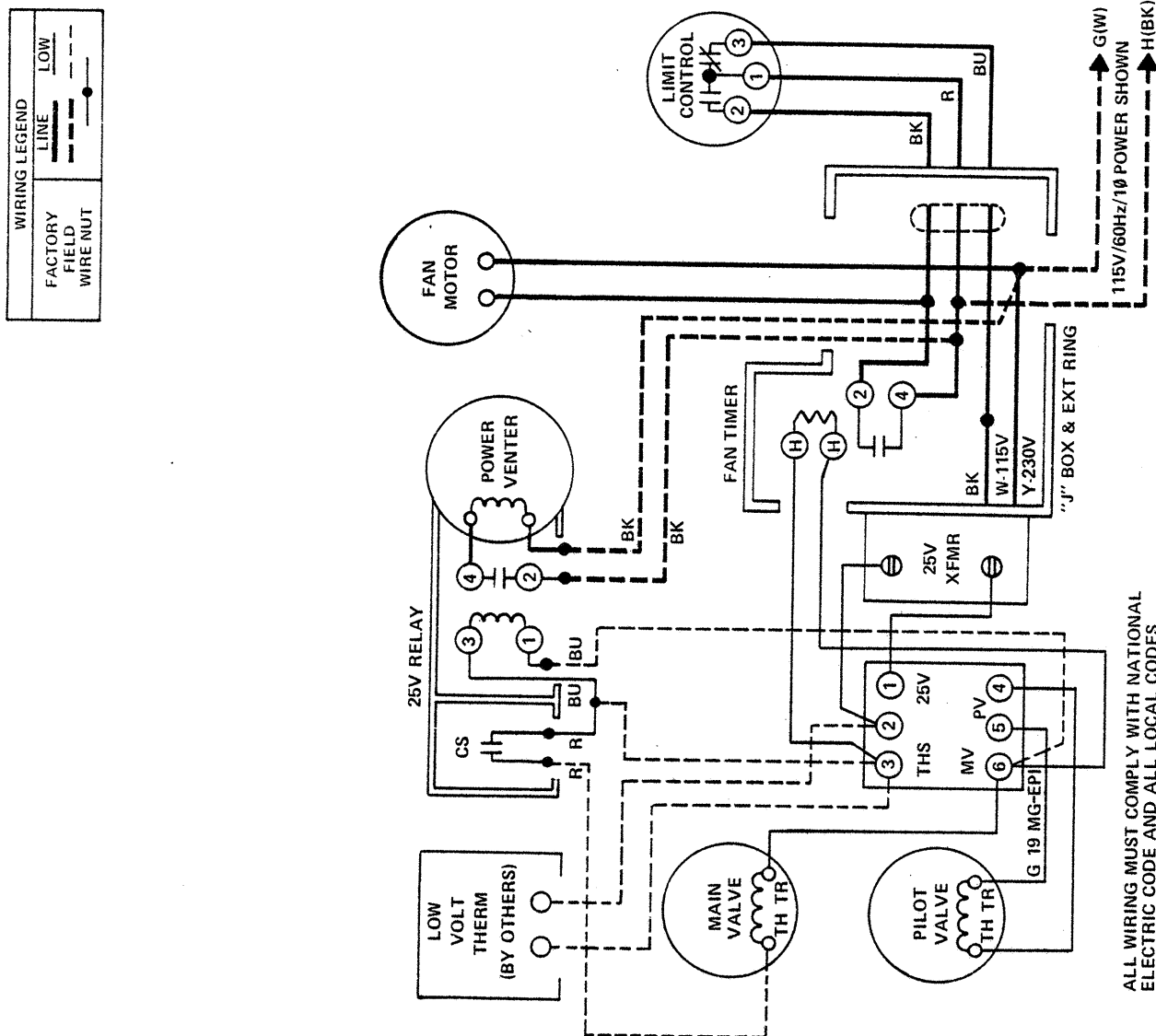
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**ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.**

ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.

8H5985A216—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, S-W switch, three phase. Control codes 18, 19, 86, 87.



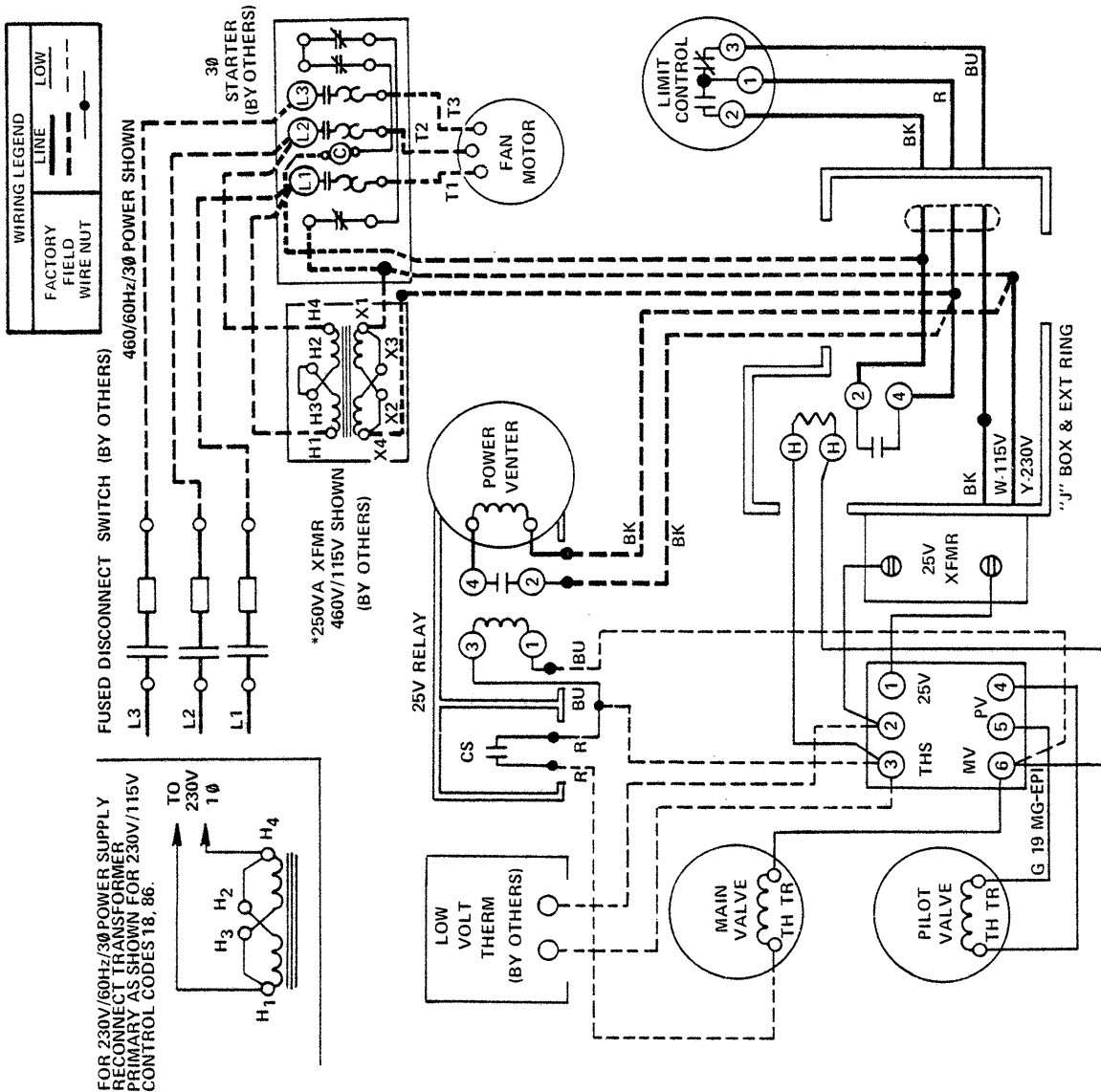
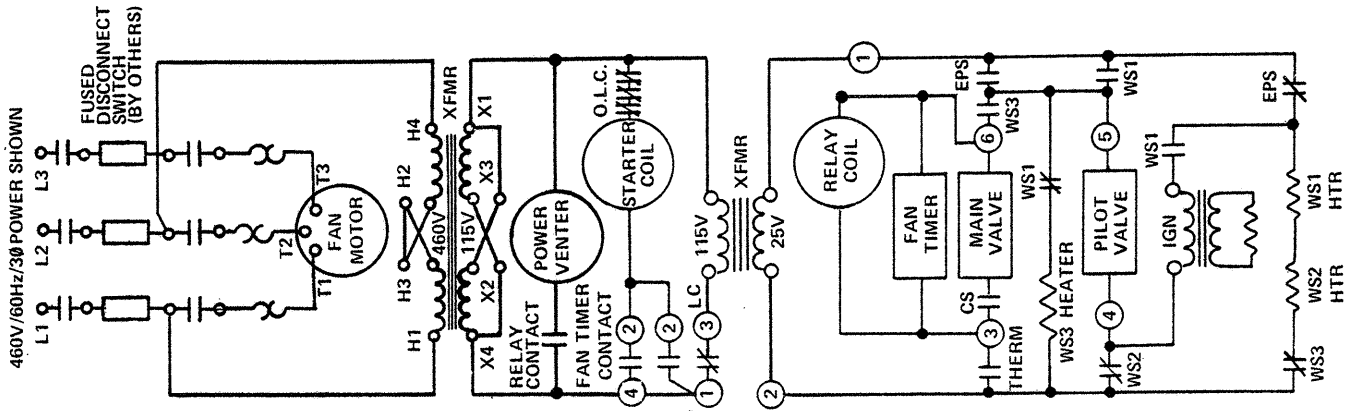
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ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A200—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, single phase, low voltage controlled power venter. Control codes 18, 19, 86, 87.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



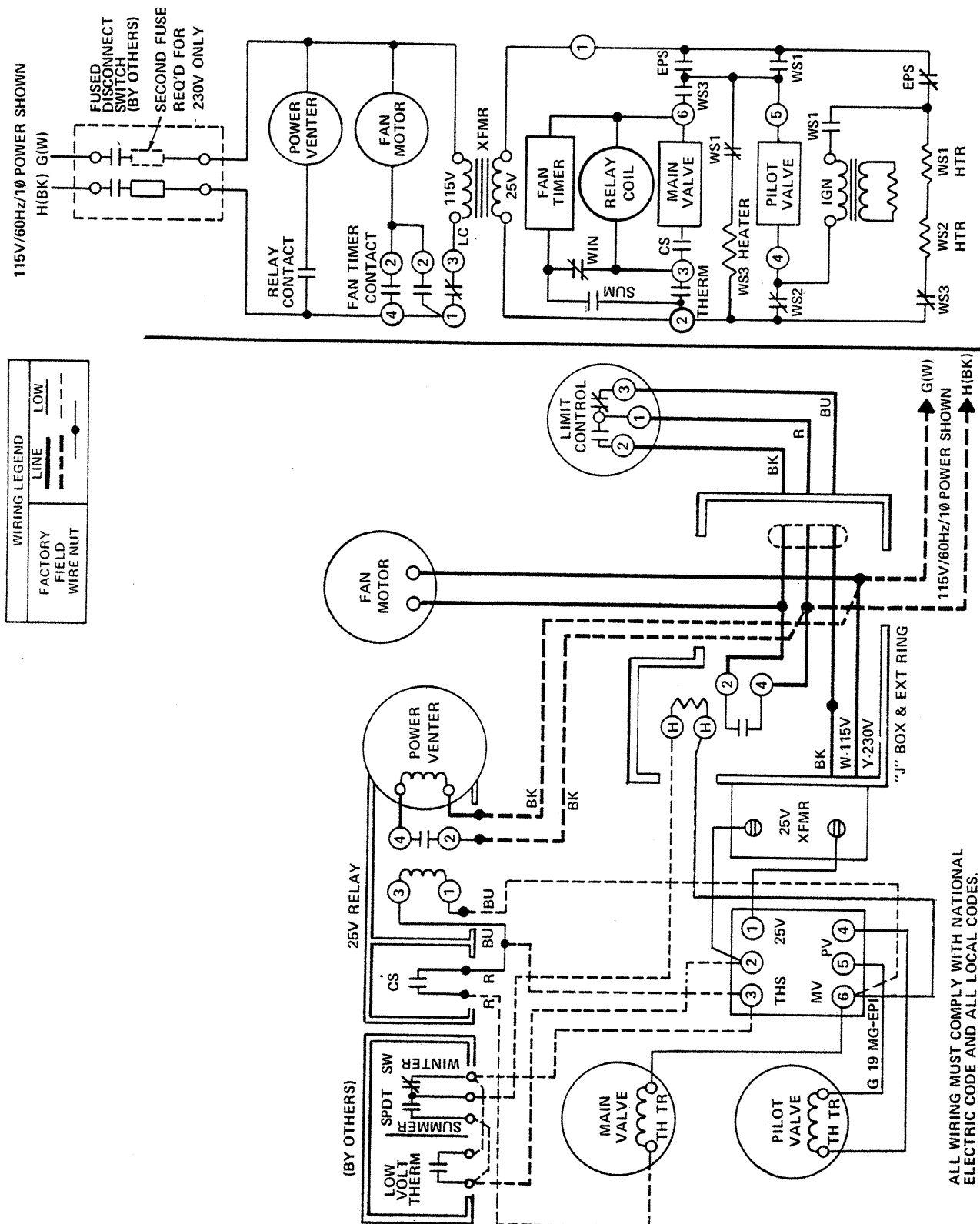
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/30 POWER SUPPLY USED WITH CONTROL CODES 19 AND 87 AND P.V.-224 POWER VENTER

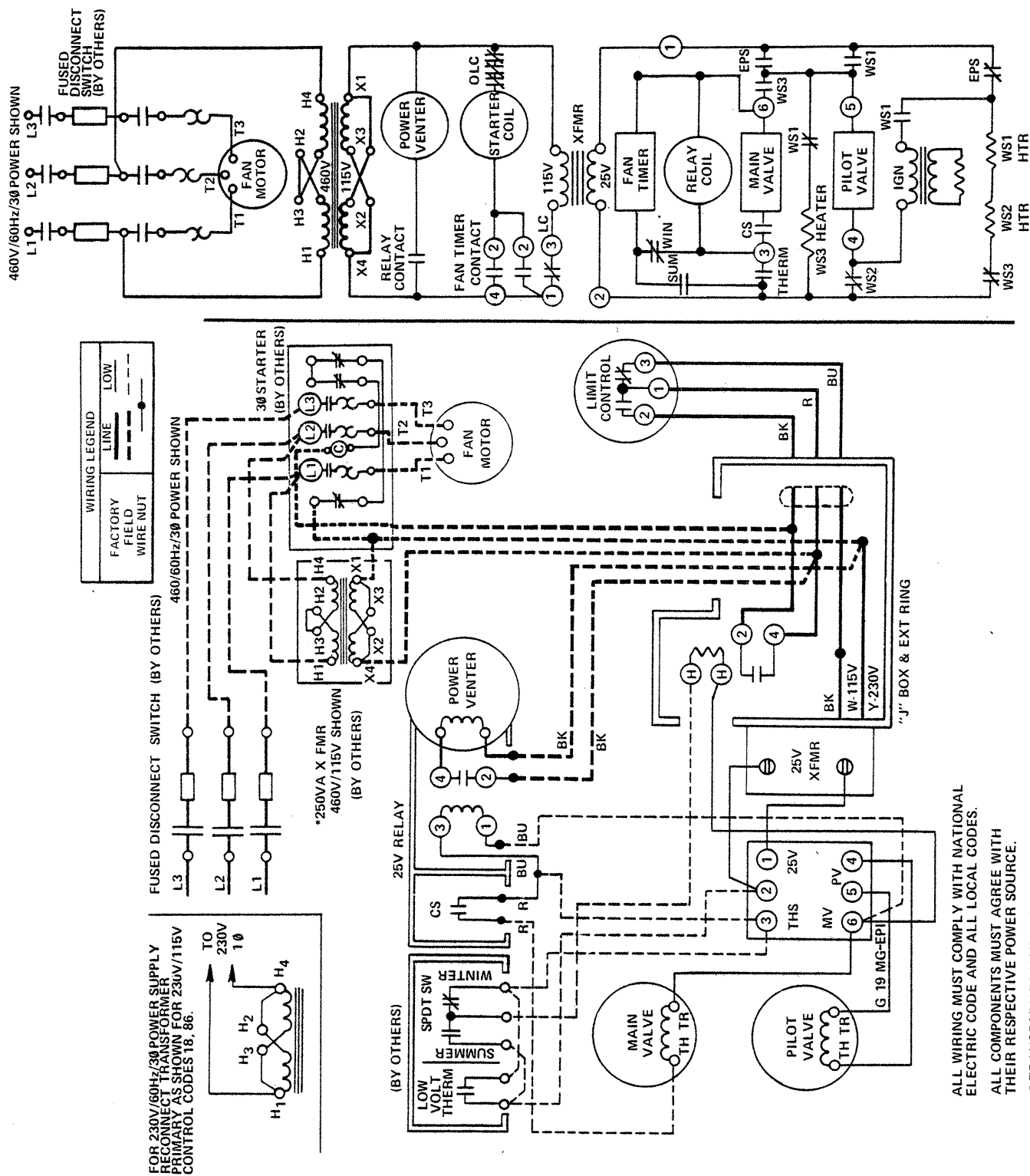
8H5985A211—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, low voltage controlled power venter, three phase. Control codes 18, 19, 86, 87.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



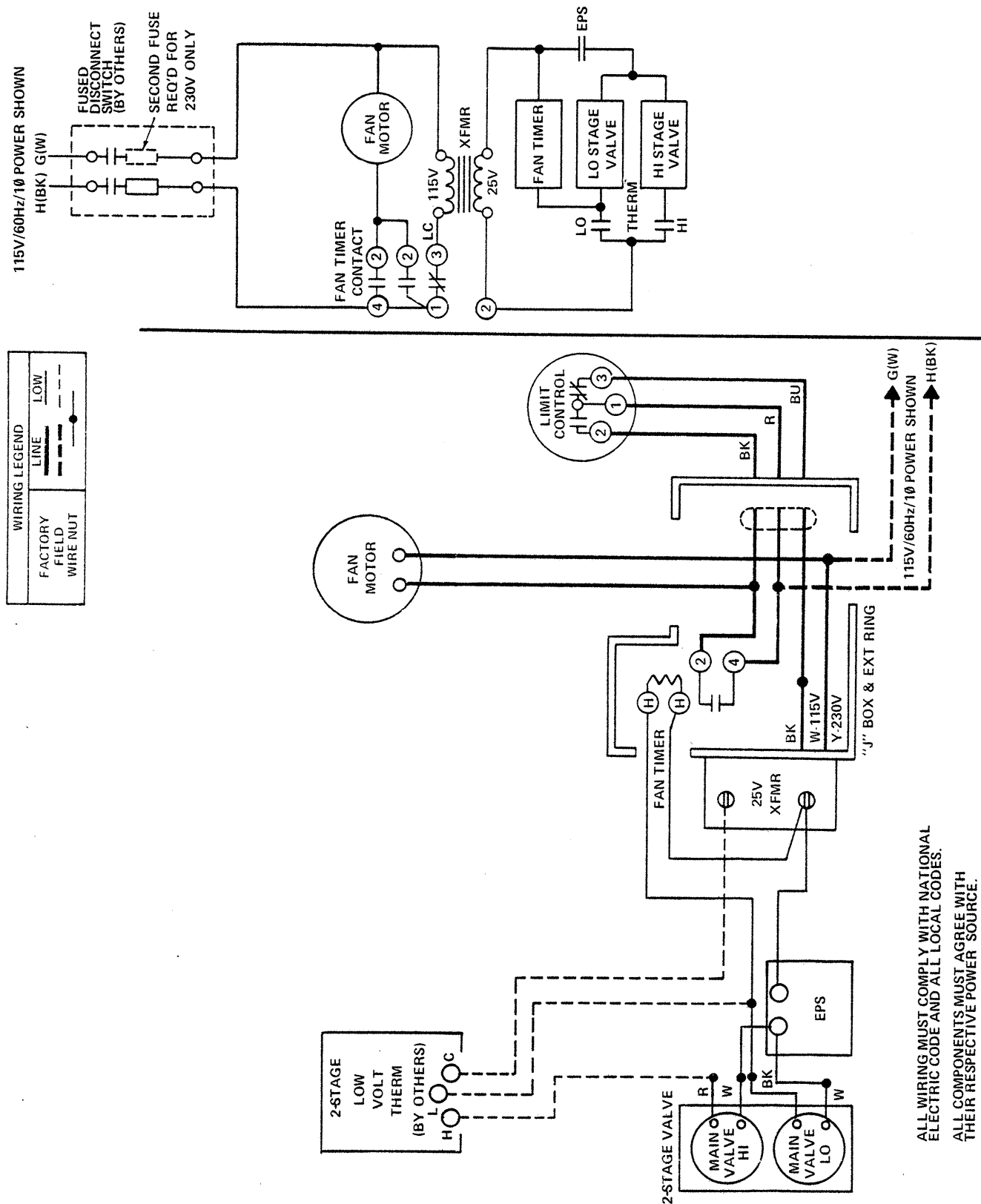
8H5985A206—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, low voltage controlled power venter, single phase. Control codes 18, 19, 86, 87.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



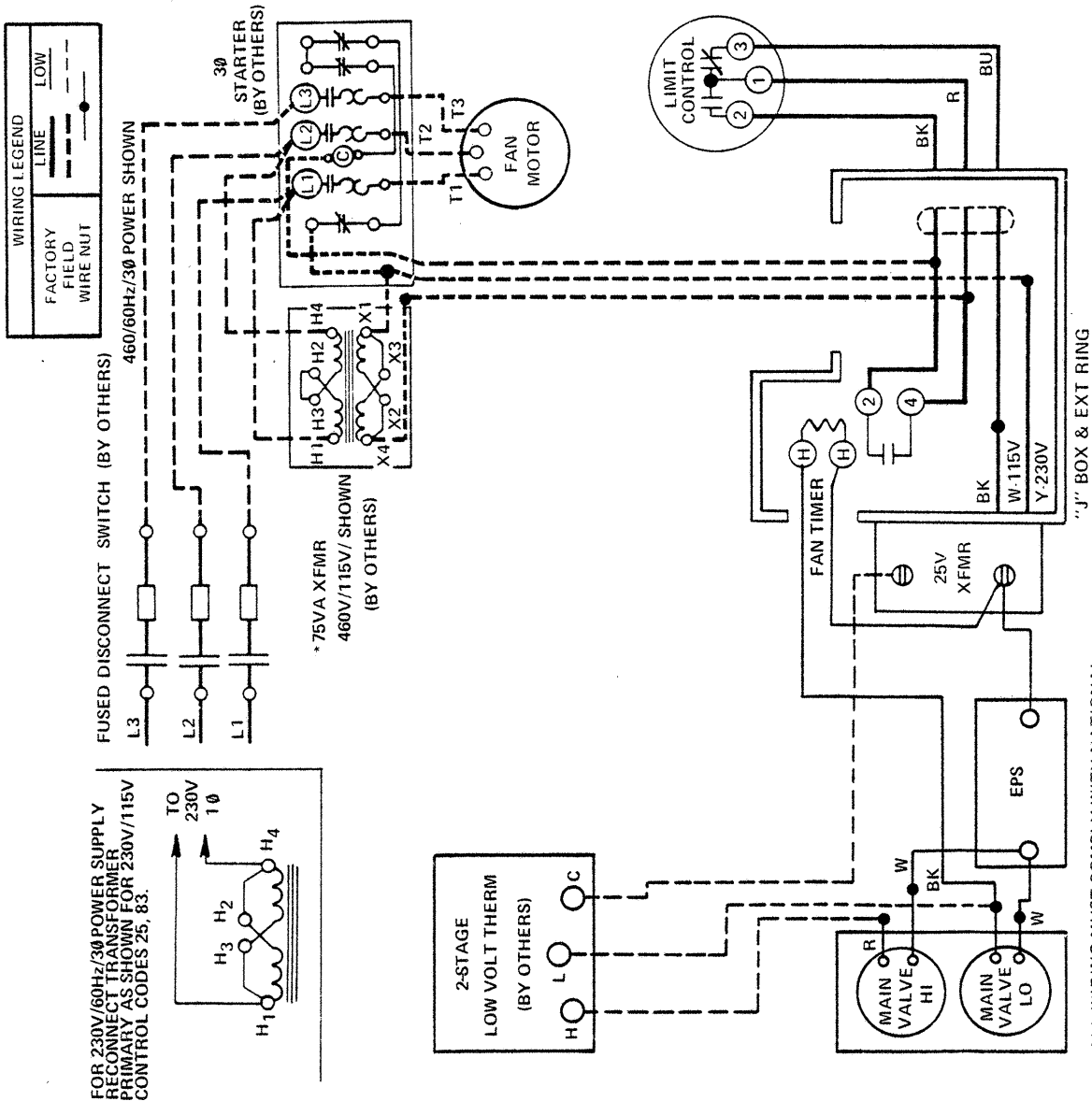
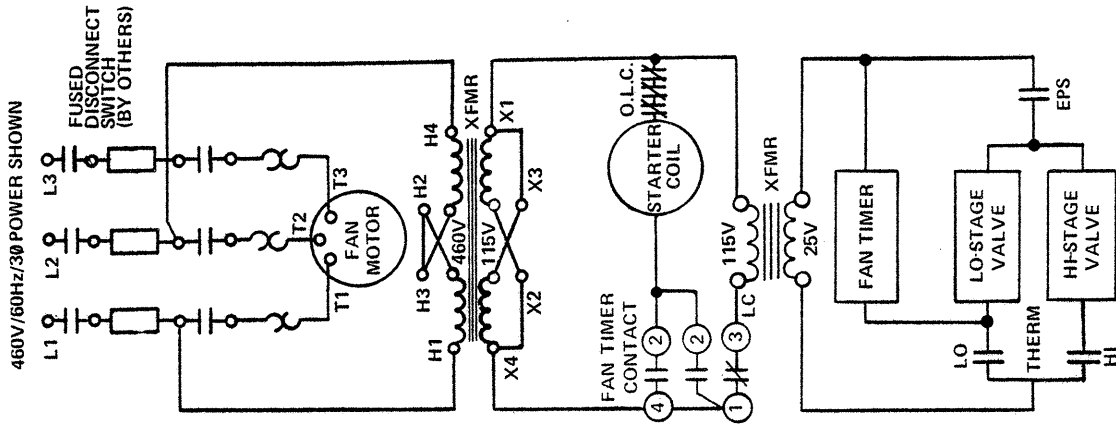
8H5985A217—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, S-W switch, low voltage controlled power venter, three phase. Control codes 18, 19, 86, 87.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



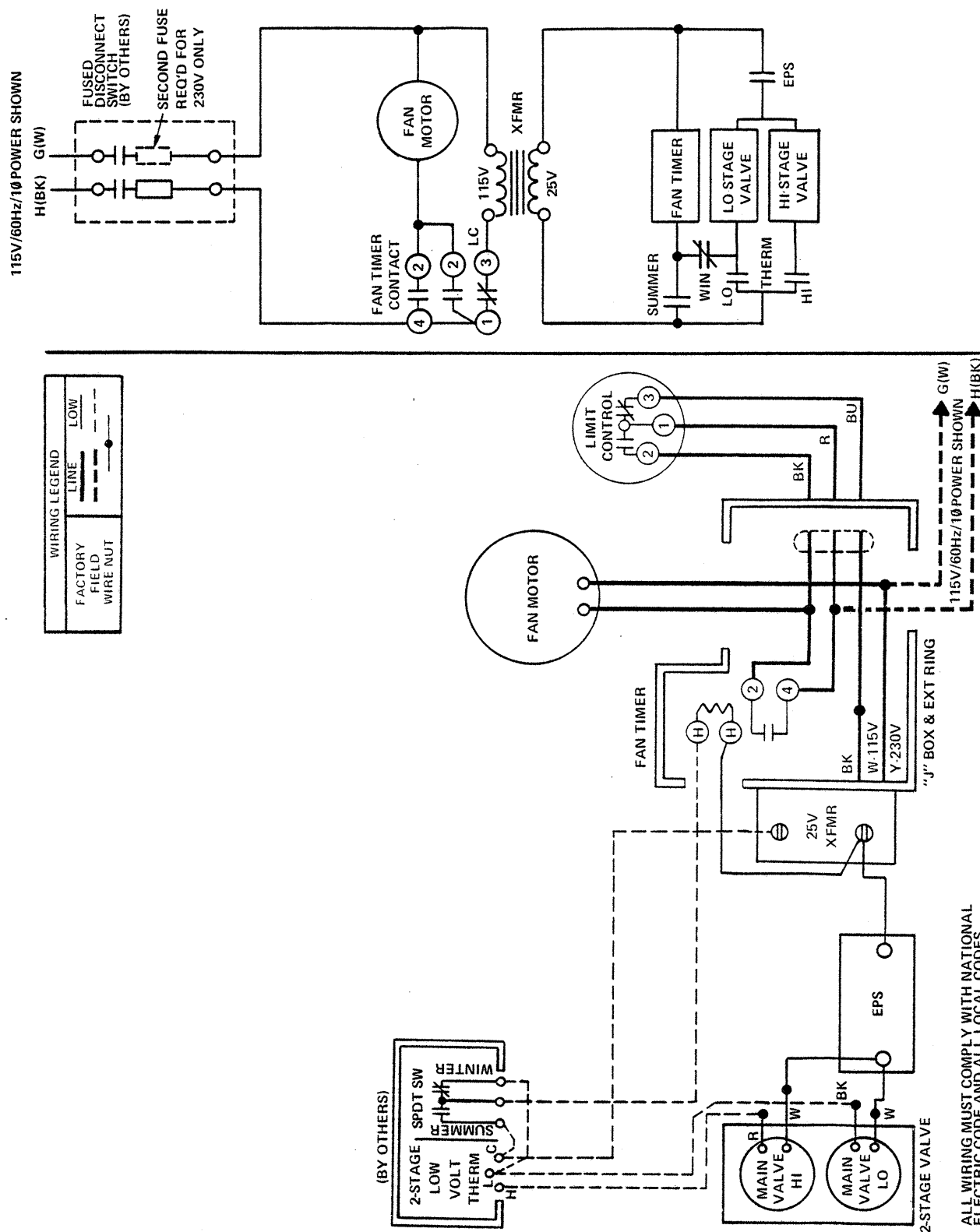
8H5985A157—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, single phase. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

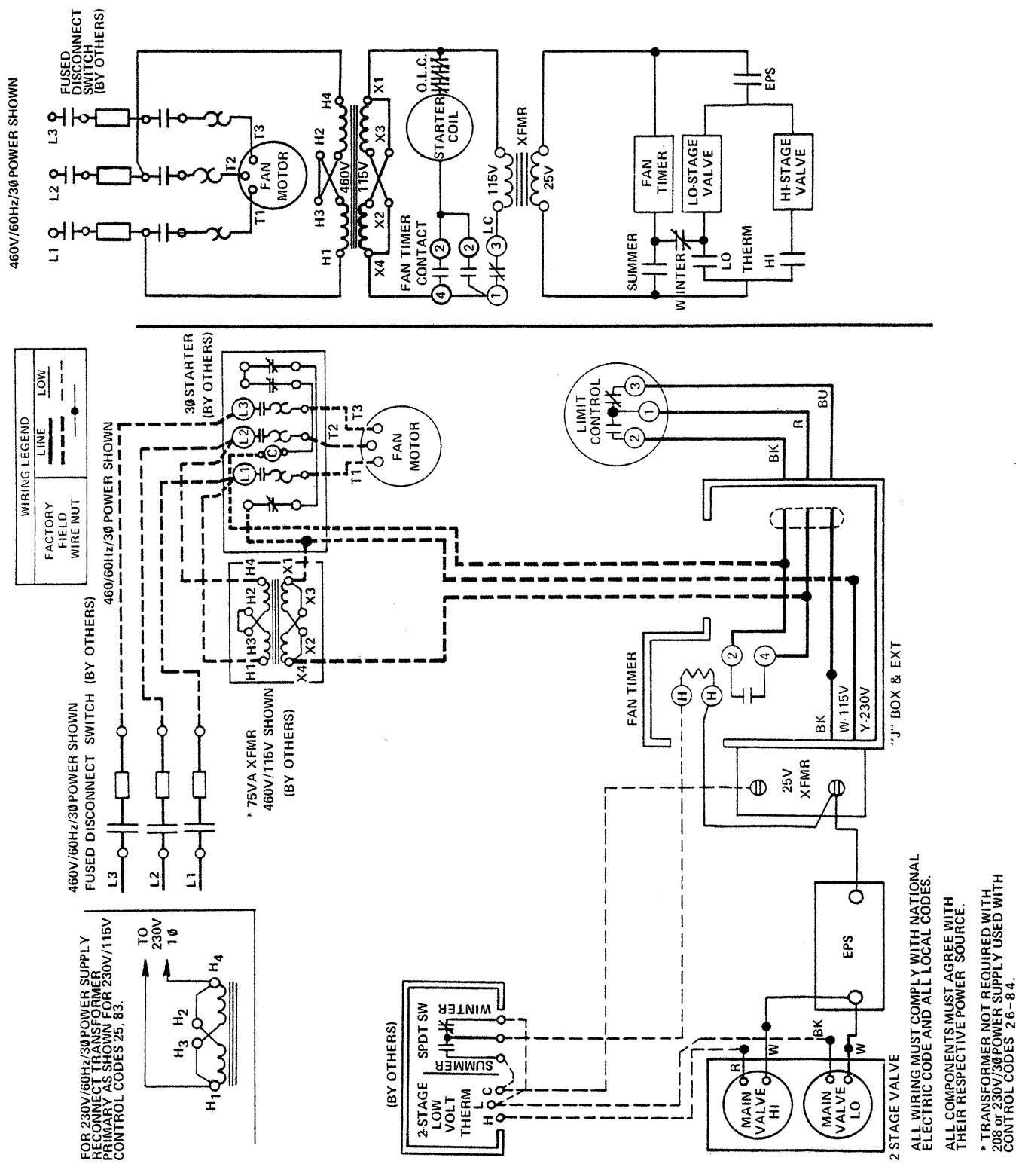


8H5985A227—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, three phase. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

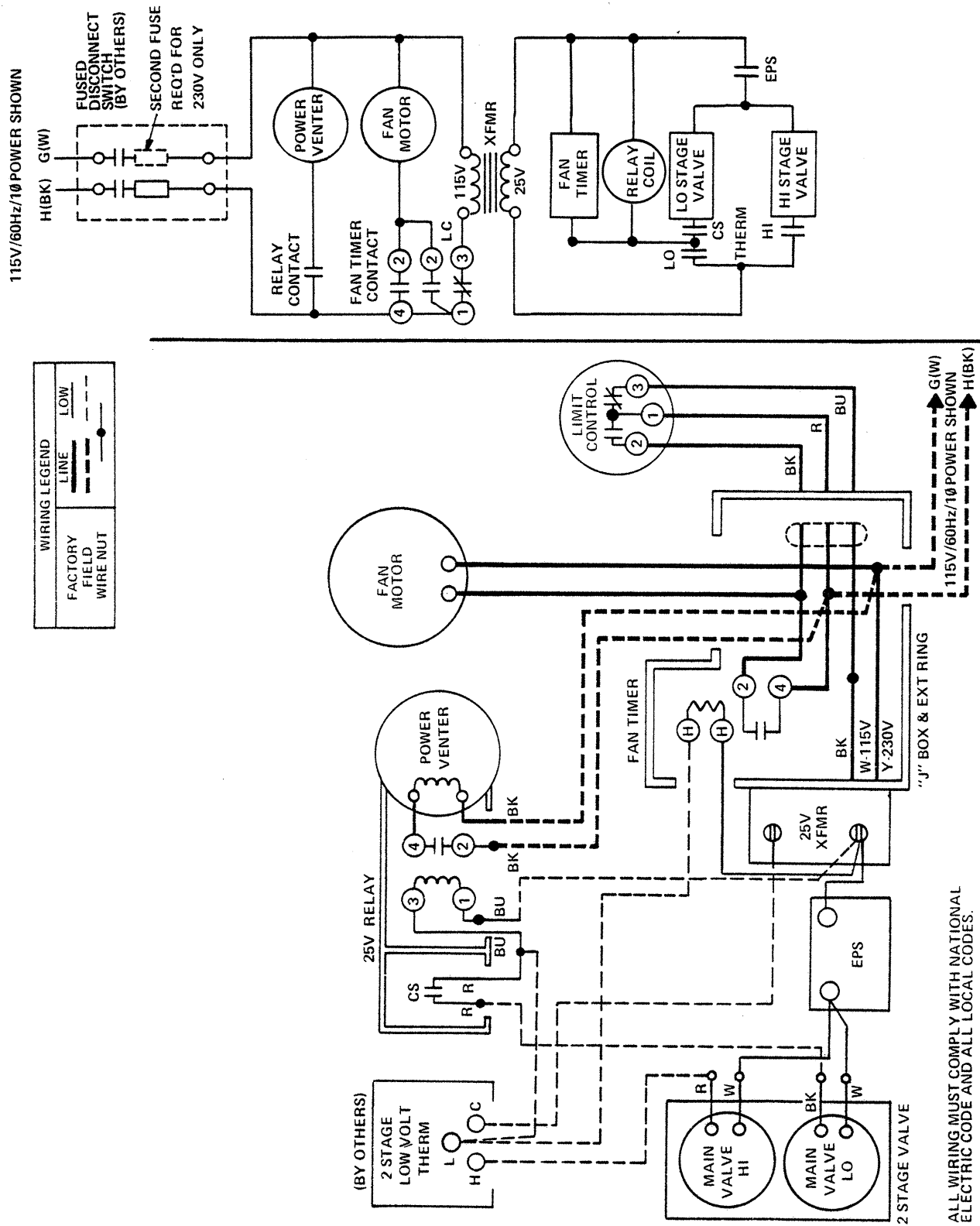


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A229—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, S-W switch, three phase. Control codes 25, 26, 83, 84.

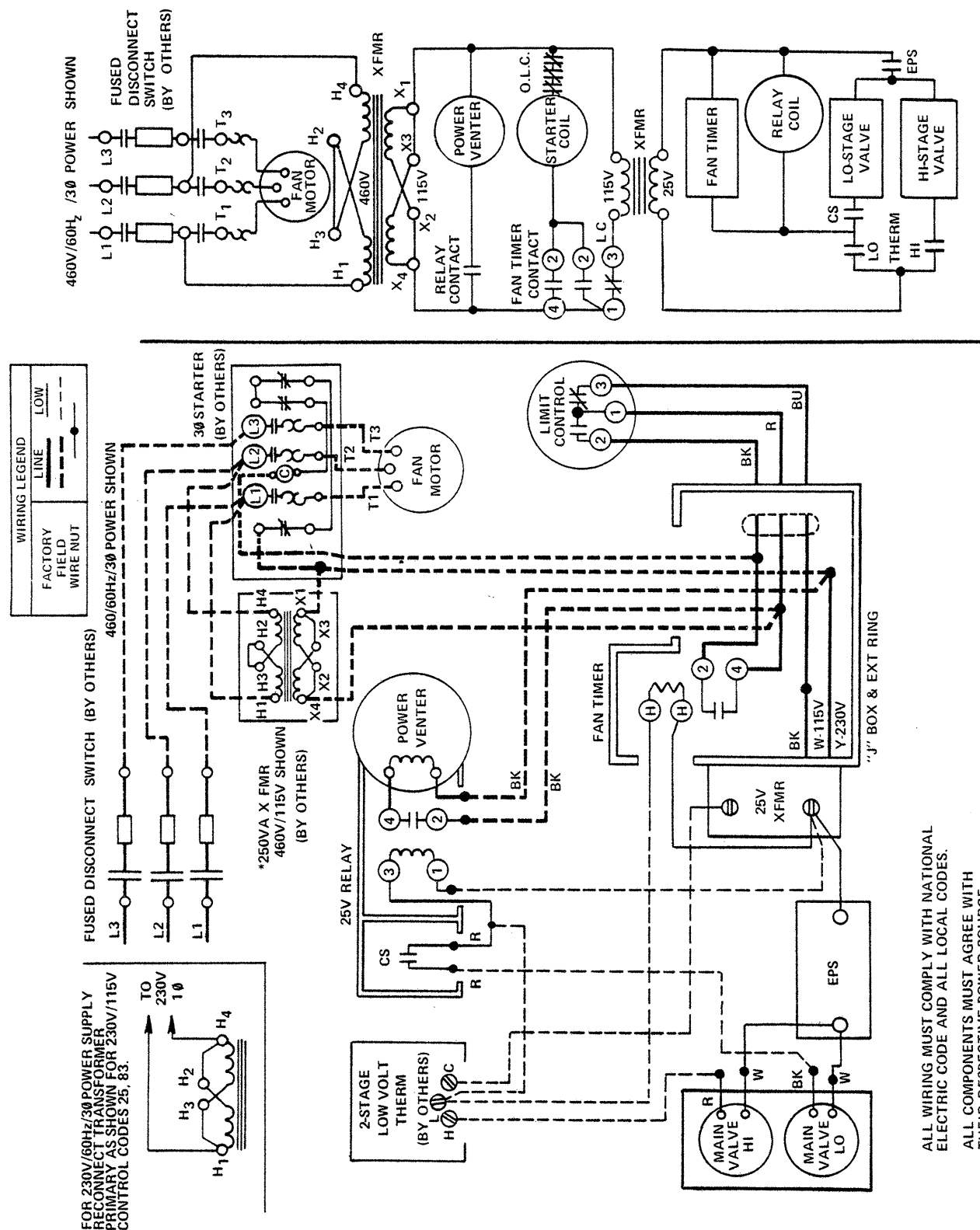
WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



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ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

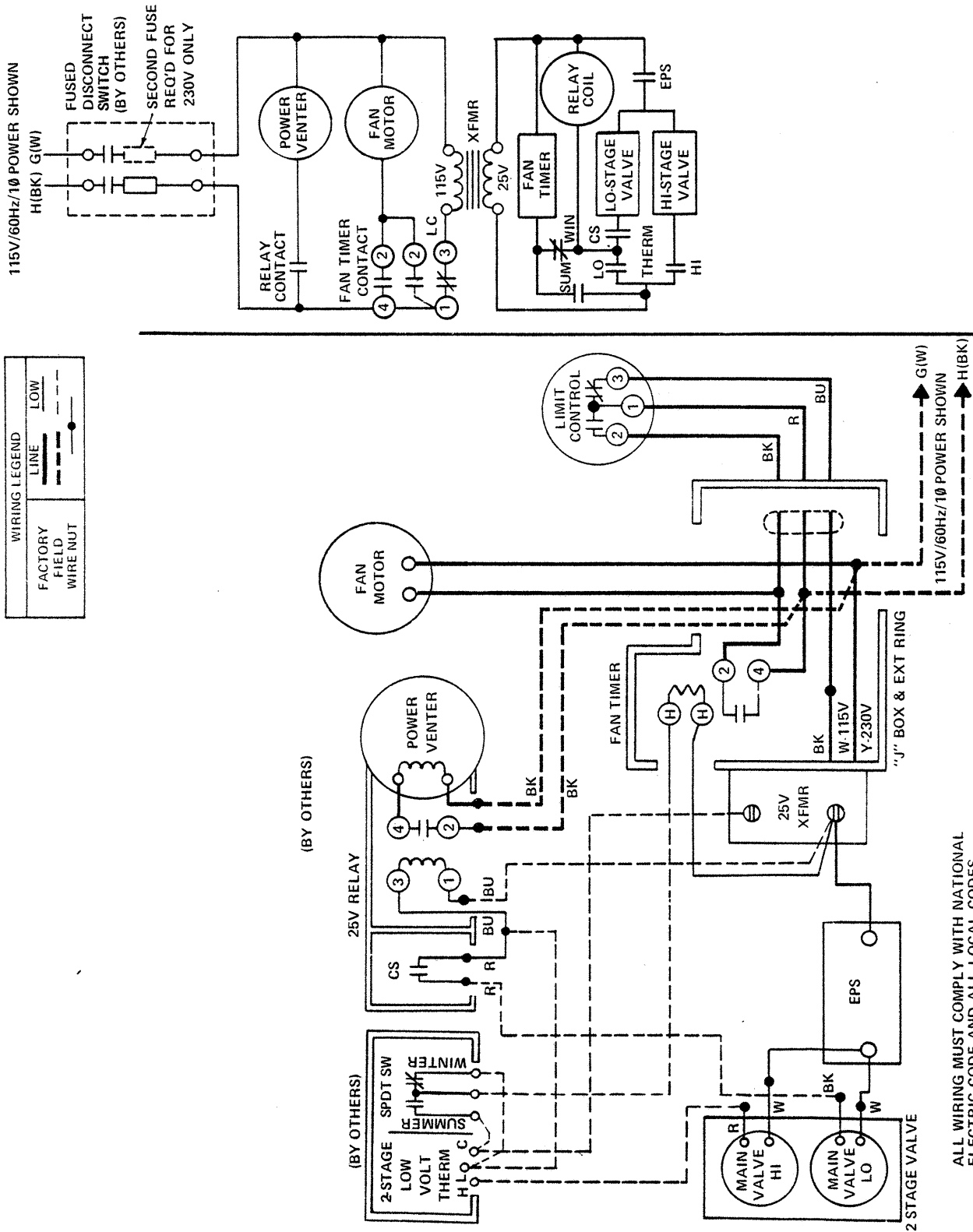
8H5985A219—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter, single phase. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



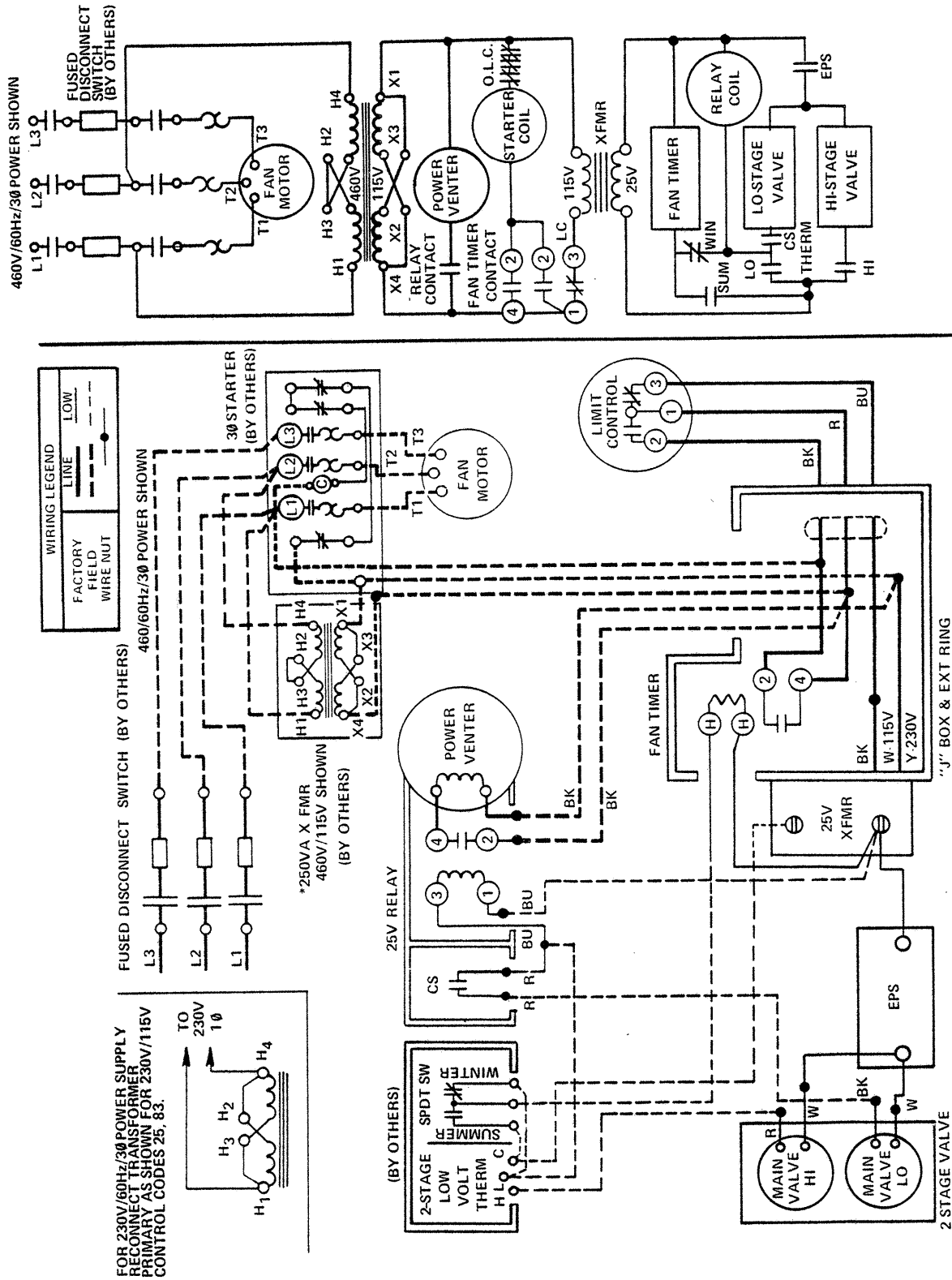
8H5985A228—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, low voltage controlled power vent, three phase. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A220—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, S-W switch, low voltage controlled power venter. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



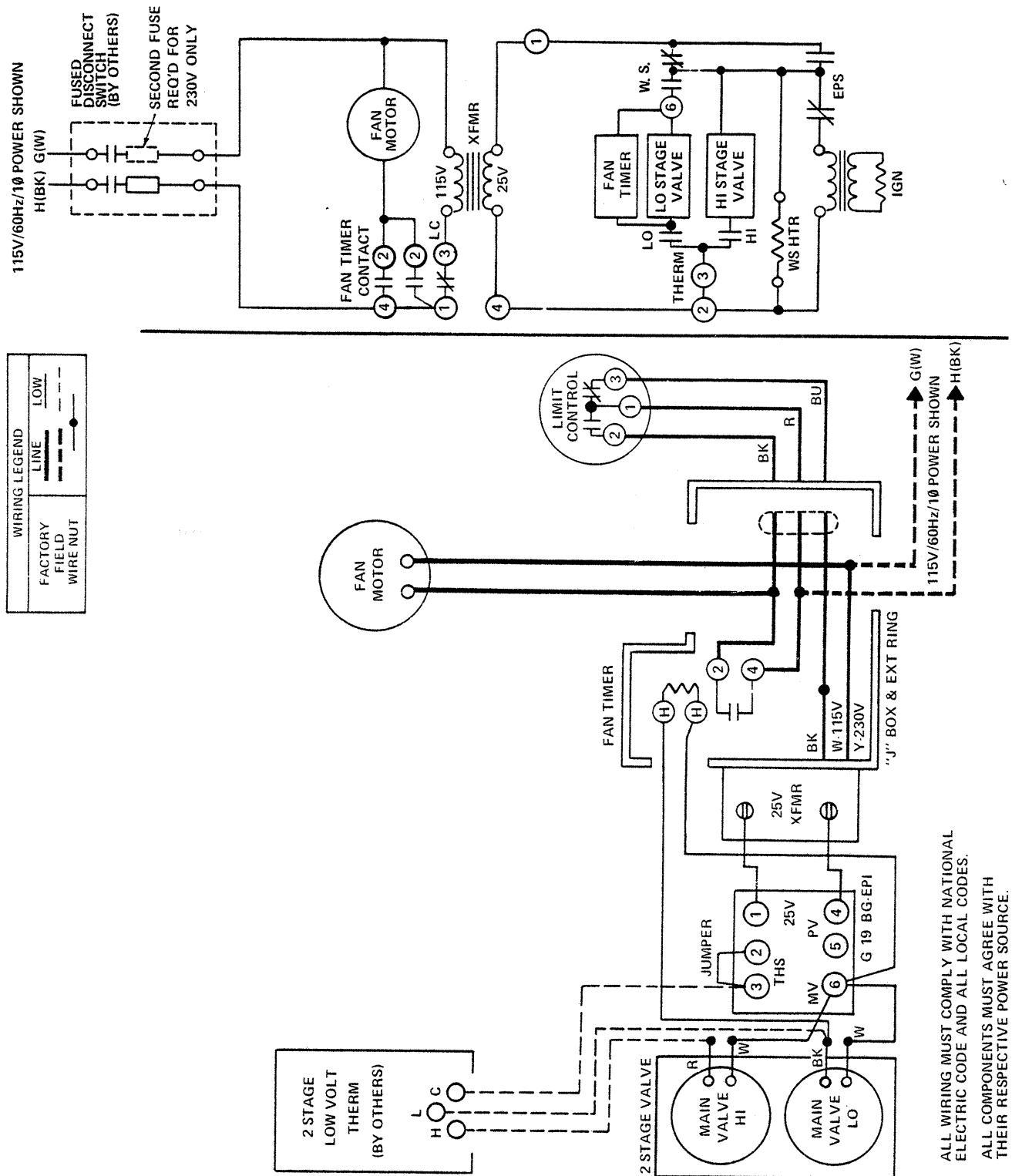
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

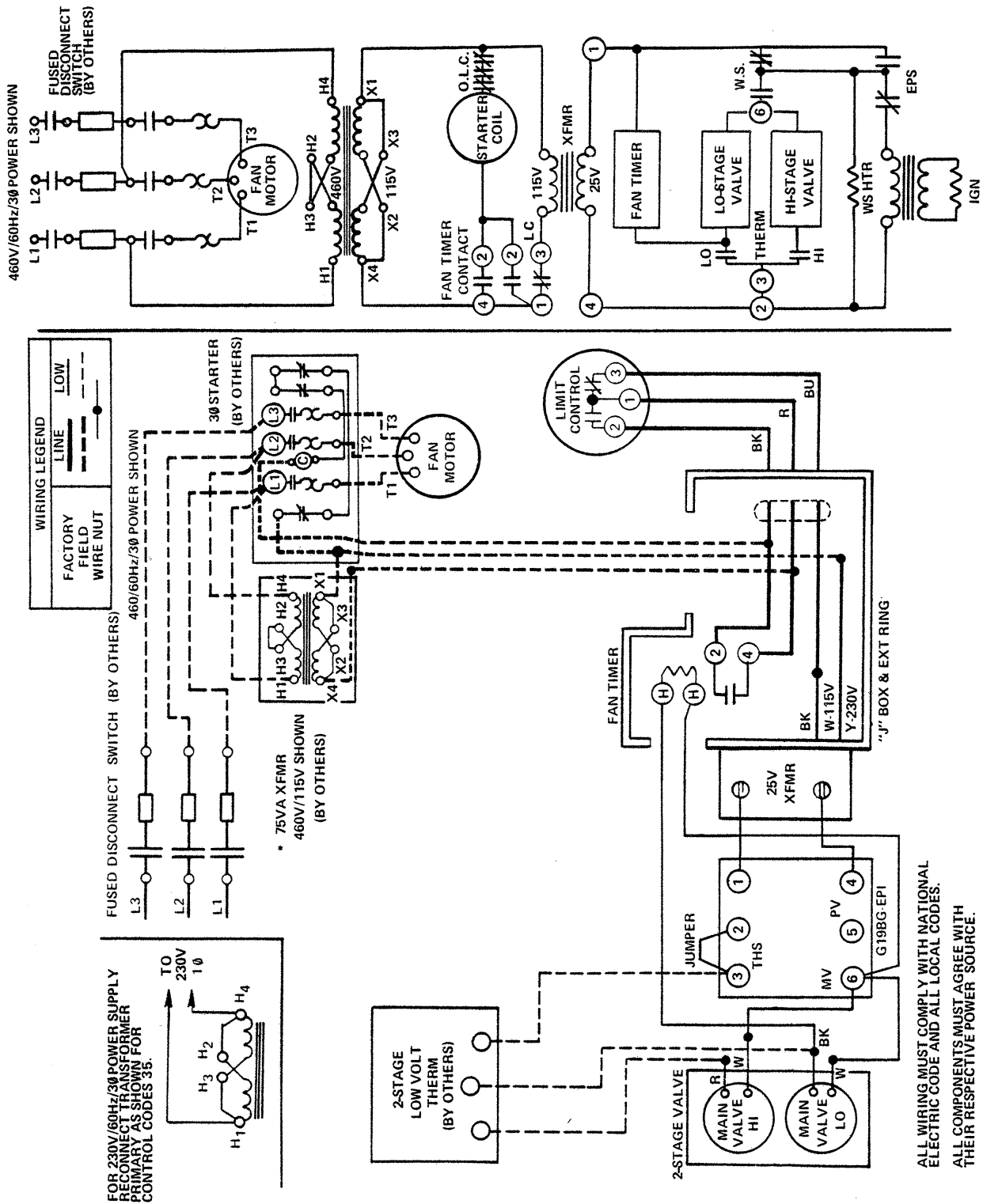
* TRANSFORMER NOT REQUIRED WITH 208 or 230V/30 POWER SUPPLY USED WITH CONTROL CODES 26-84 AND PV-224 POWER VENTER

8H5985A230 — 2-stage gas valve, fan time delay, 2-stage low voltage thermostat, S-W switch, low voltage controlled power venter, three phase. Control codes 25, 26, 83, 84.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

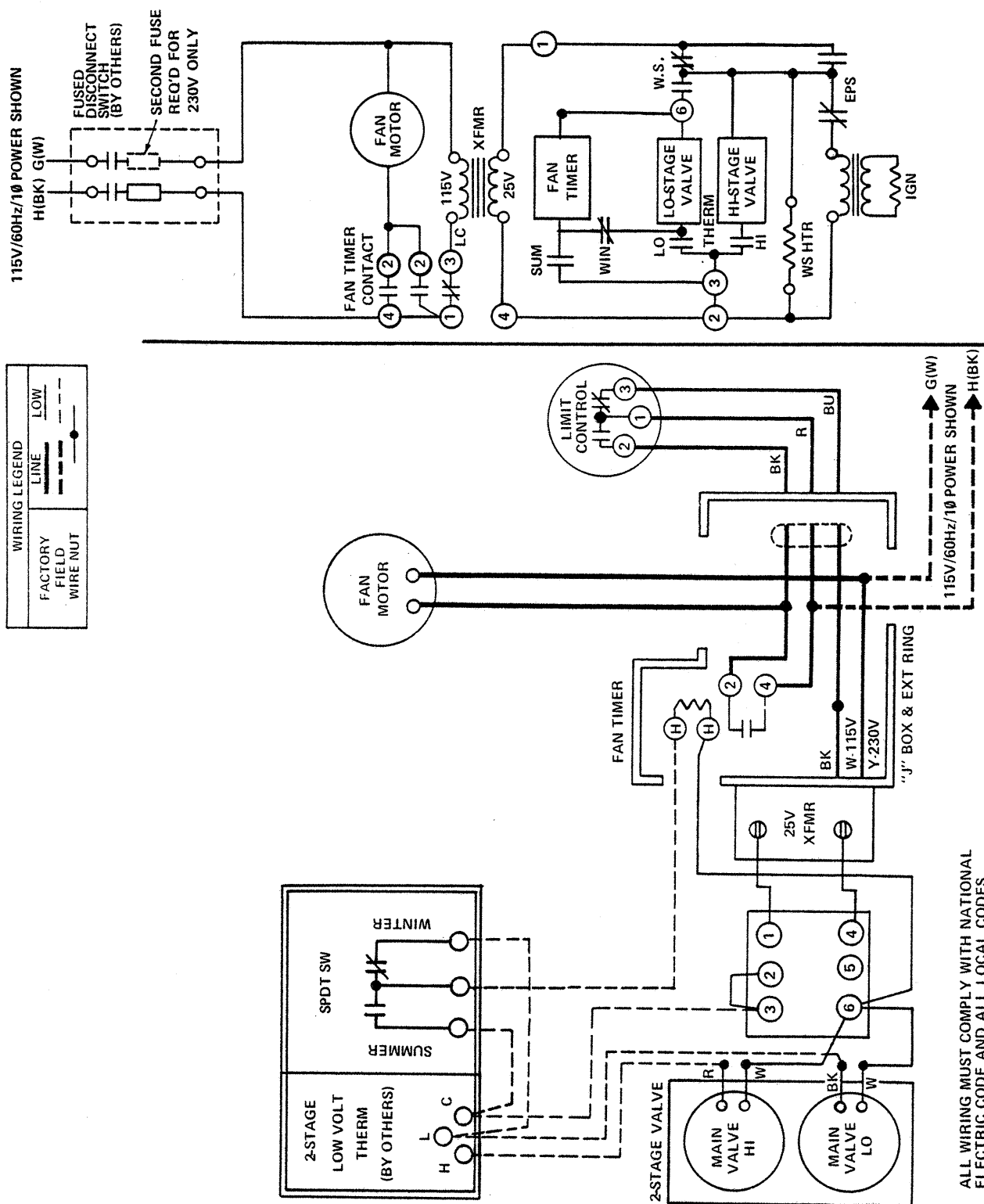


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A231—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, three phase. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

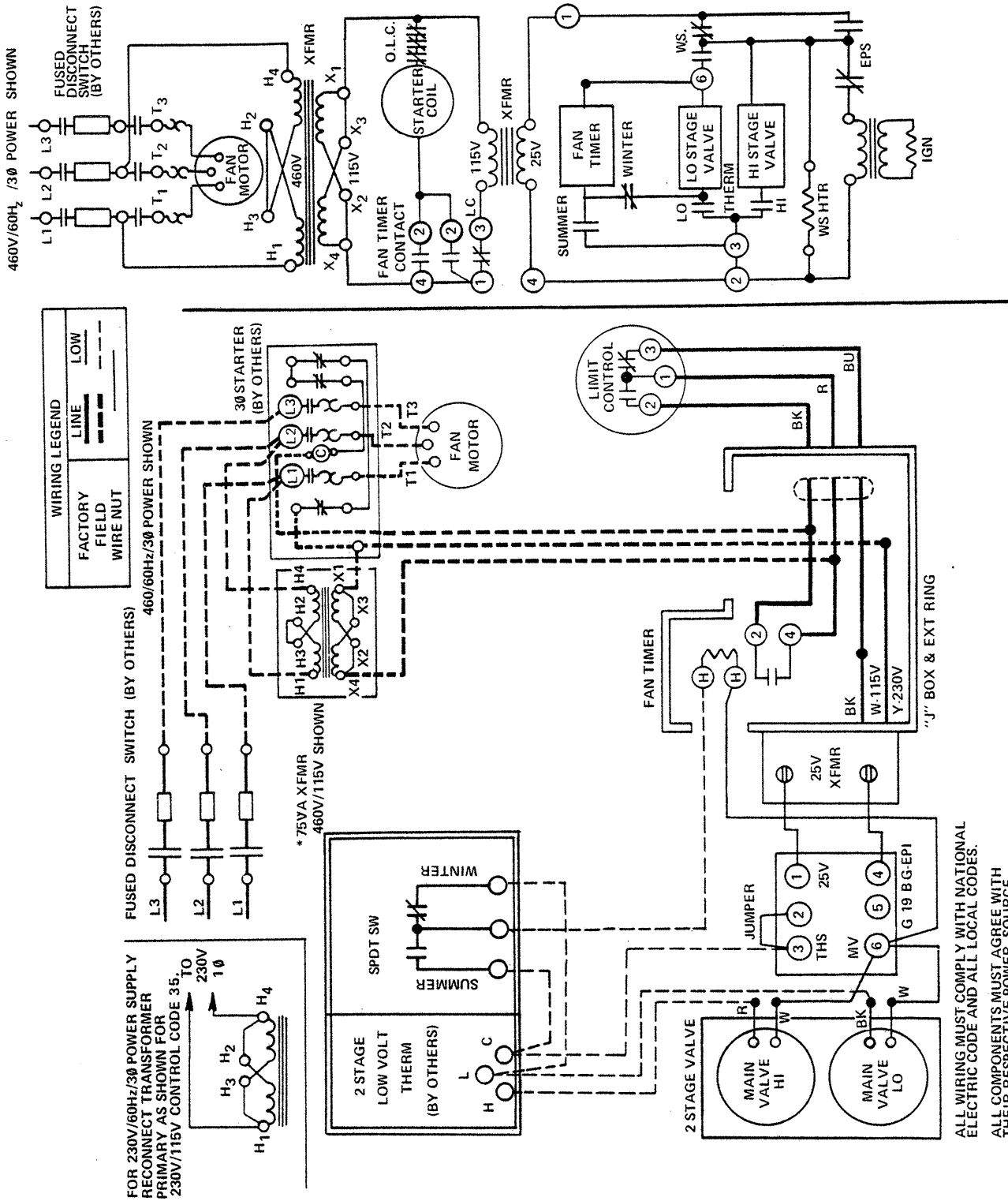


**ALL WIRING MUST COMPLY WITH NATIONAL
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**ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.**

8H5985A221—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, single phase. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

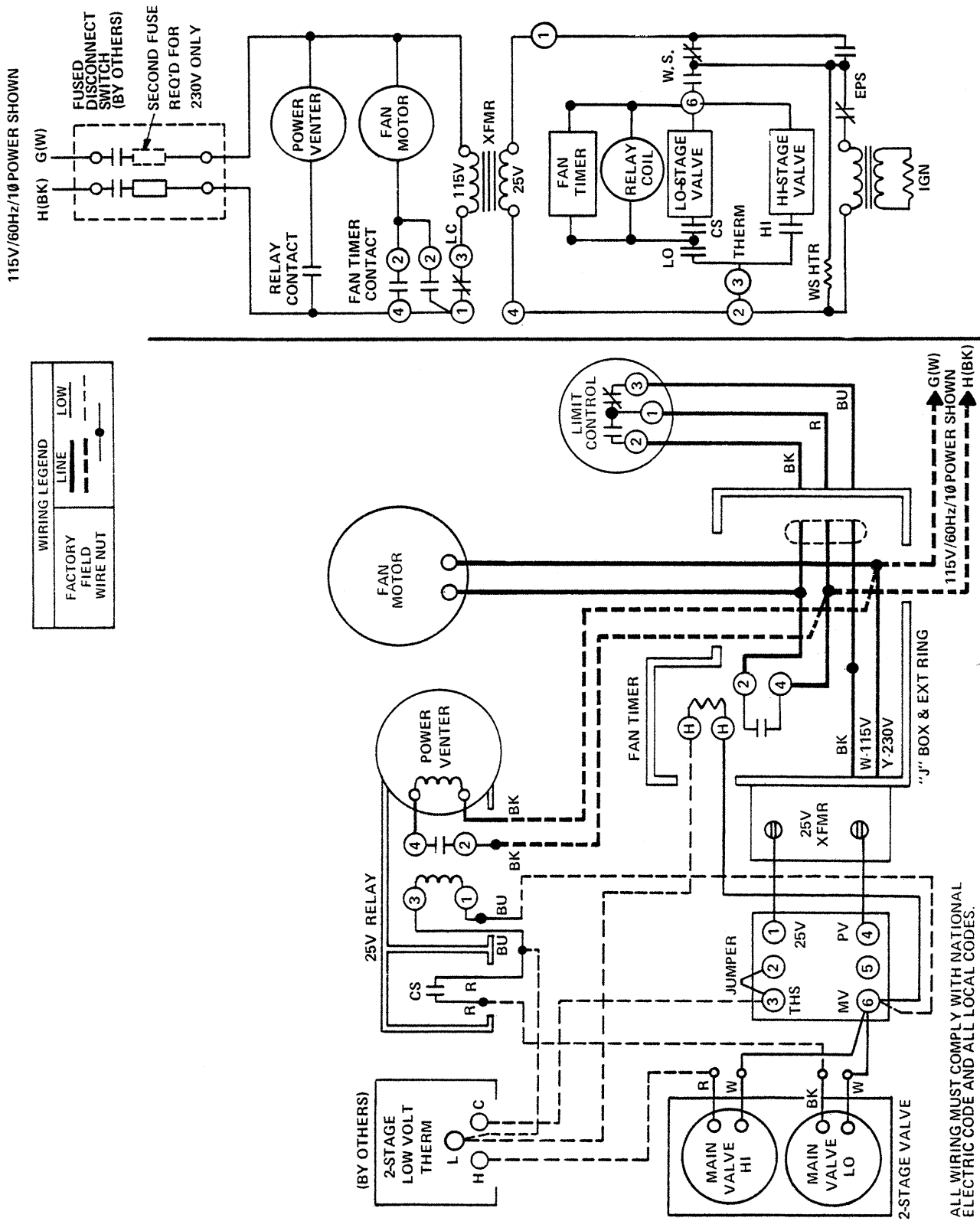


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

*TRANSFORMER NOT REQUIRED WITH 208 OR 230 V/3 Ø POWER SUPPLY USED WITH CONTROL CODES 36

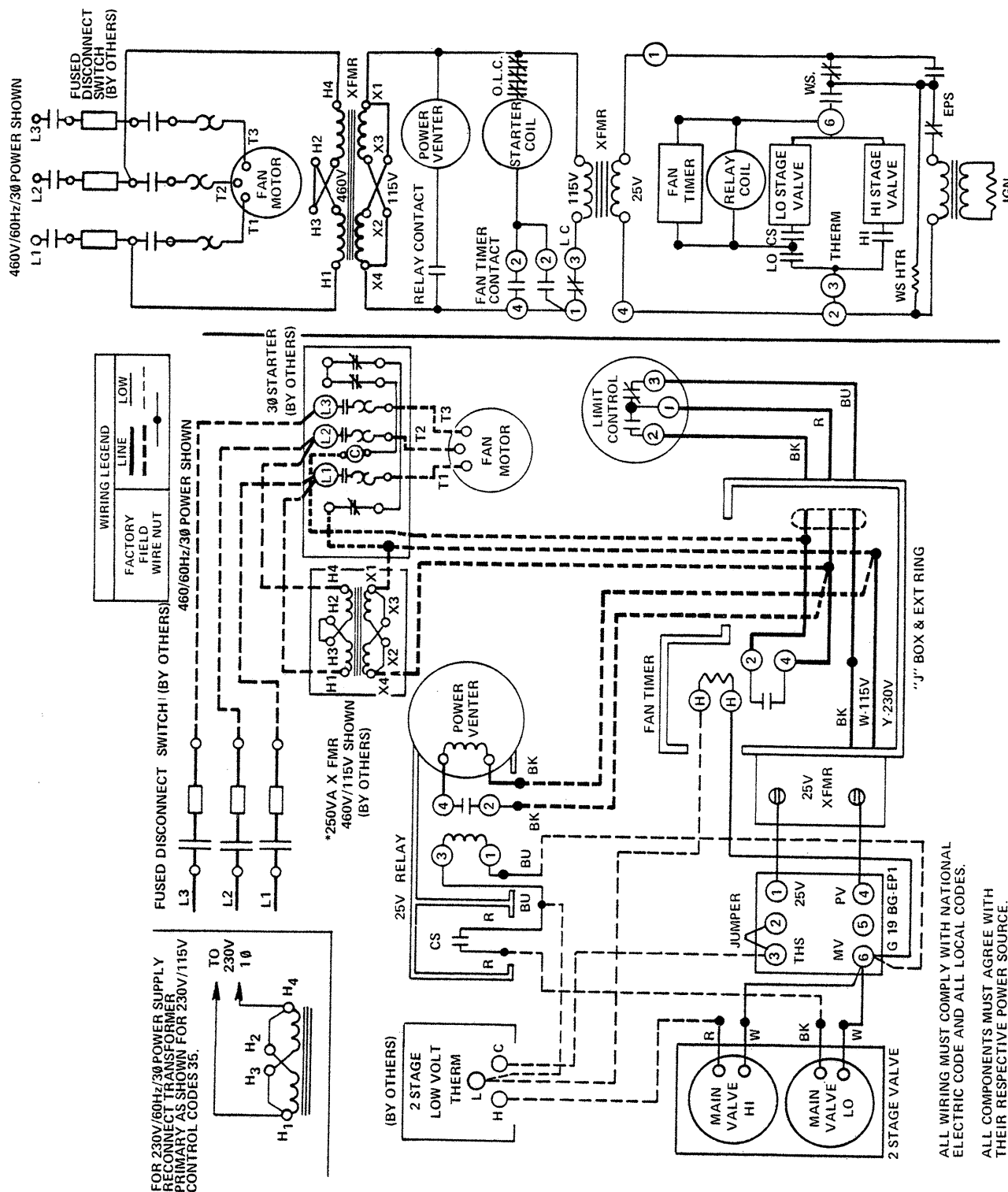
8H5985A233—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, three phase. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



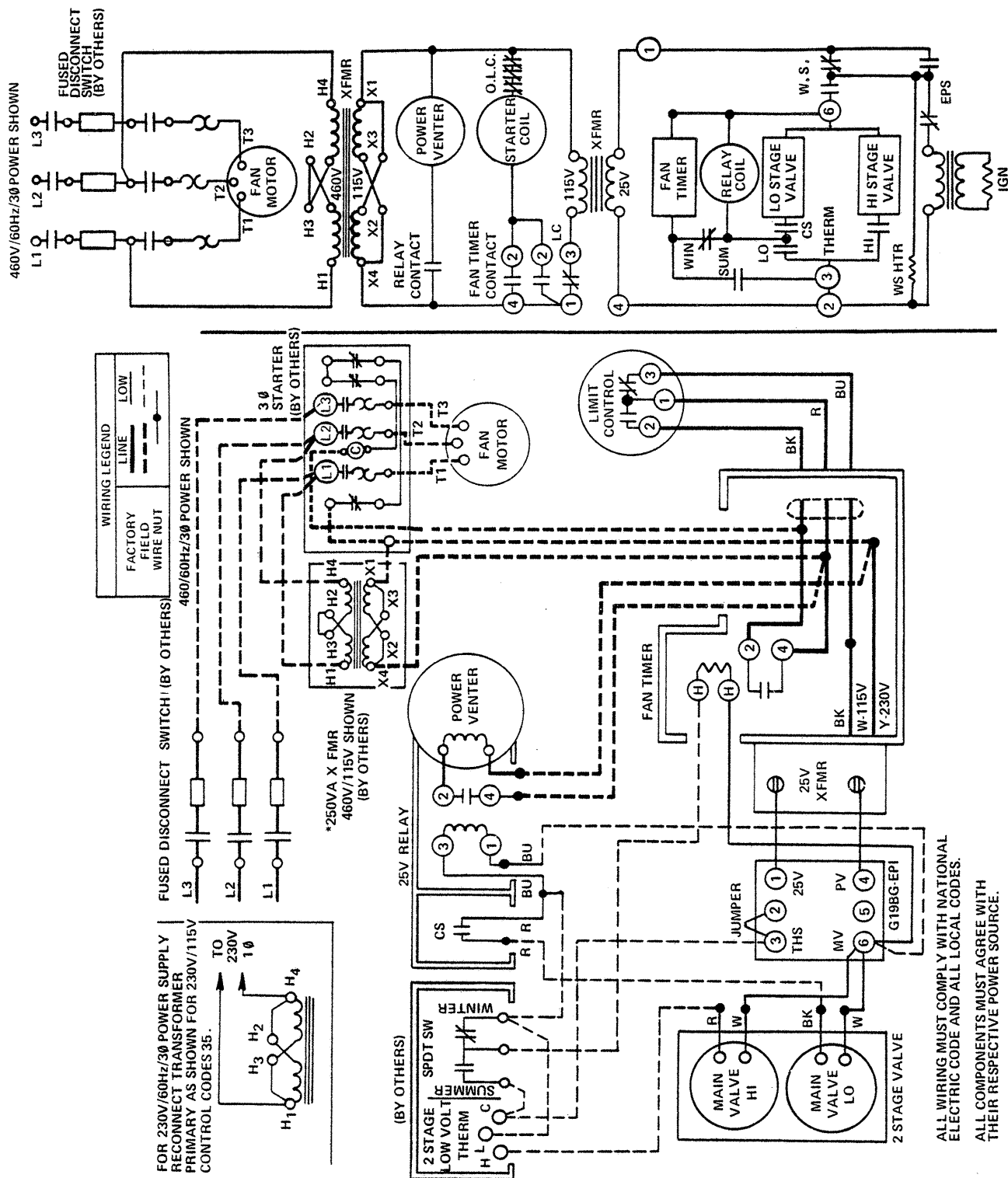
8H5985A222 —2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



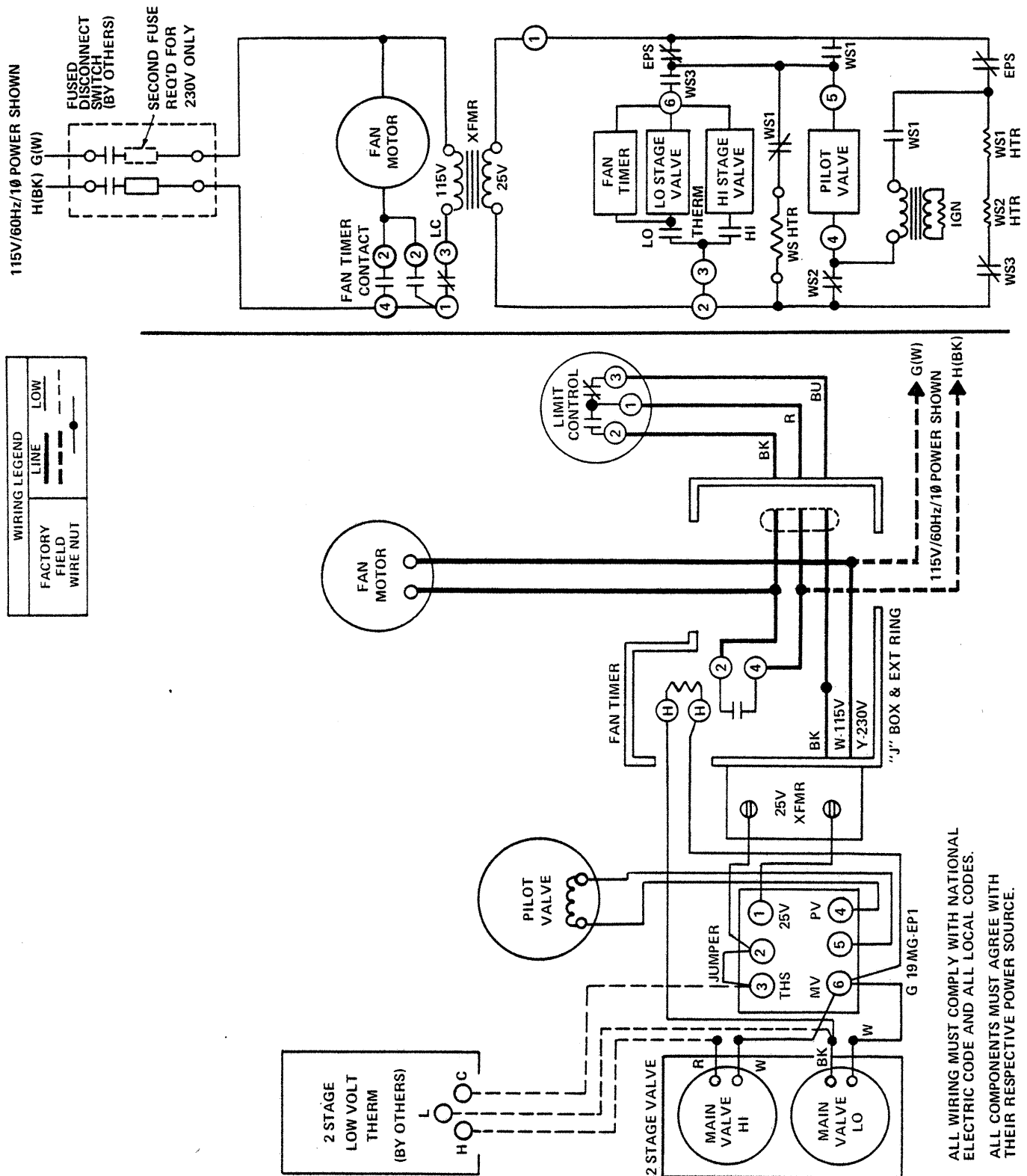
8H5985A232—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter, three phase. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



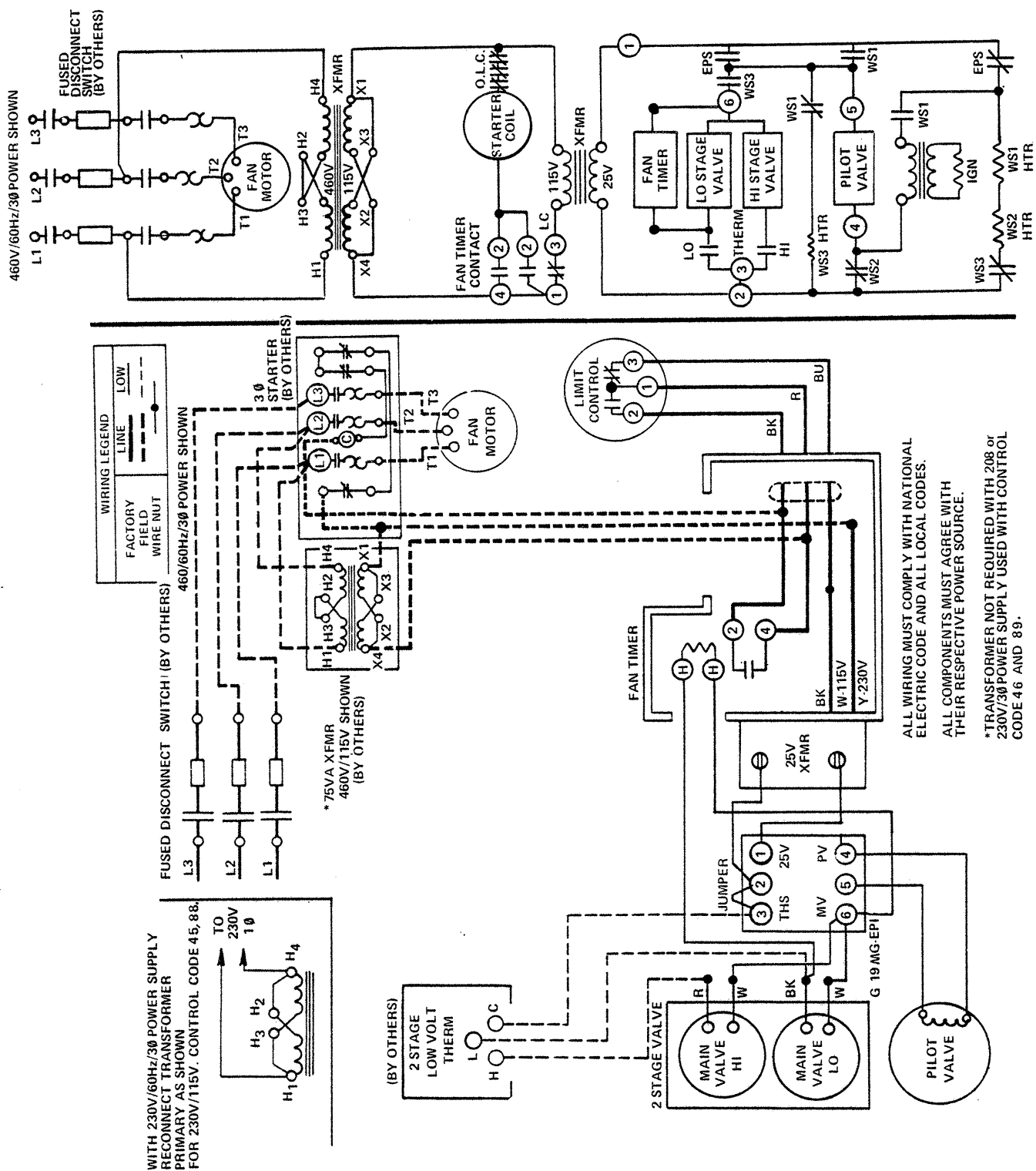
8H5985A234—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power vent, S-W switch, three phase. Control codes 35, 36.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



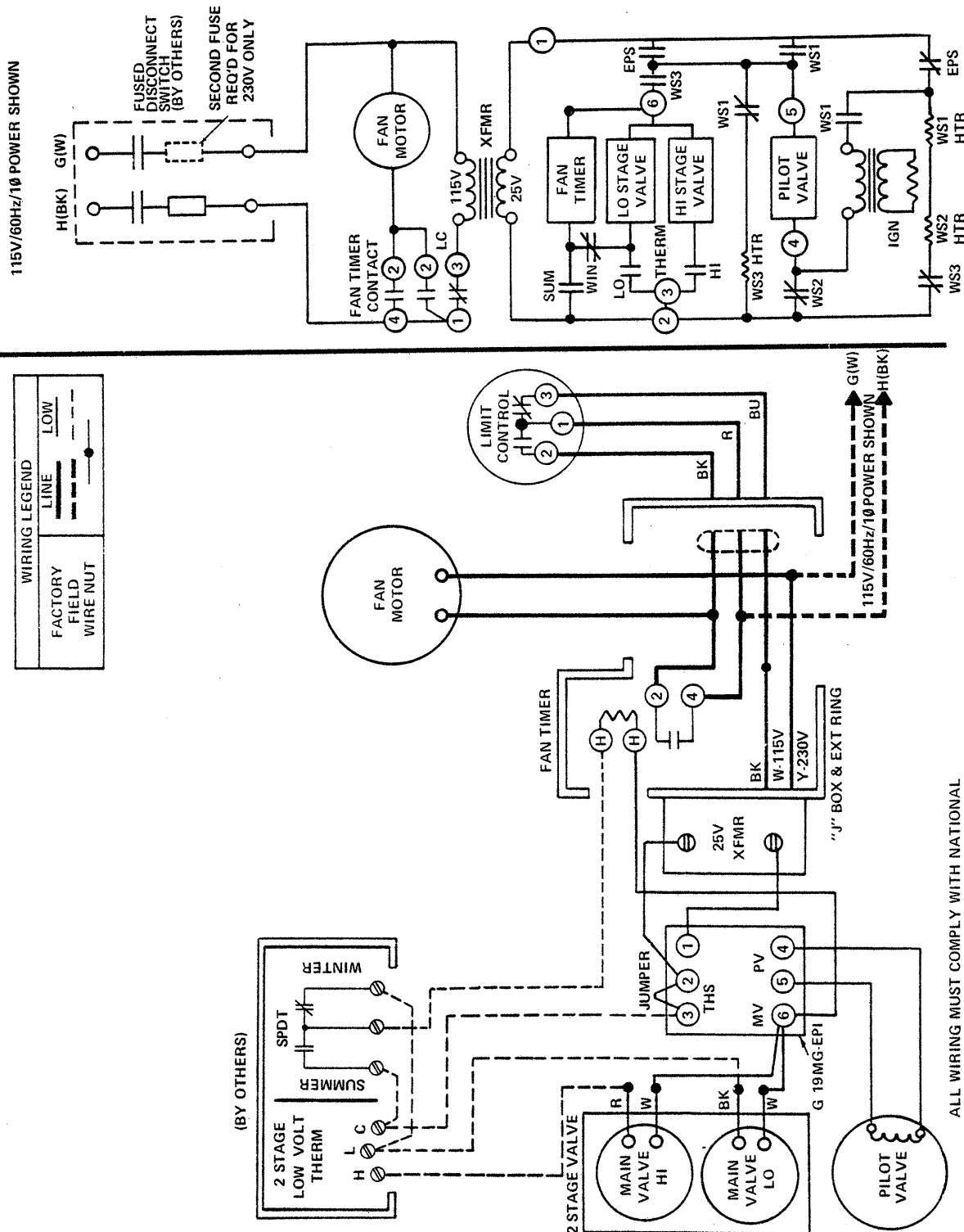
8H5985A 159—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, single phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



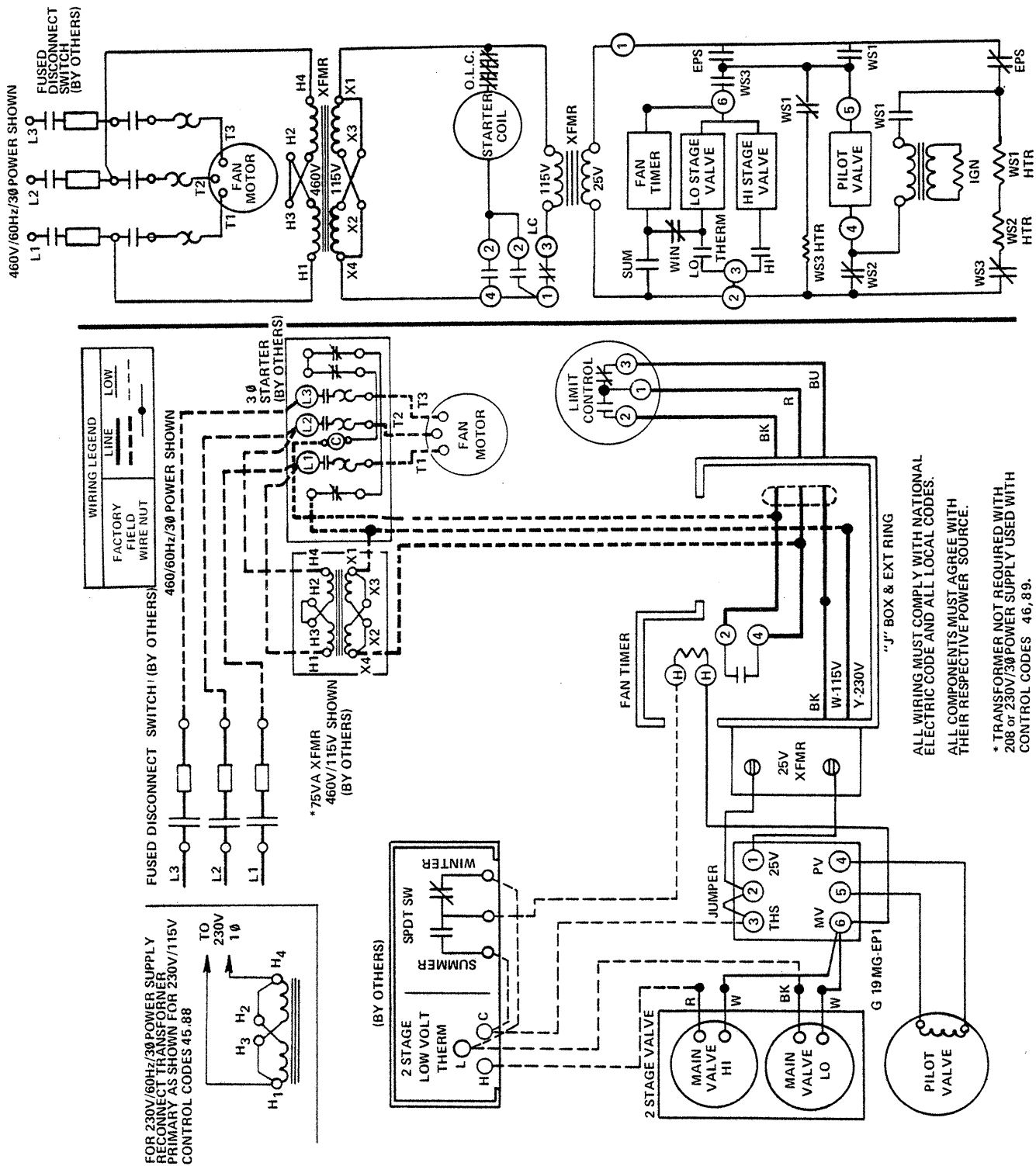
8H5985A235—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, three phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



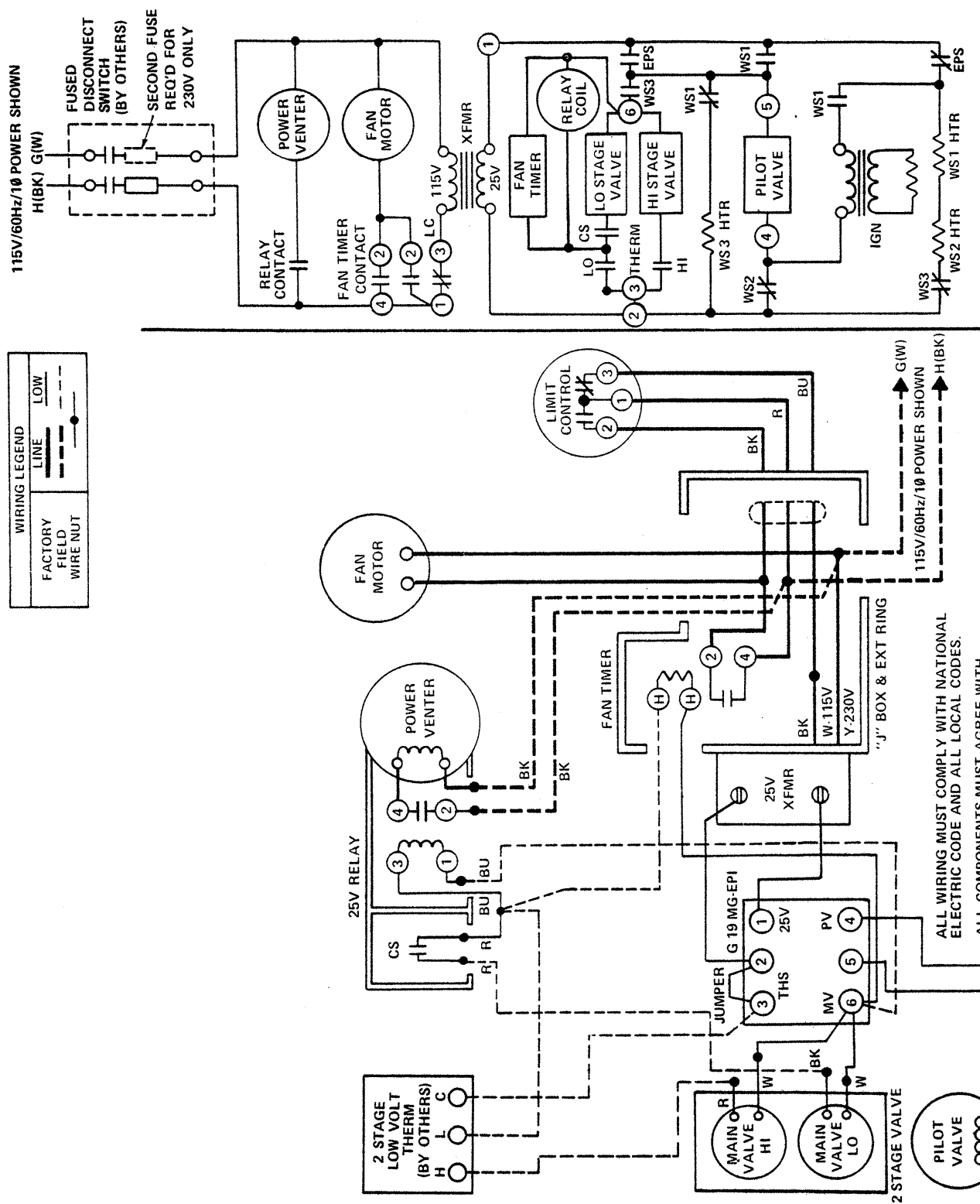
8H5985A224—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, single phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



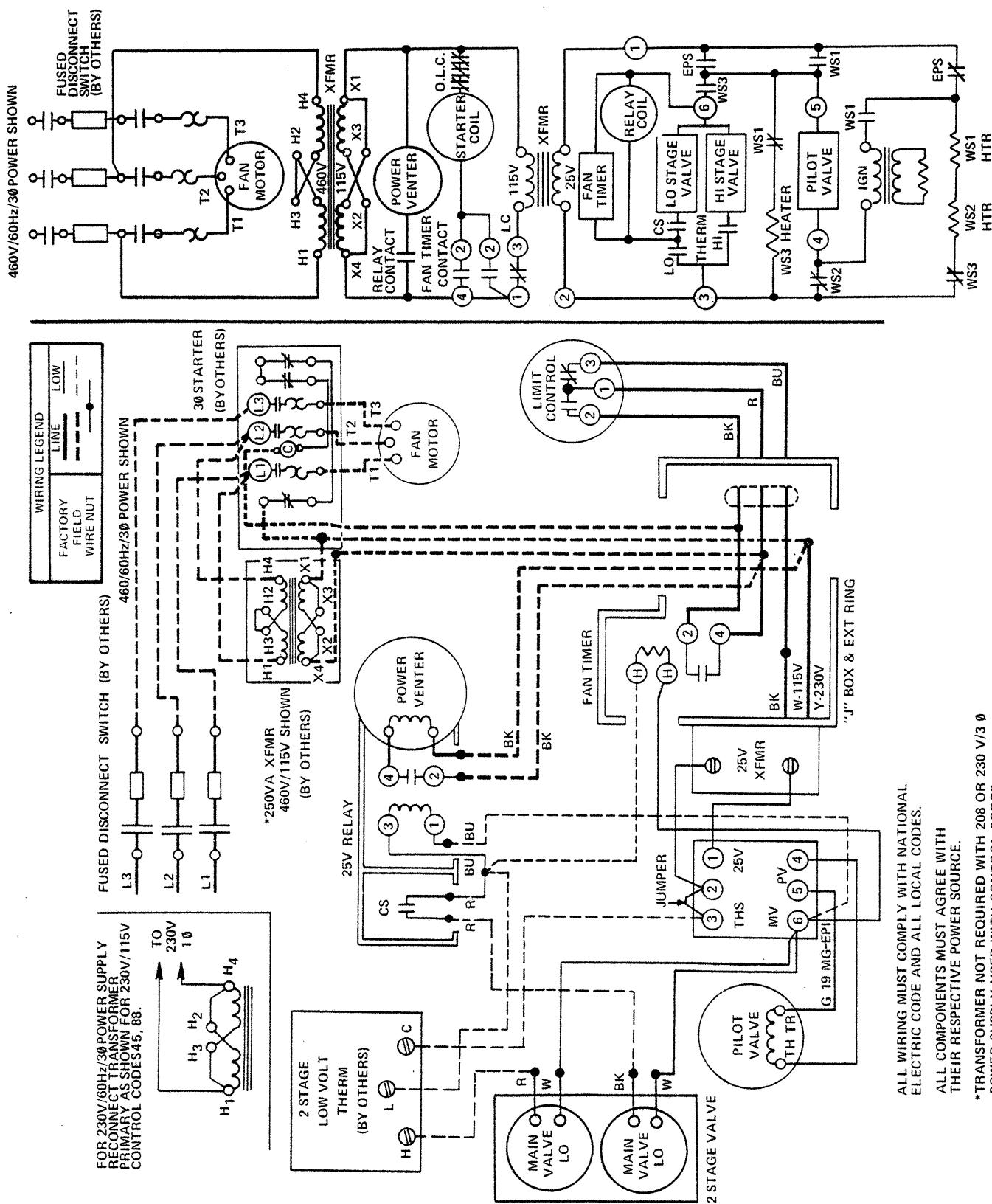
8H5985A237—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, three phase. Control codes 45, 46, 88, 89.

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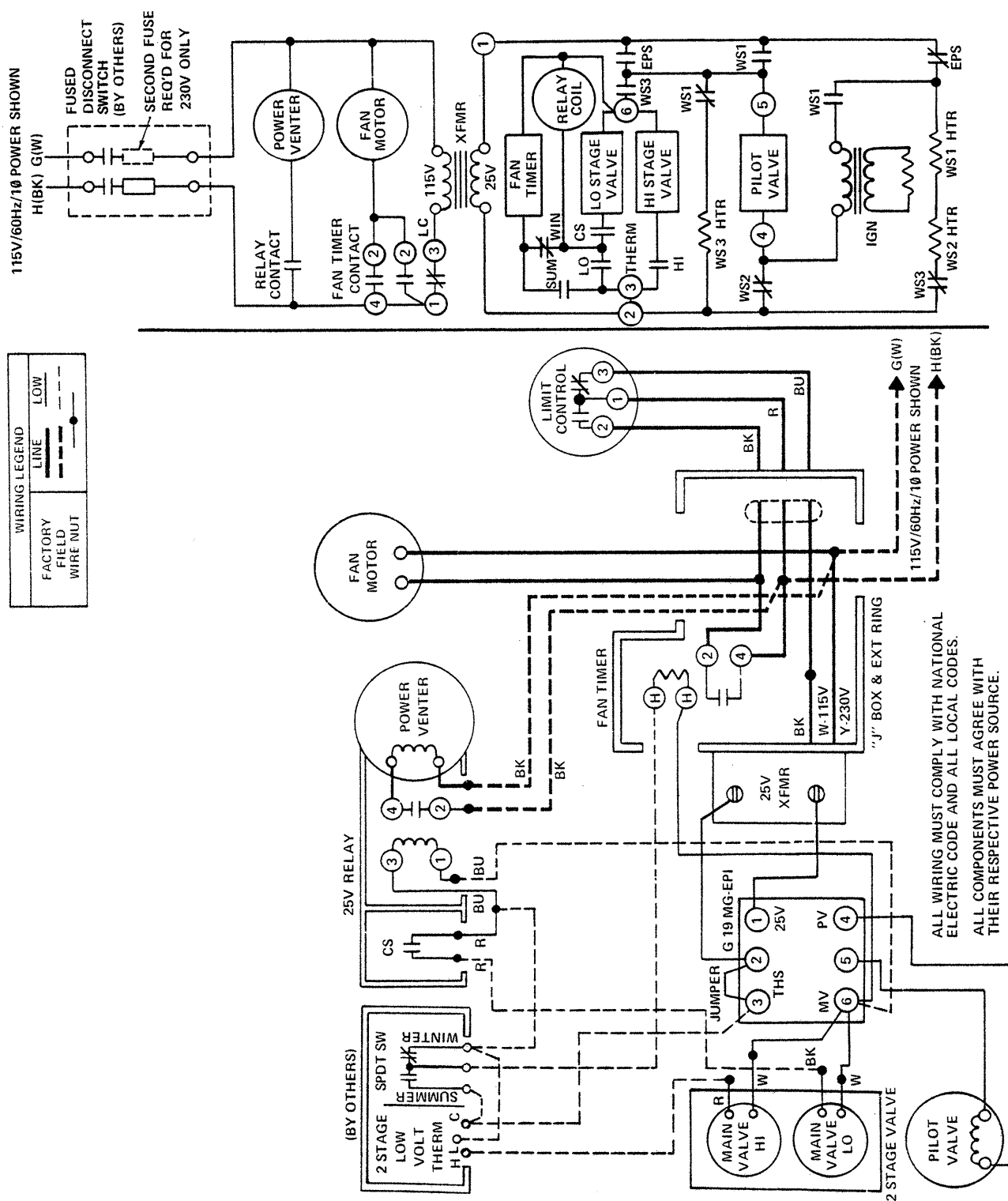
8H5985A225—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter, single phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



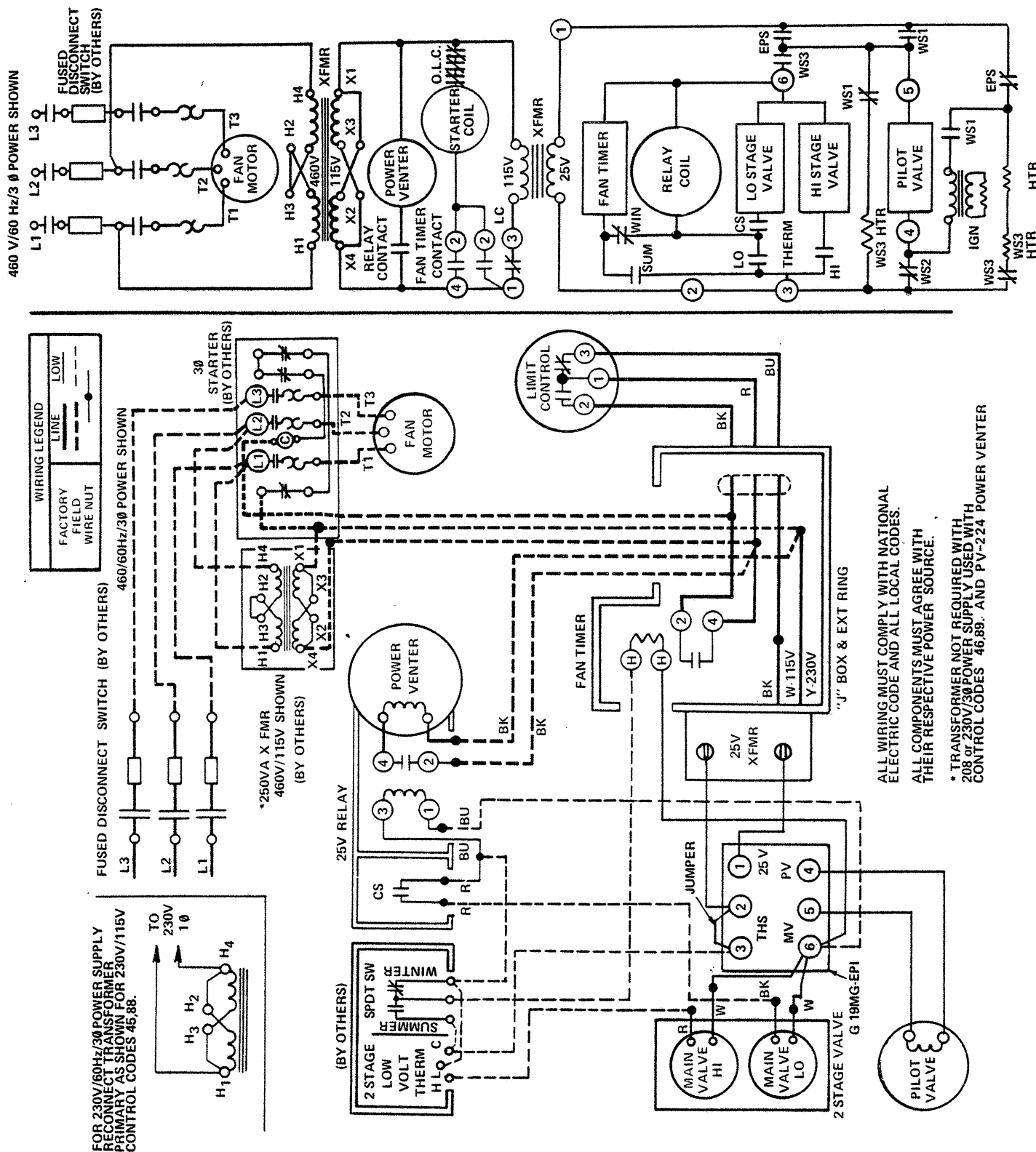
8H5985A236—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter, three phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



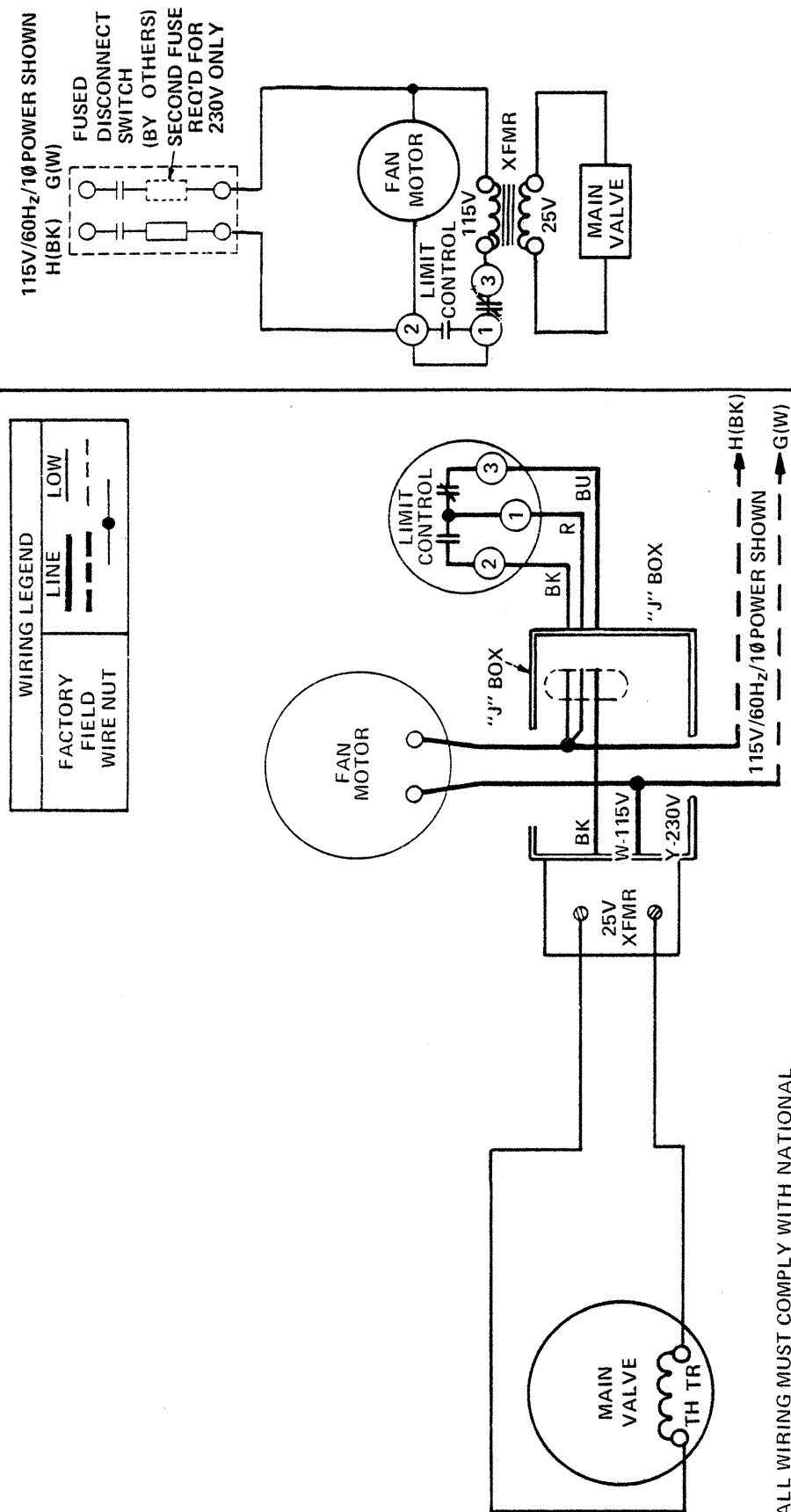
8H5H985A226—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, low voltage controlled power venter, single phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

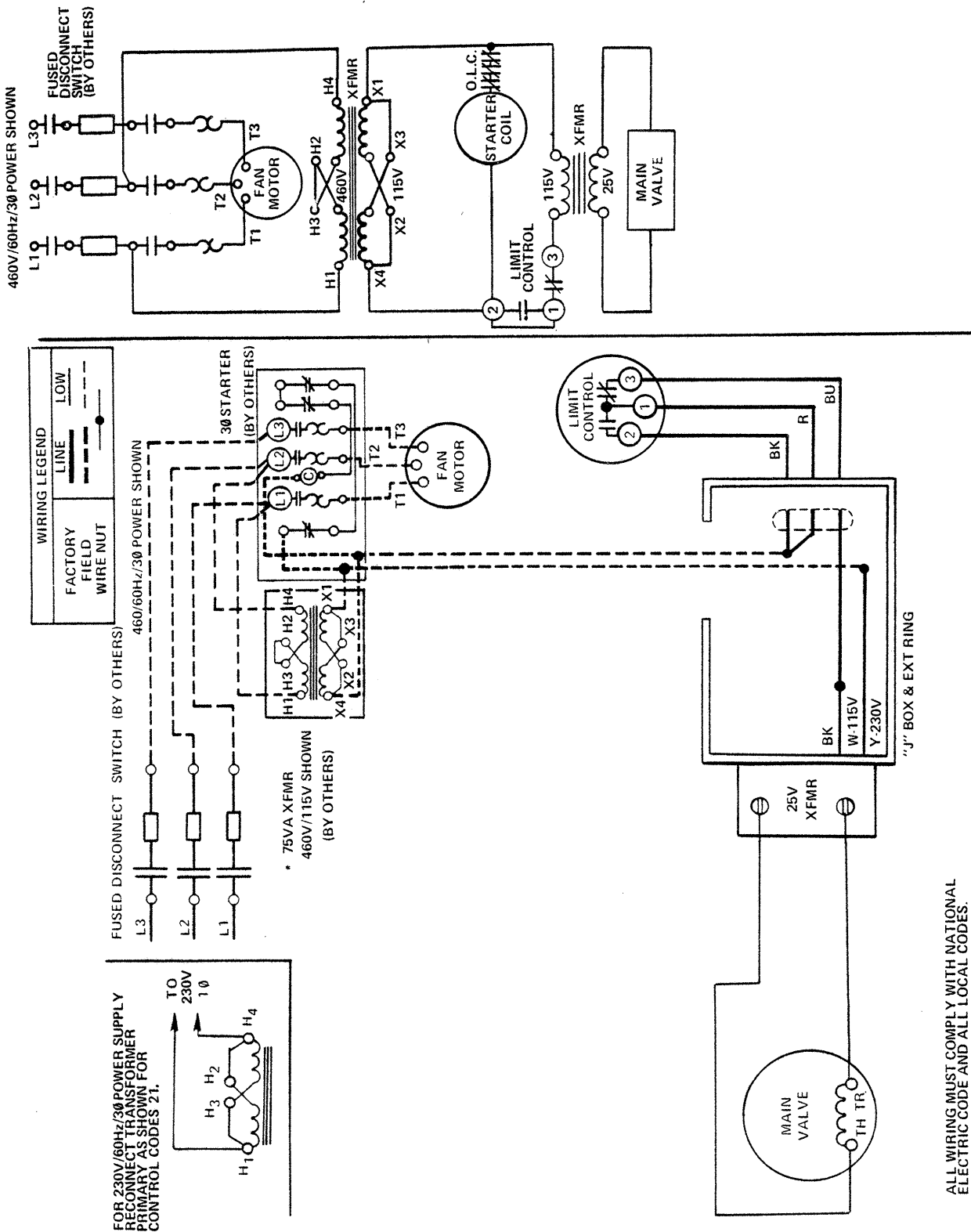


8H5985A238—2-stage gas valve, 100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, S-W switch, three phase. Control codes 45, 46, 88, 89.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



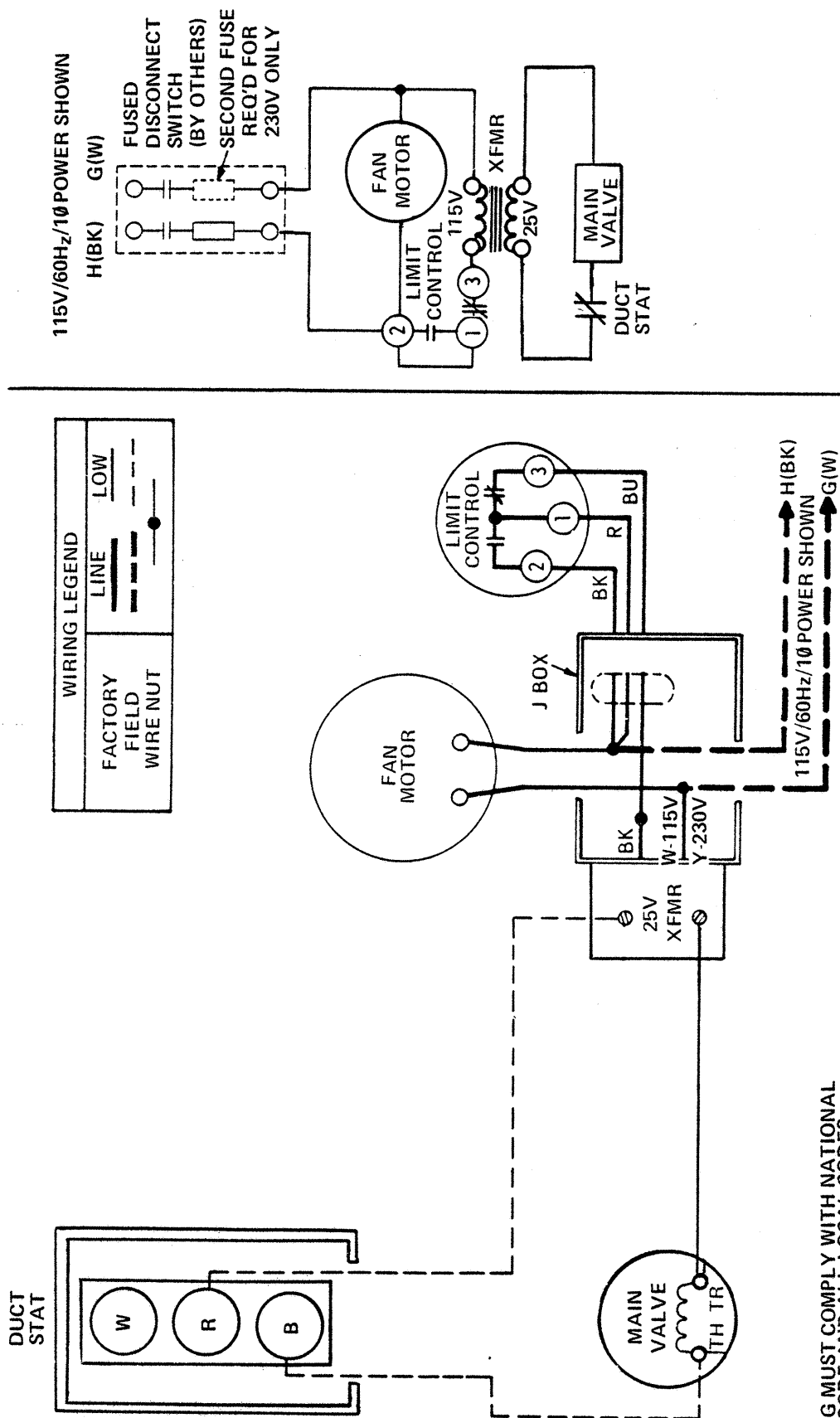
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODE 22

8H5985A176—Straight mechanical modulation—BA-50 thru BA-225, three phase. Control codes 21, 22.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

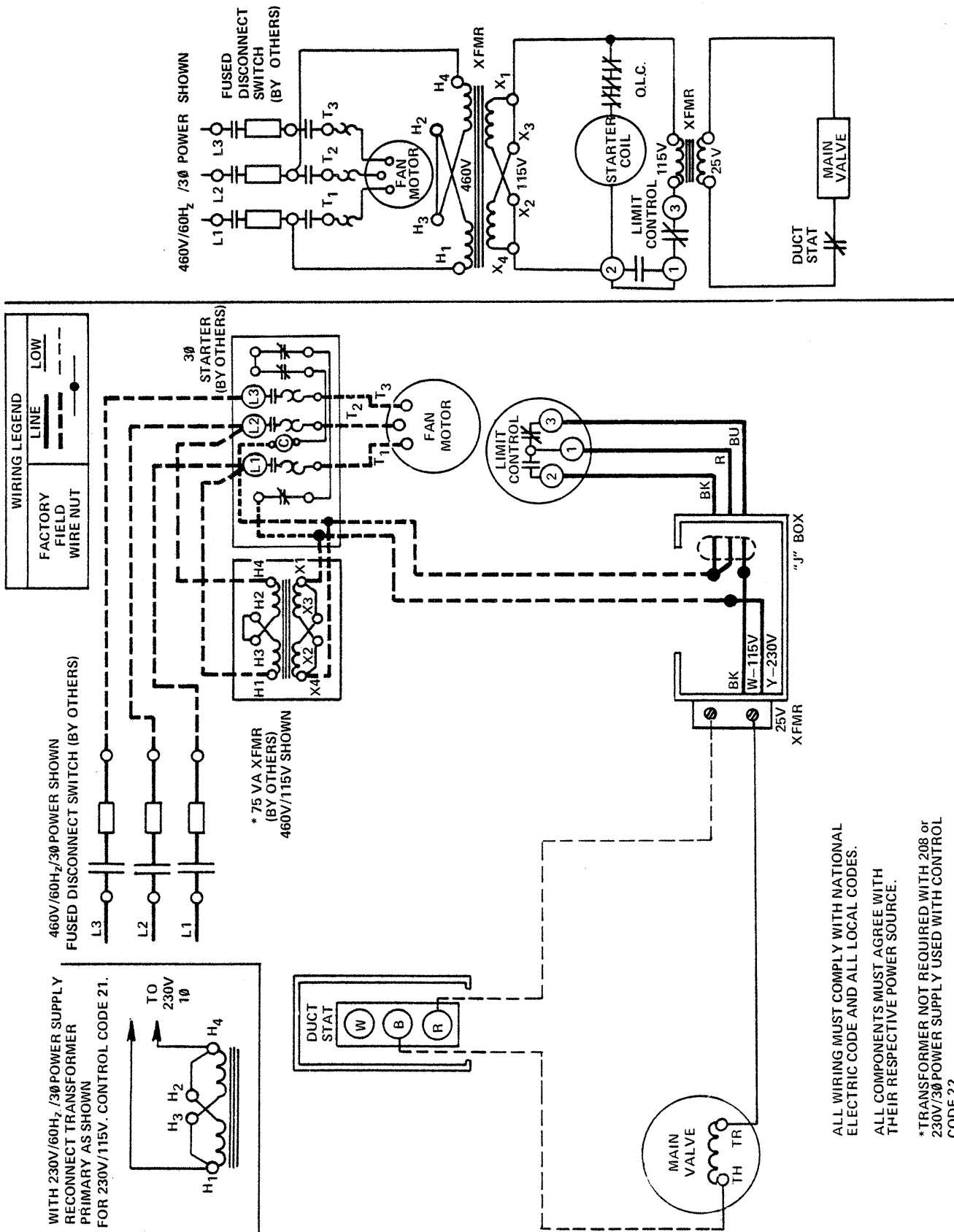


WIRING LEGEND	
FACTORY	FIELD
WIRE NUT	WIRE NUT
LINE	LOW
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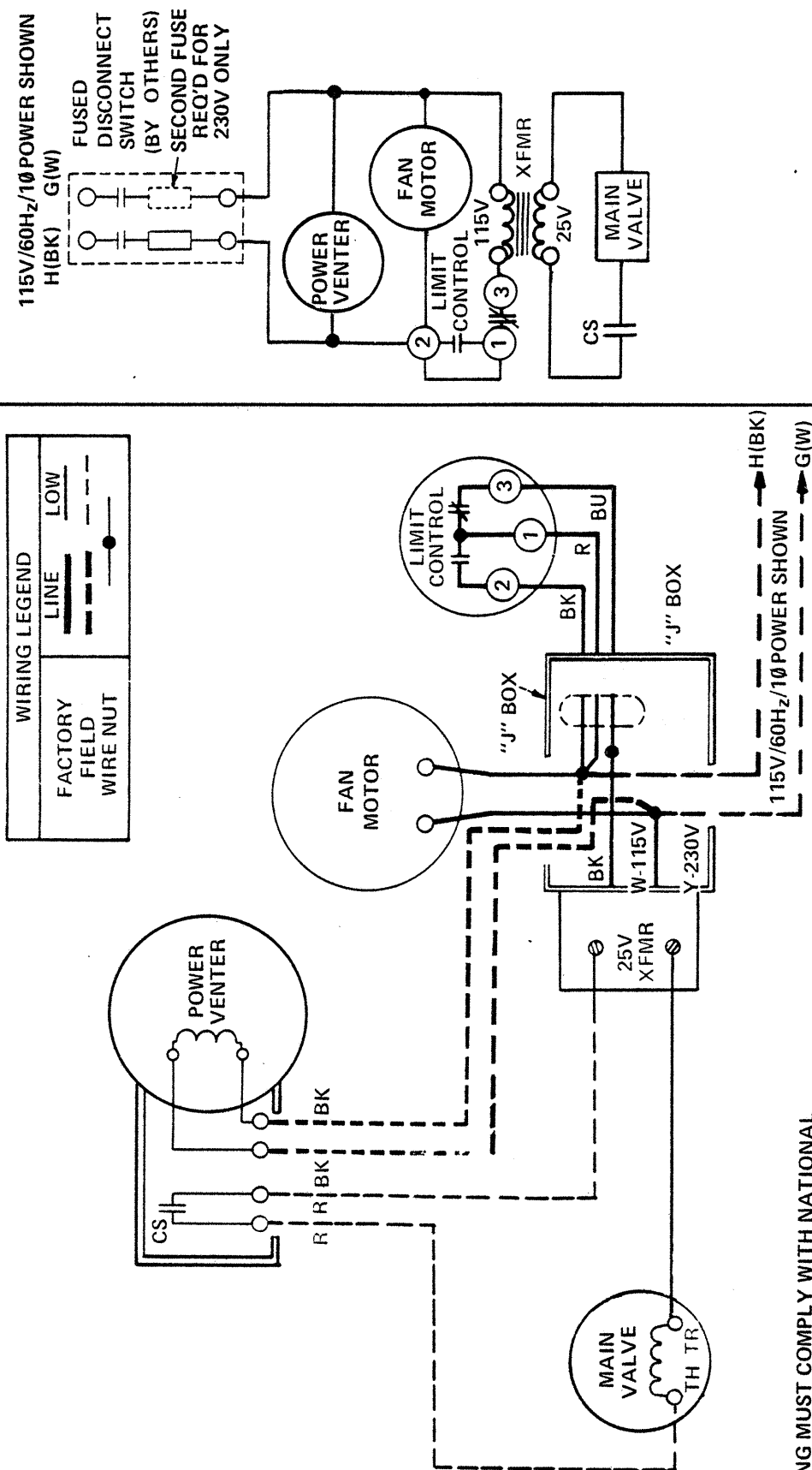
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

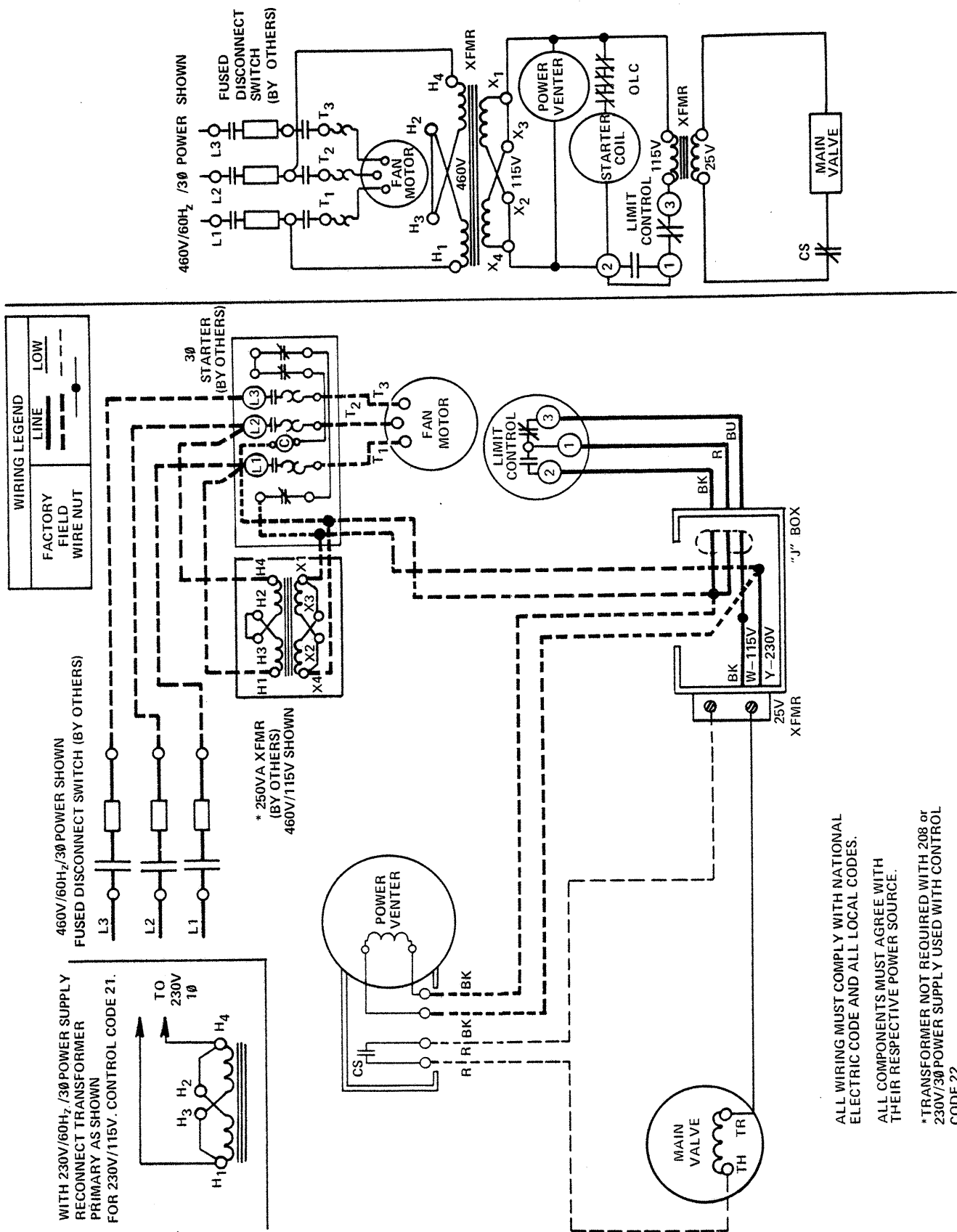


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



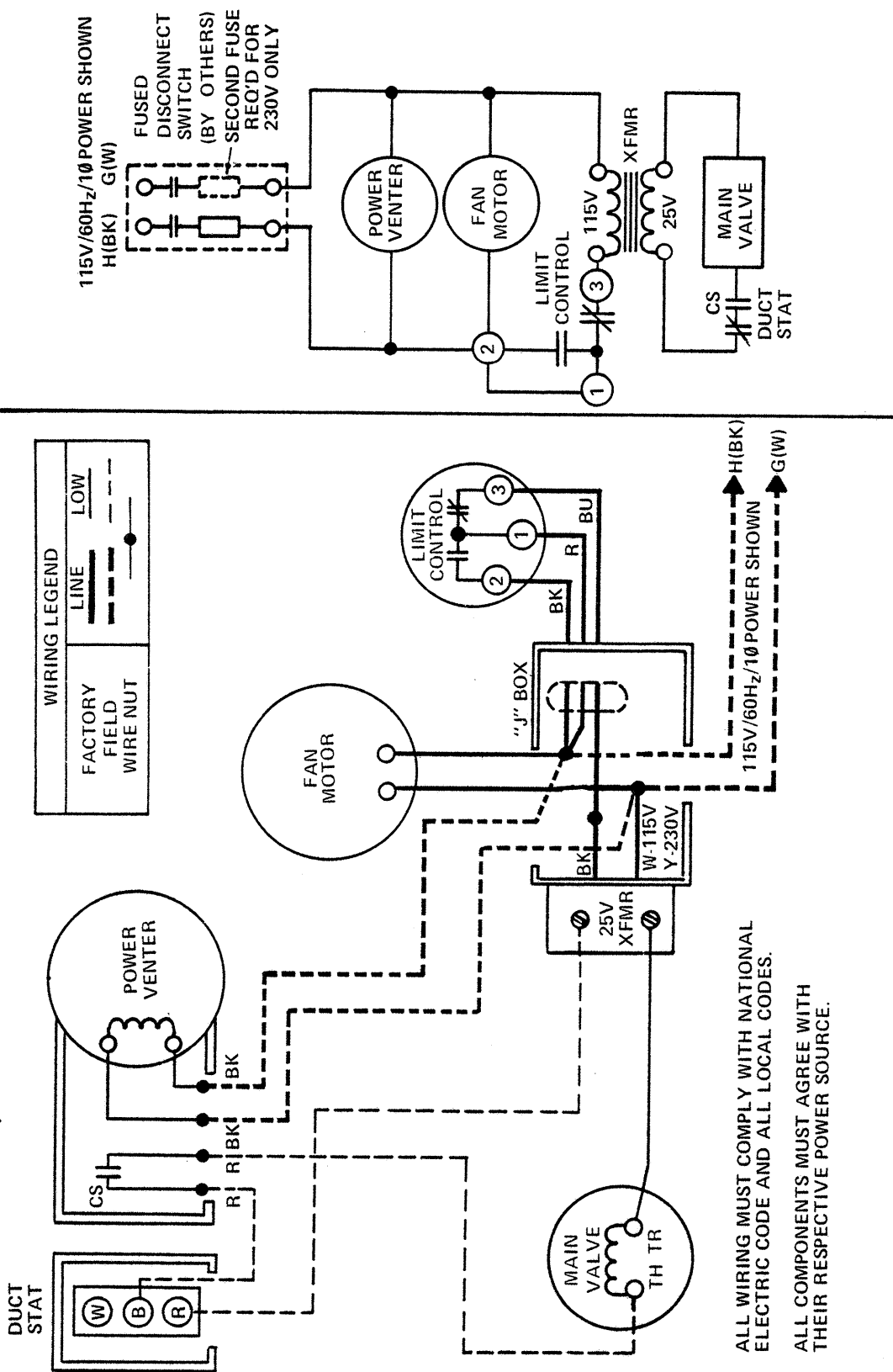
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



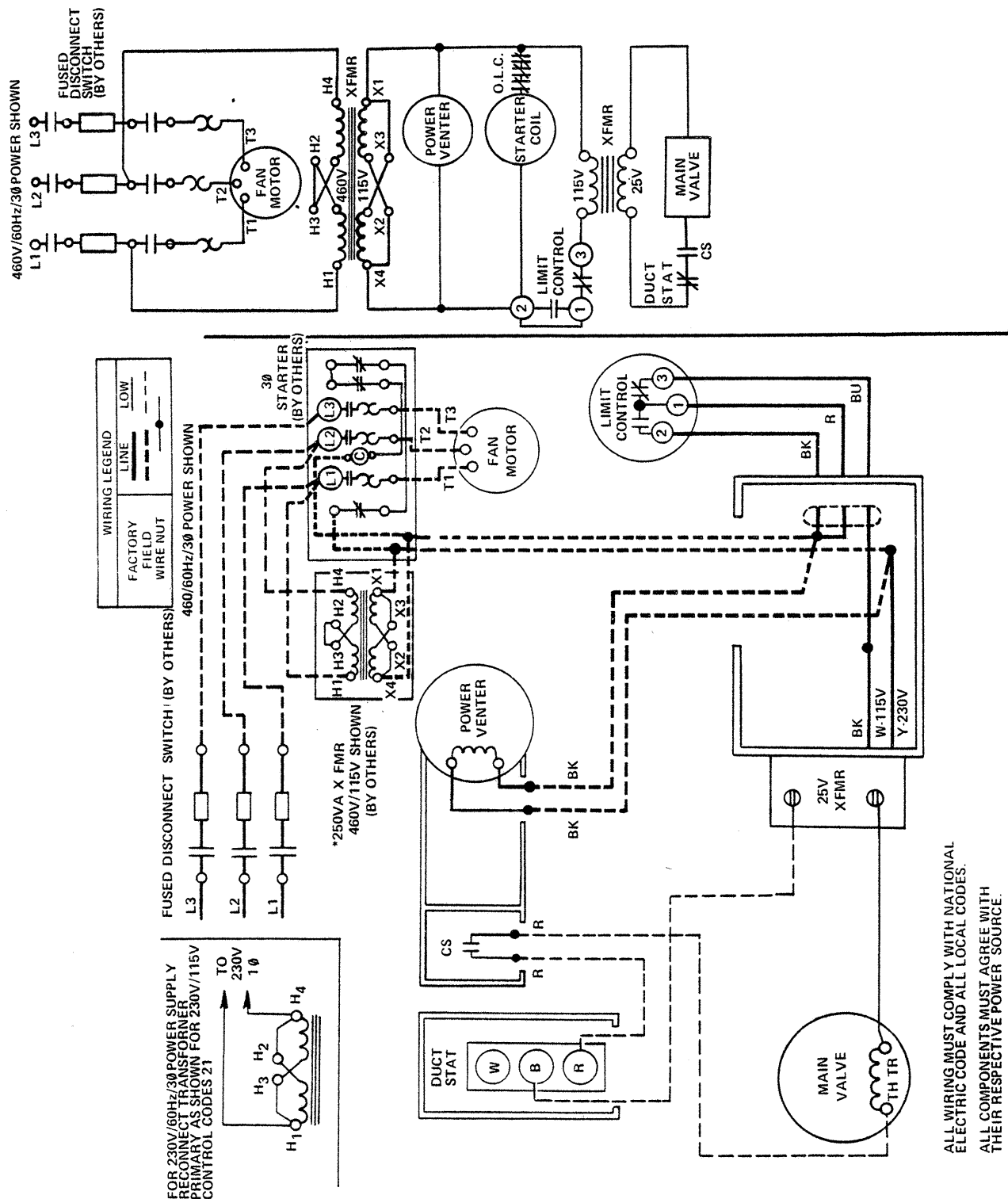
8H5985A178—Straight mechanical modulation, power venter BA-50 thru BA-225, three phase. Control codes 21, 22.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A175—Straight mechanical modulation, low voltage duct stat, power venter BA-250 thru BA-400, single phase. Control codes 21, 22.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

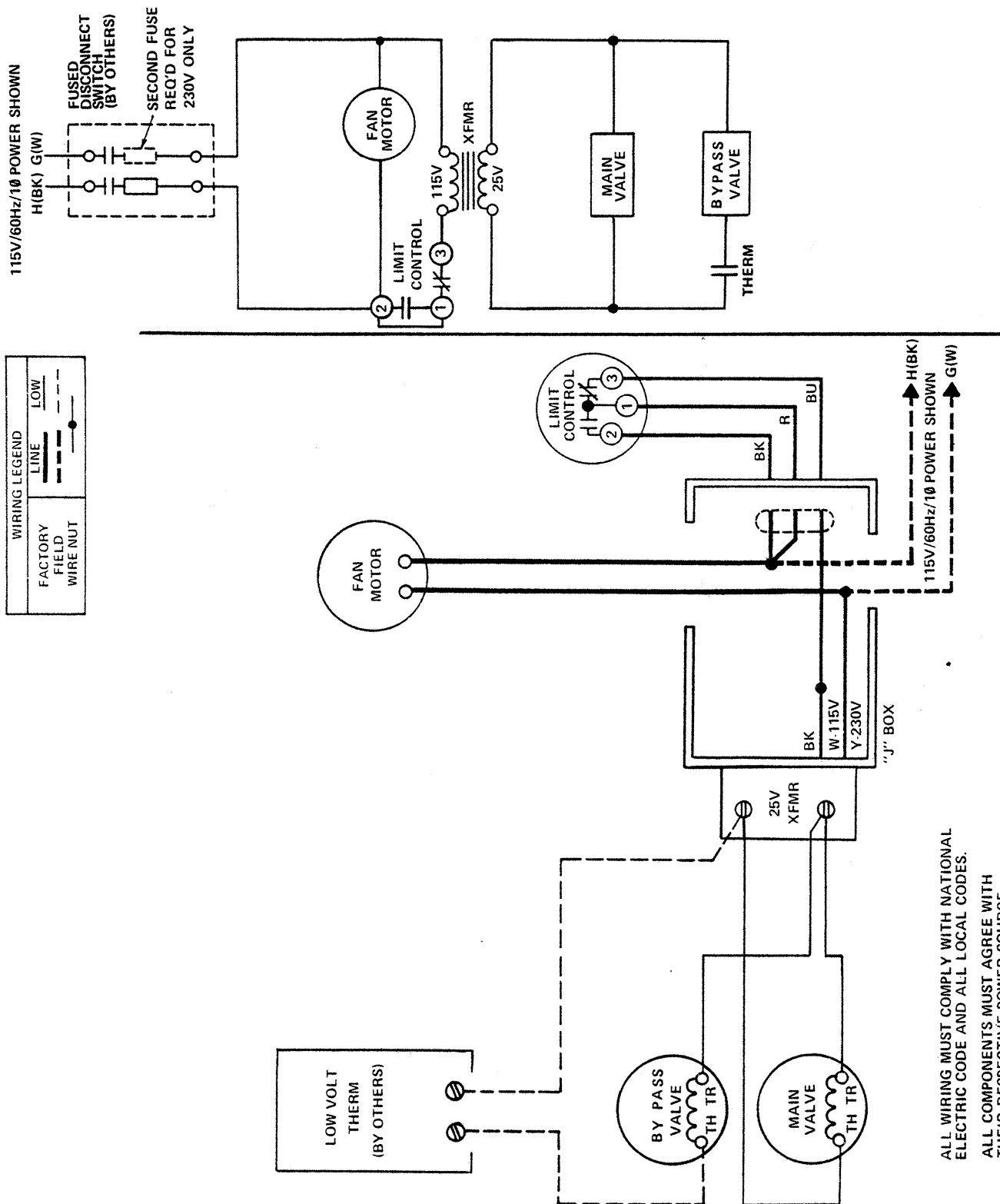


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODE 22.

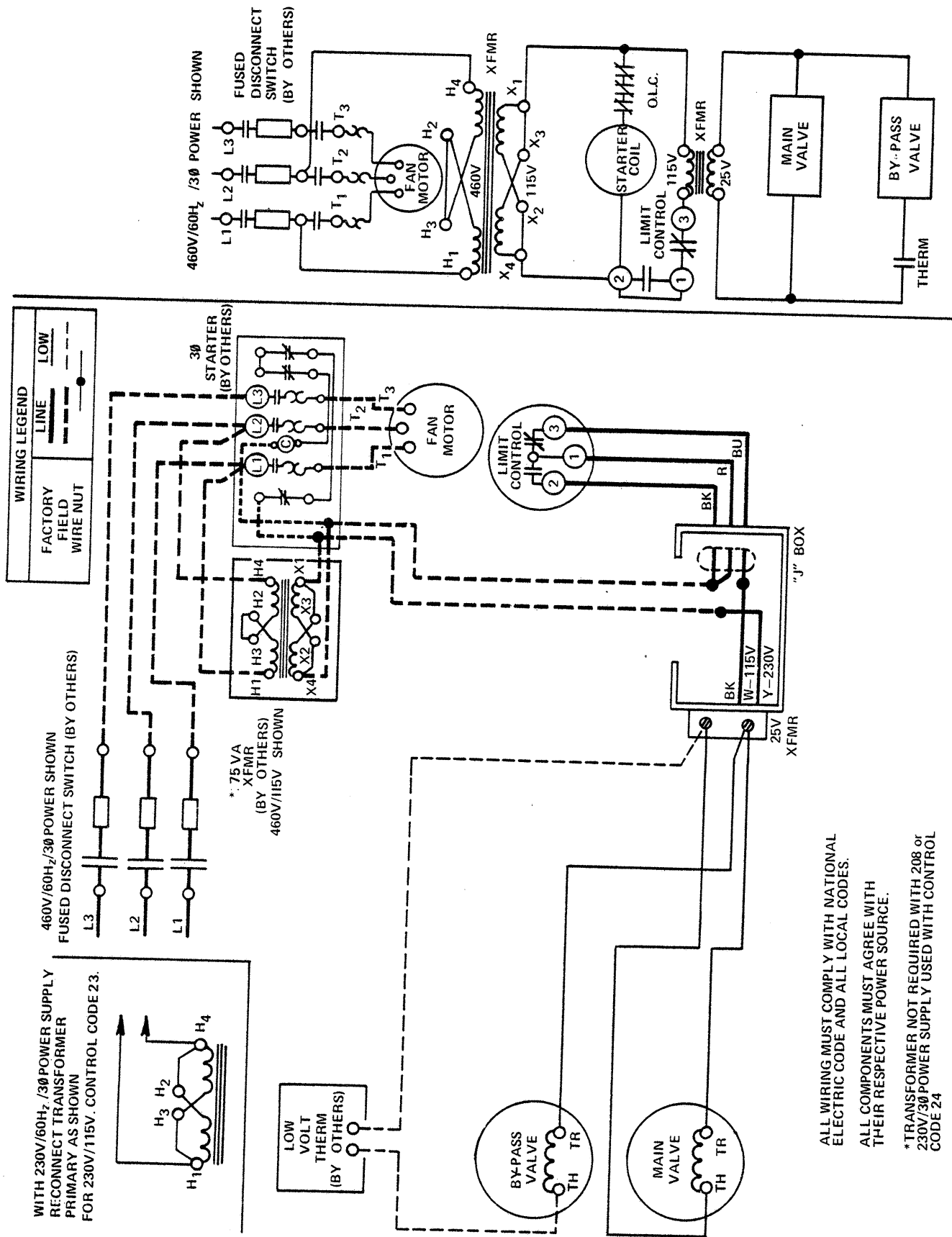
8H5985A179—Straight mechanical modulation, low voltage duct stat, line voltage power venter BA-250 thru BA-400, three phase. Control codes 21, 22.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



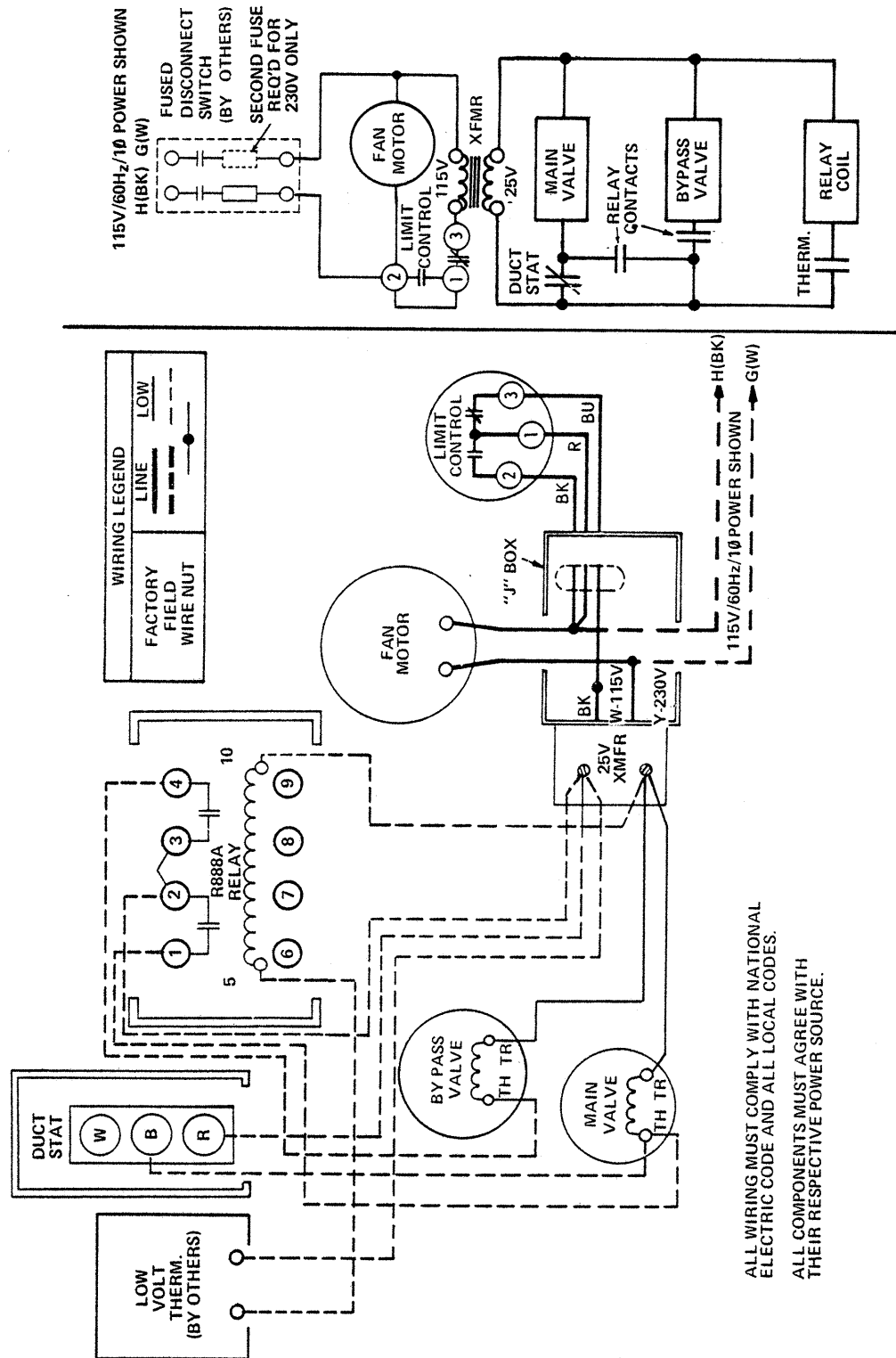
8H5985A138—Straight mechanical modulation with solenoid bypass, low voltage thermostat, BA-50 thru BA-225, single phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



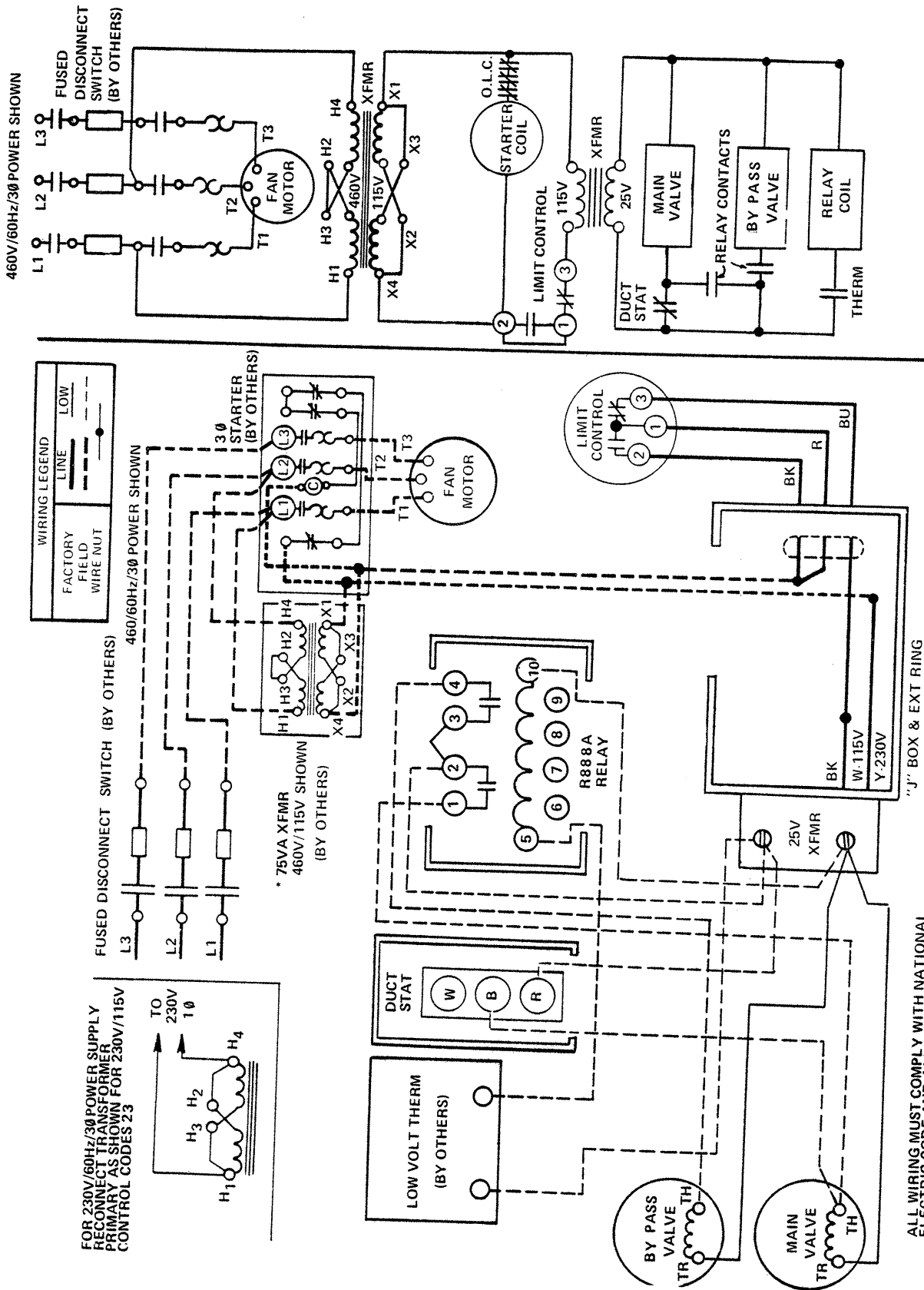
8H5985A190—Straight mechanical modulation with solenoid bypass, low voltage thermostat, BA-50 thru BA-225, three phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A139—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, BA-250 thru BA-300, single phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

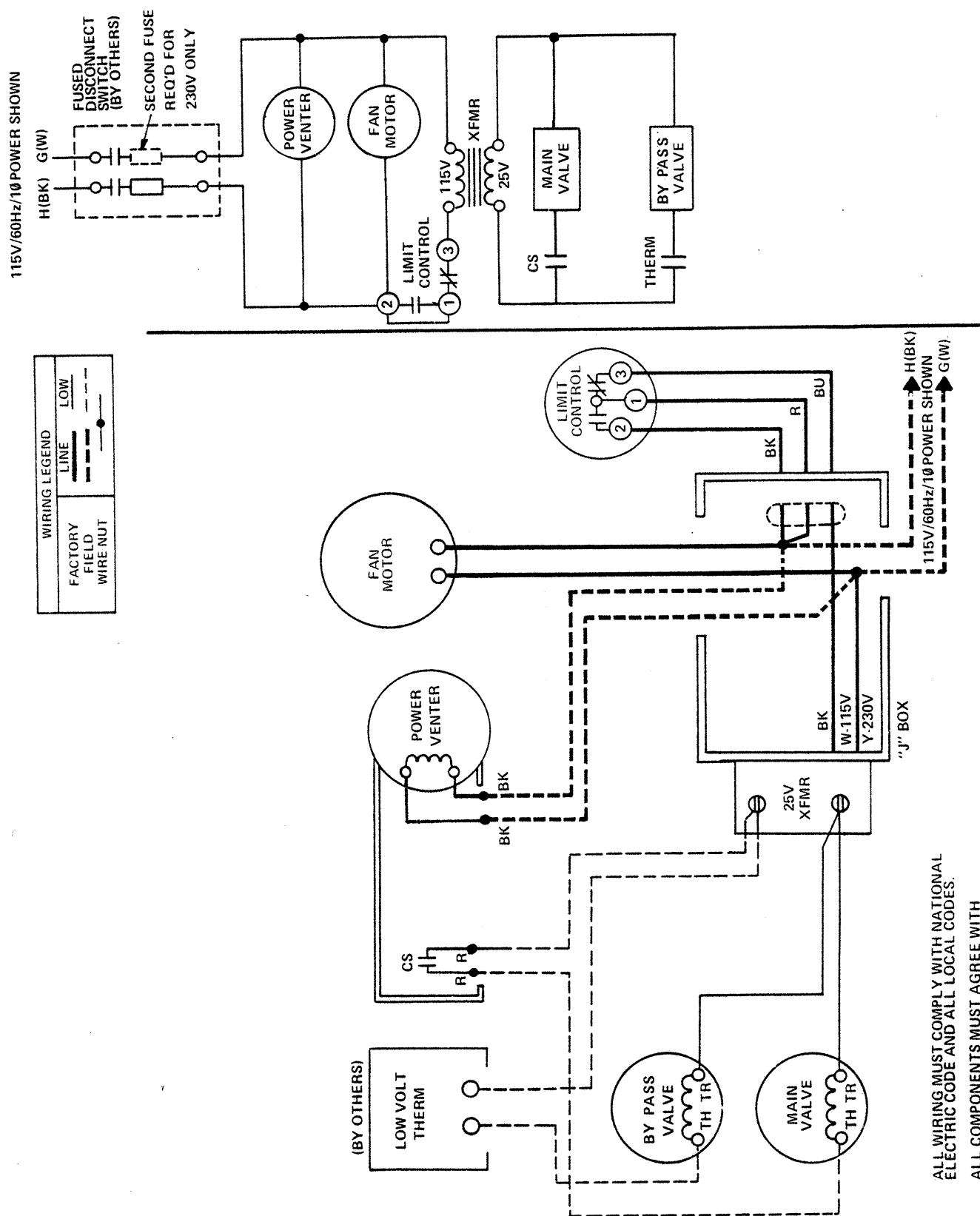


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
 ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODES 24

8H5985A191—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, BA-250 thru BA-300, three phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

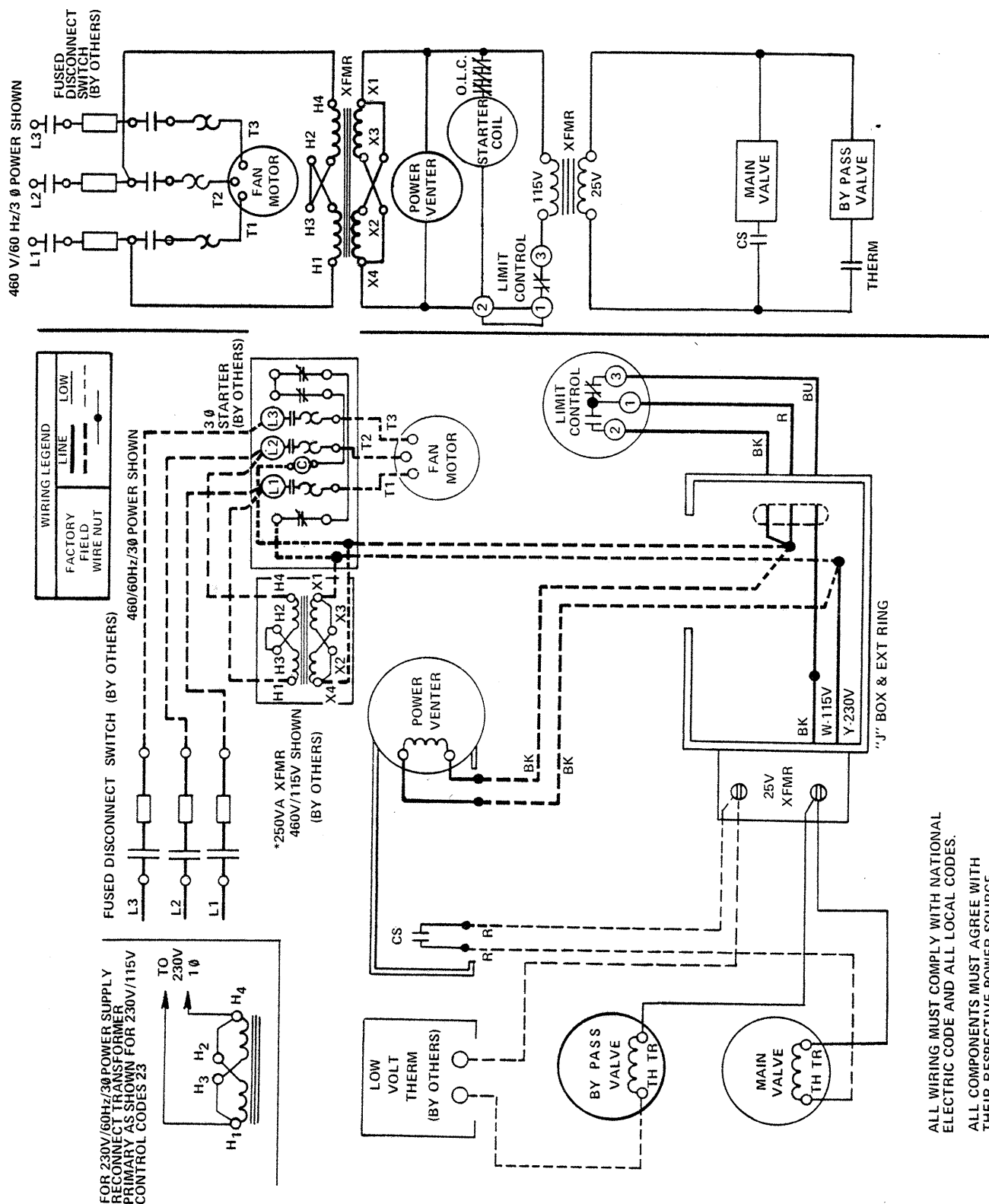


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A186—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, BA-50 thru BA-225, single phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

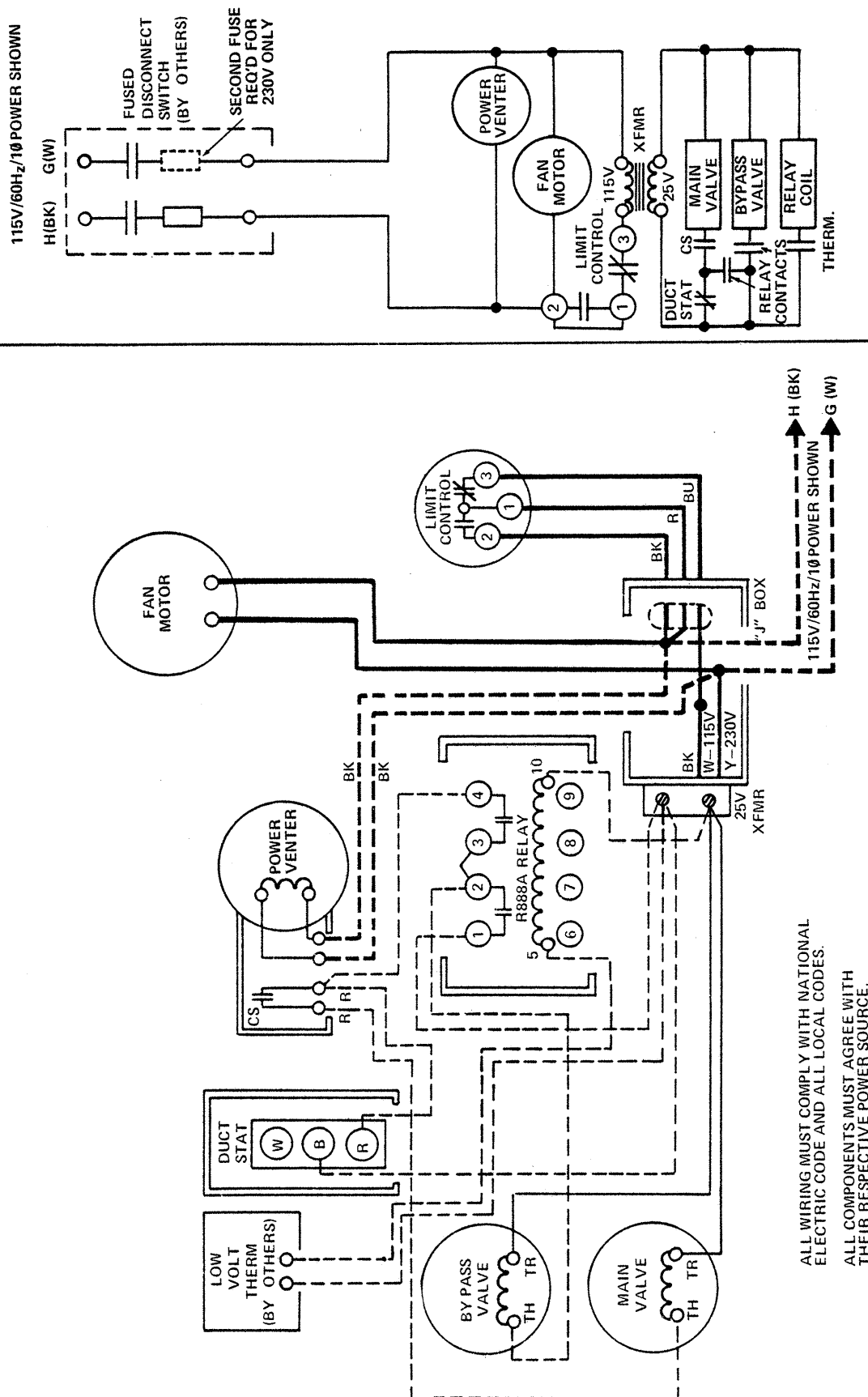
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

* TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH

8H5985A192—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, BA-50 thru BA-225, three phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

WIRING LEGEND		
FACTORY	FIELD	LOW
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—	---	---
—	---	---

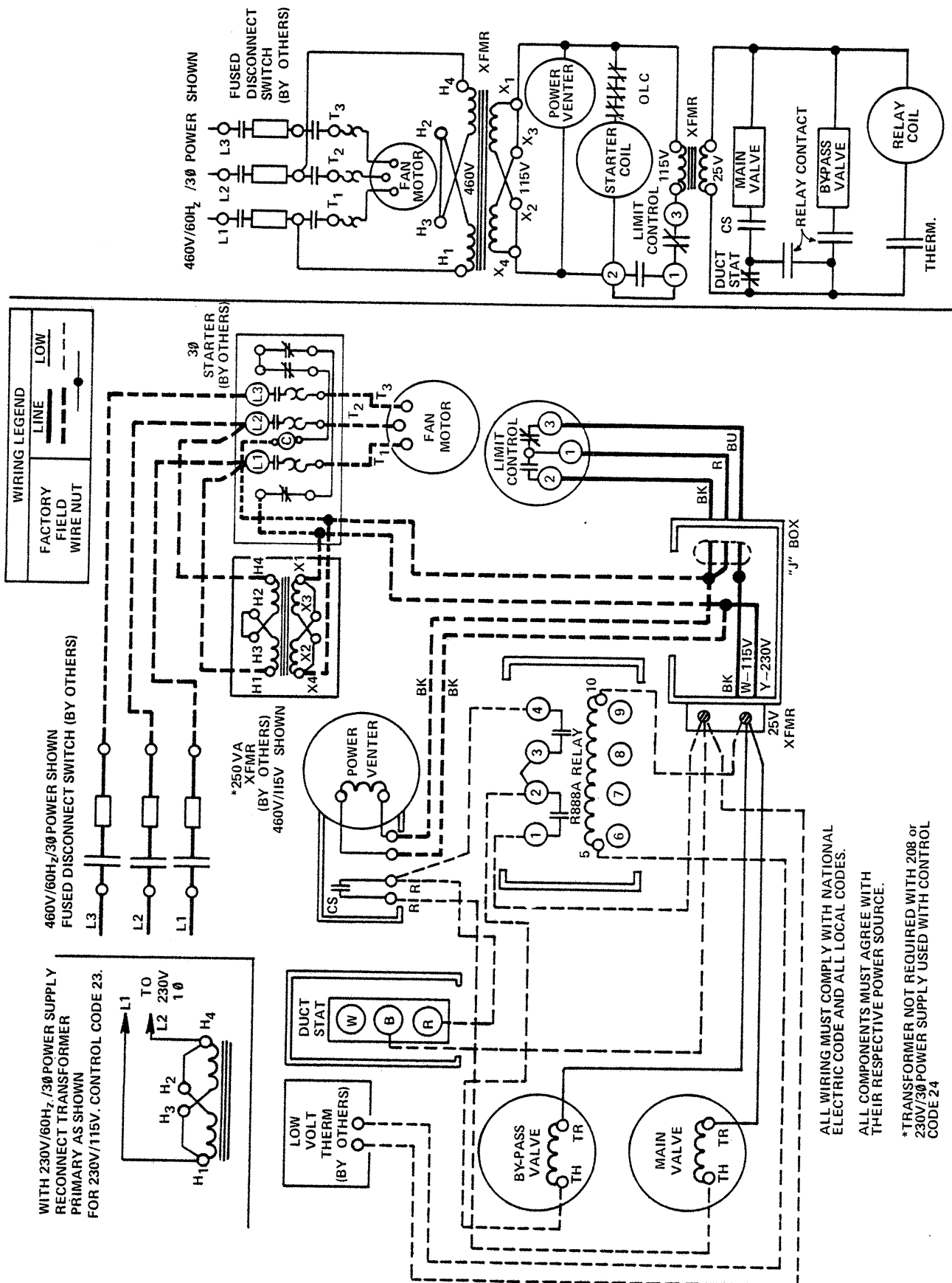


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

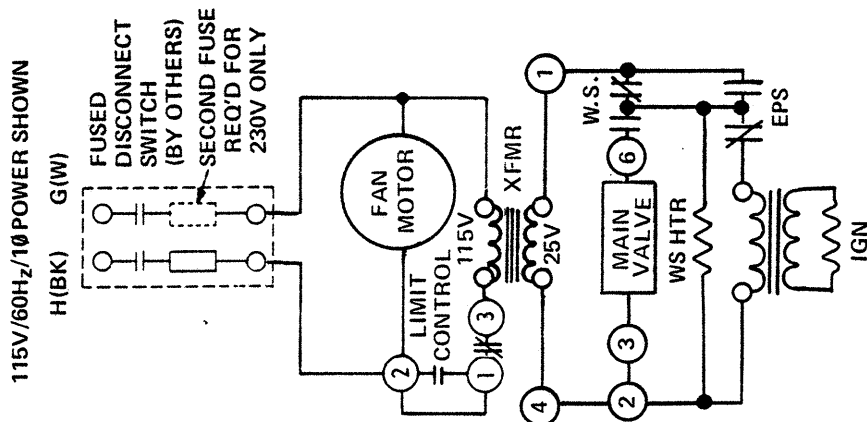
8H5985A187—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, power venter, BA-250, BA-300, single phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

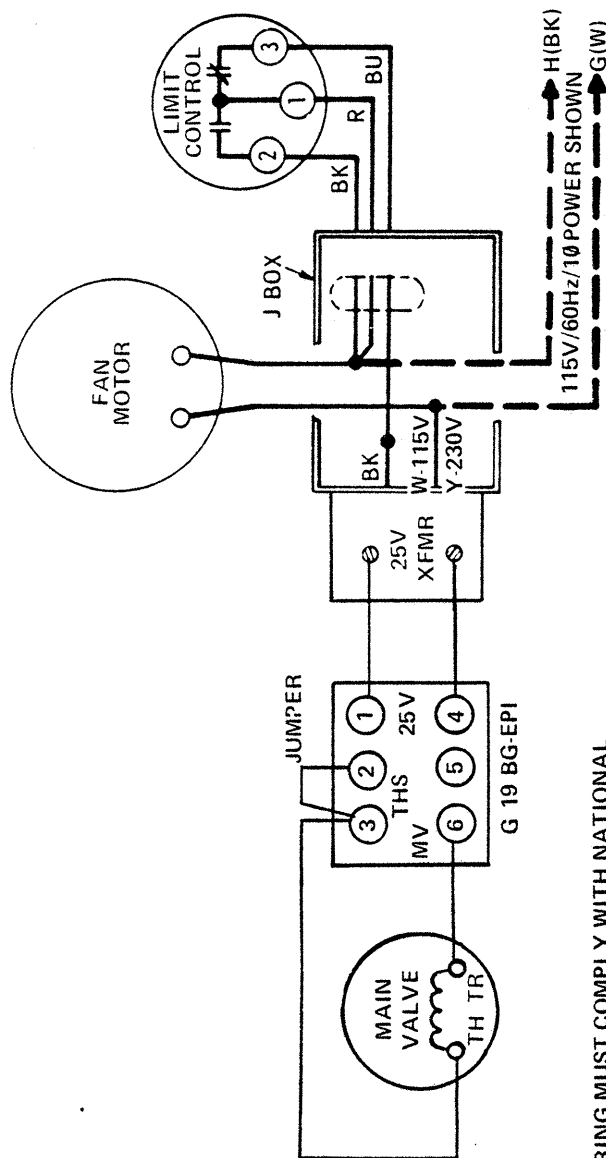


8H5985A193—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, power venter, BA-250, BA-300, three phase. Control codes 23, 24.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

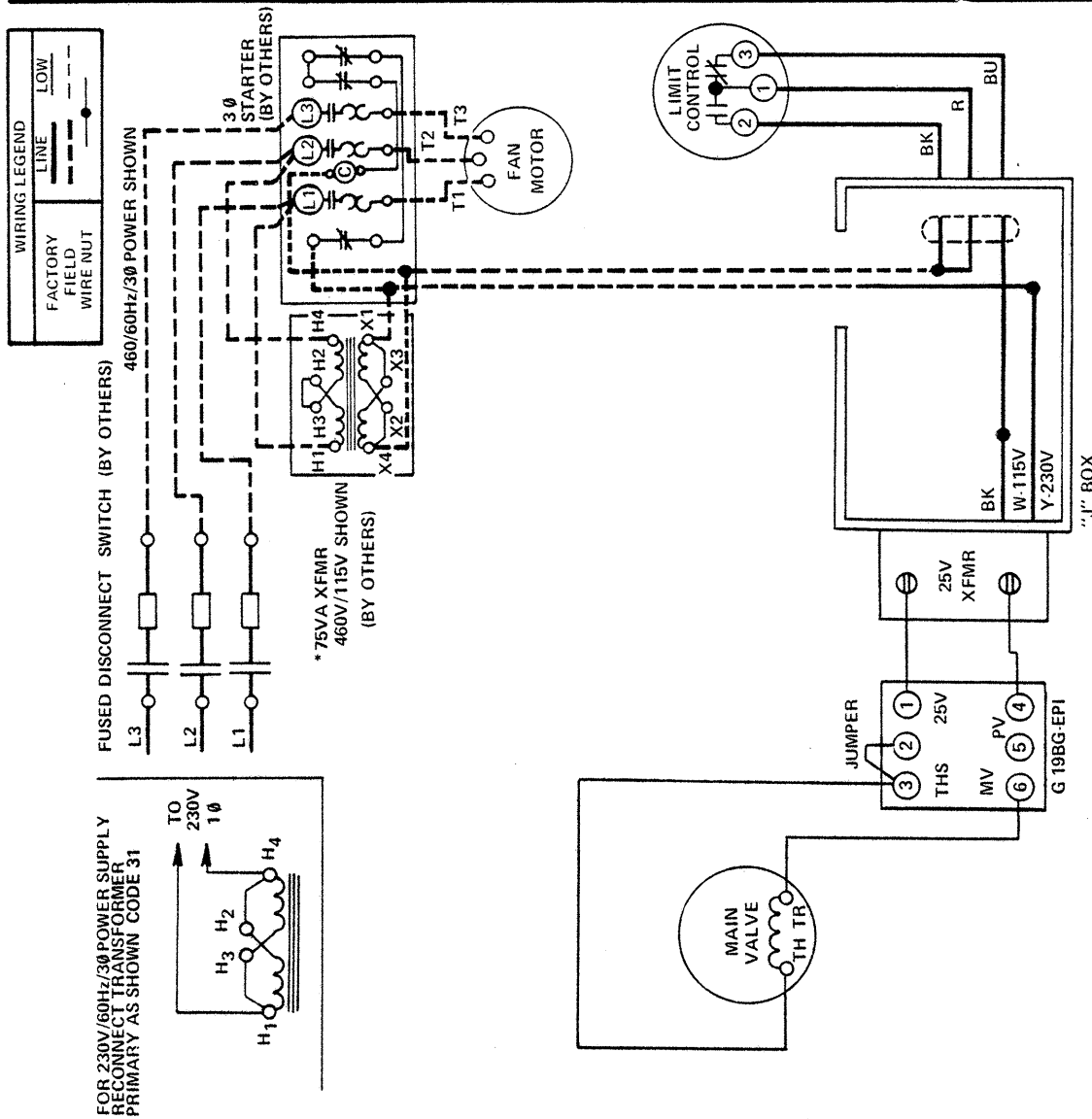
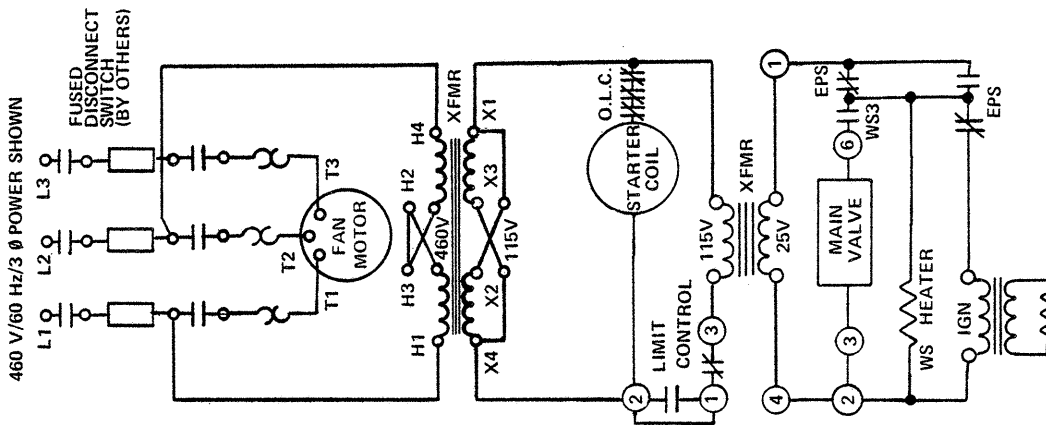


WIRING LEGEND	
FACTORY	LINE
FIELD	LOW
WIRE NUT	---



ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



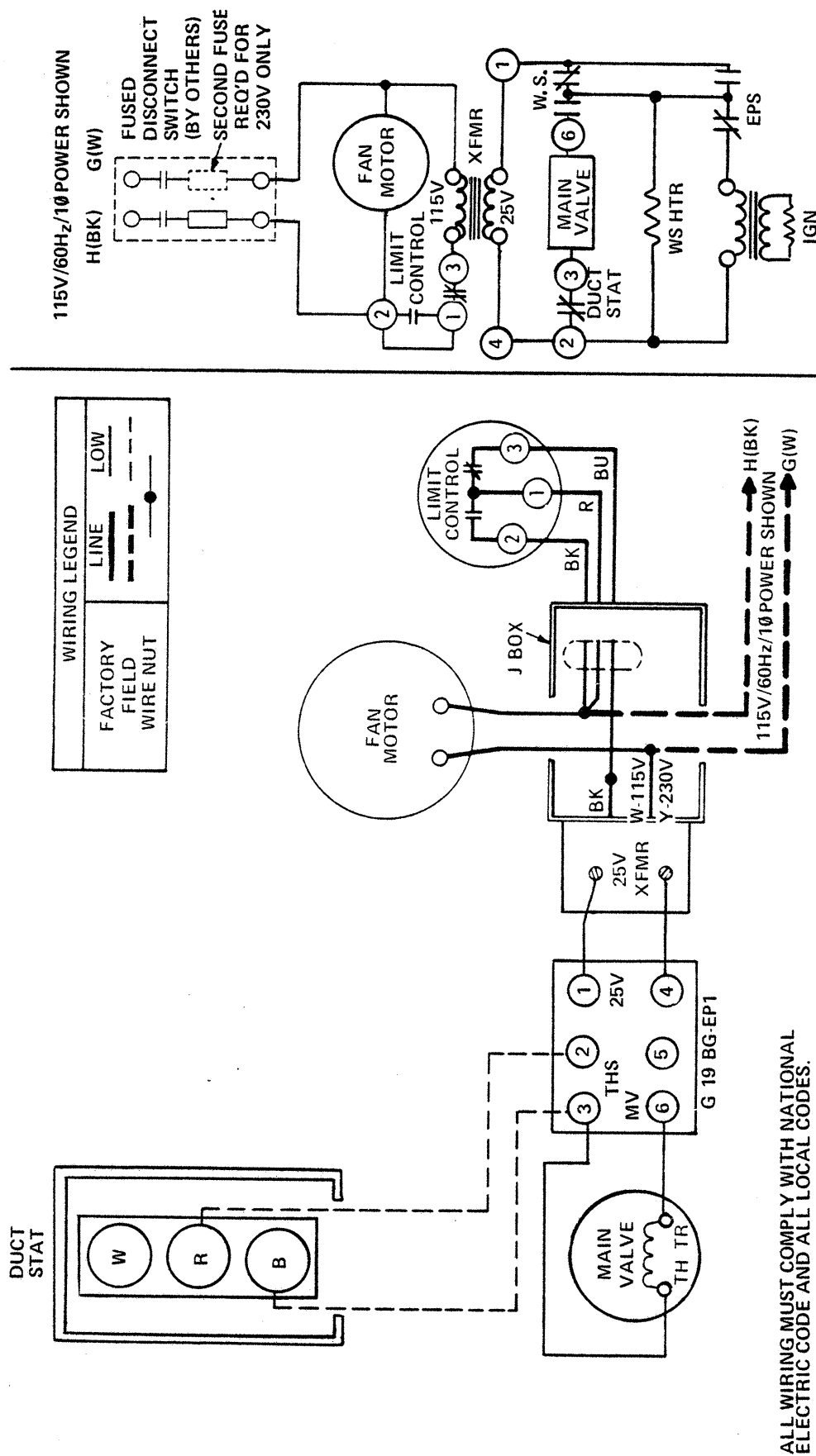
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

*TRANSFORMER NOT REQUIRED WITH 208 OR 230 V/3 Ø POWER SUPPLY USED WITH CONTROL CODES 31, 32.

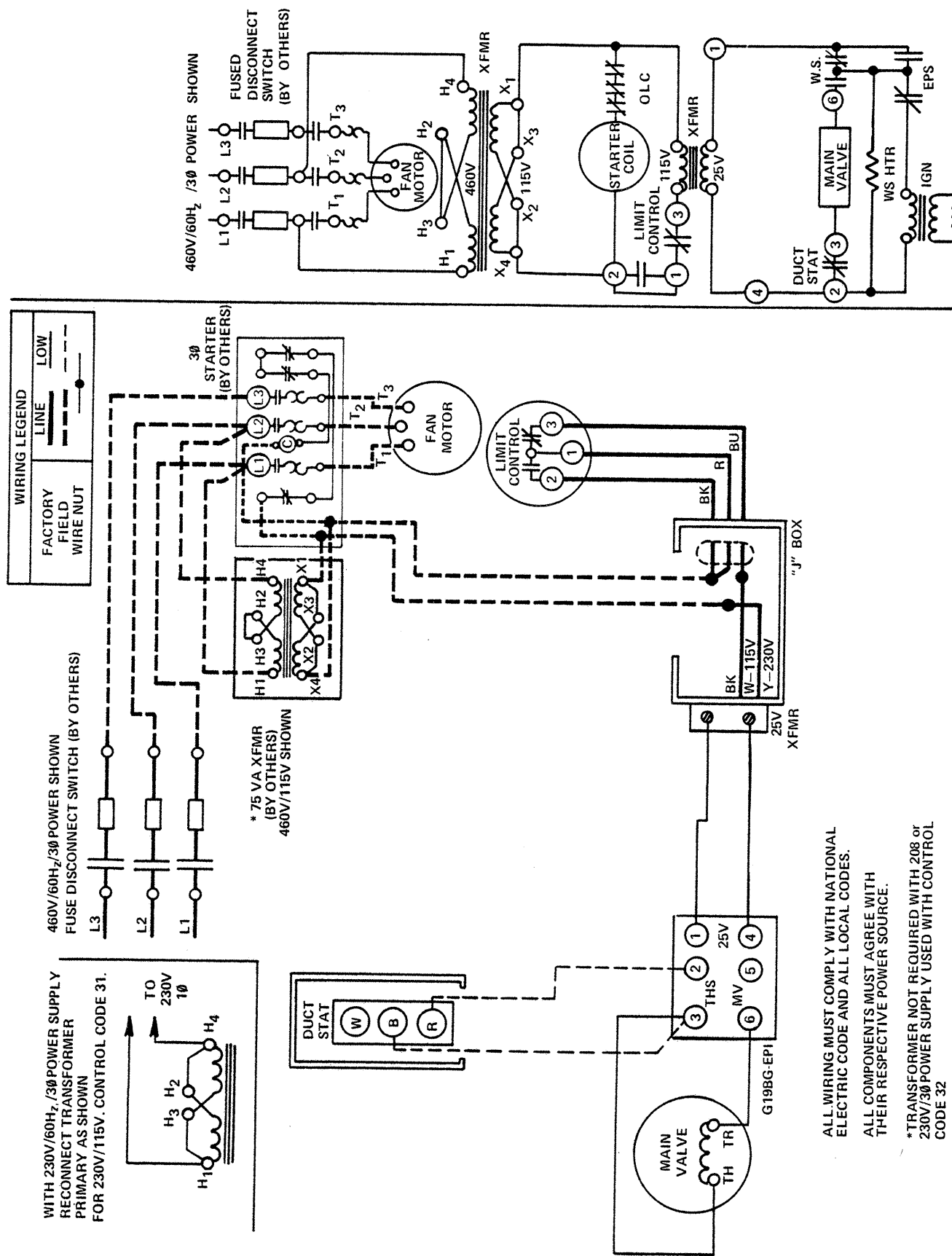
8H5985A180—Straight mechanical modulation, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, single phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



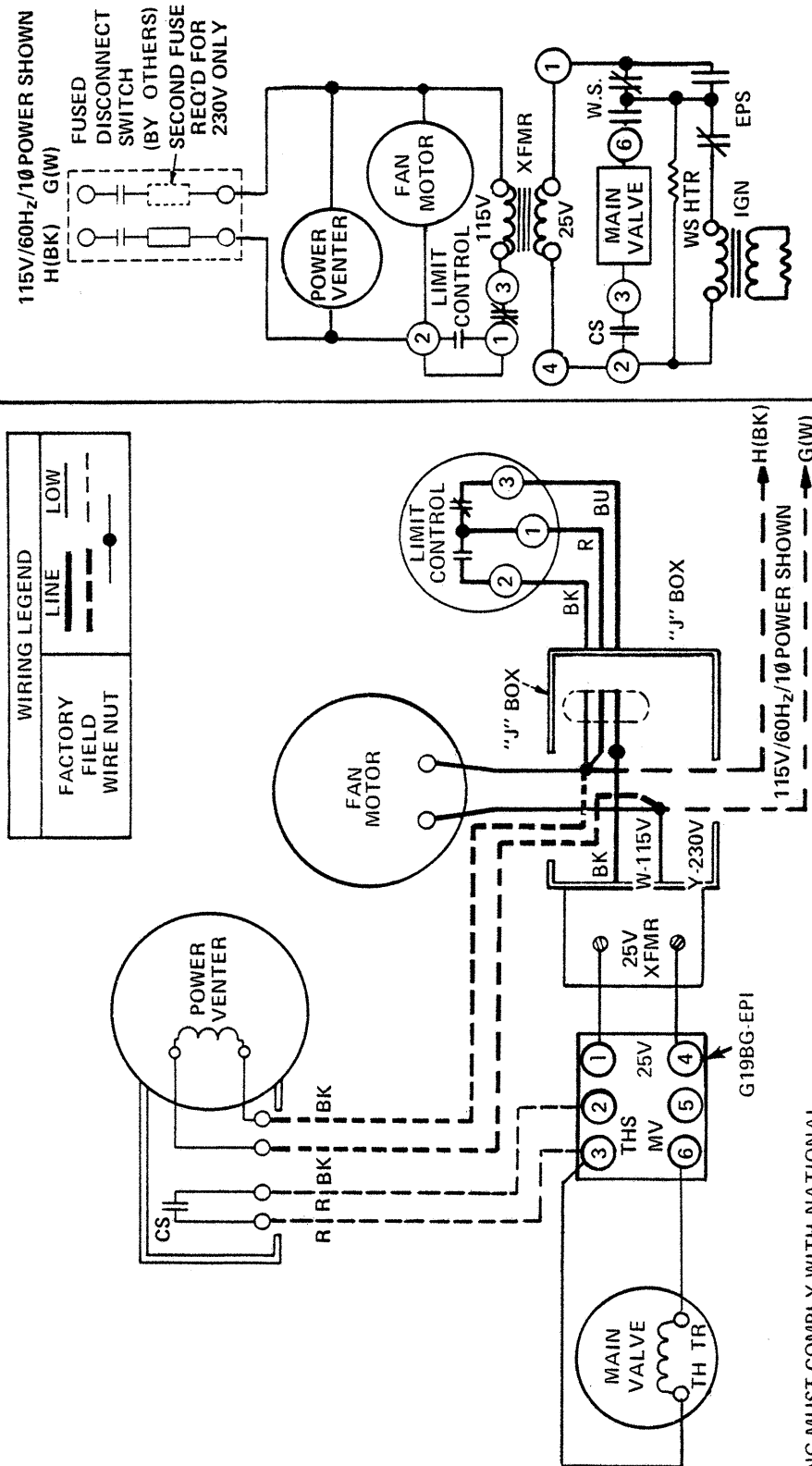
8H5985A152—Straight mechanical modulation, low voltage duct stat, non-100% shut-off, electric pilot ignition, BA-250 thru BA-400, single phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

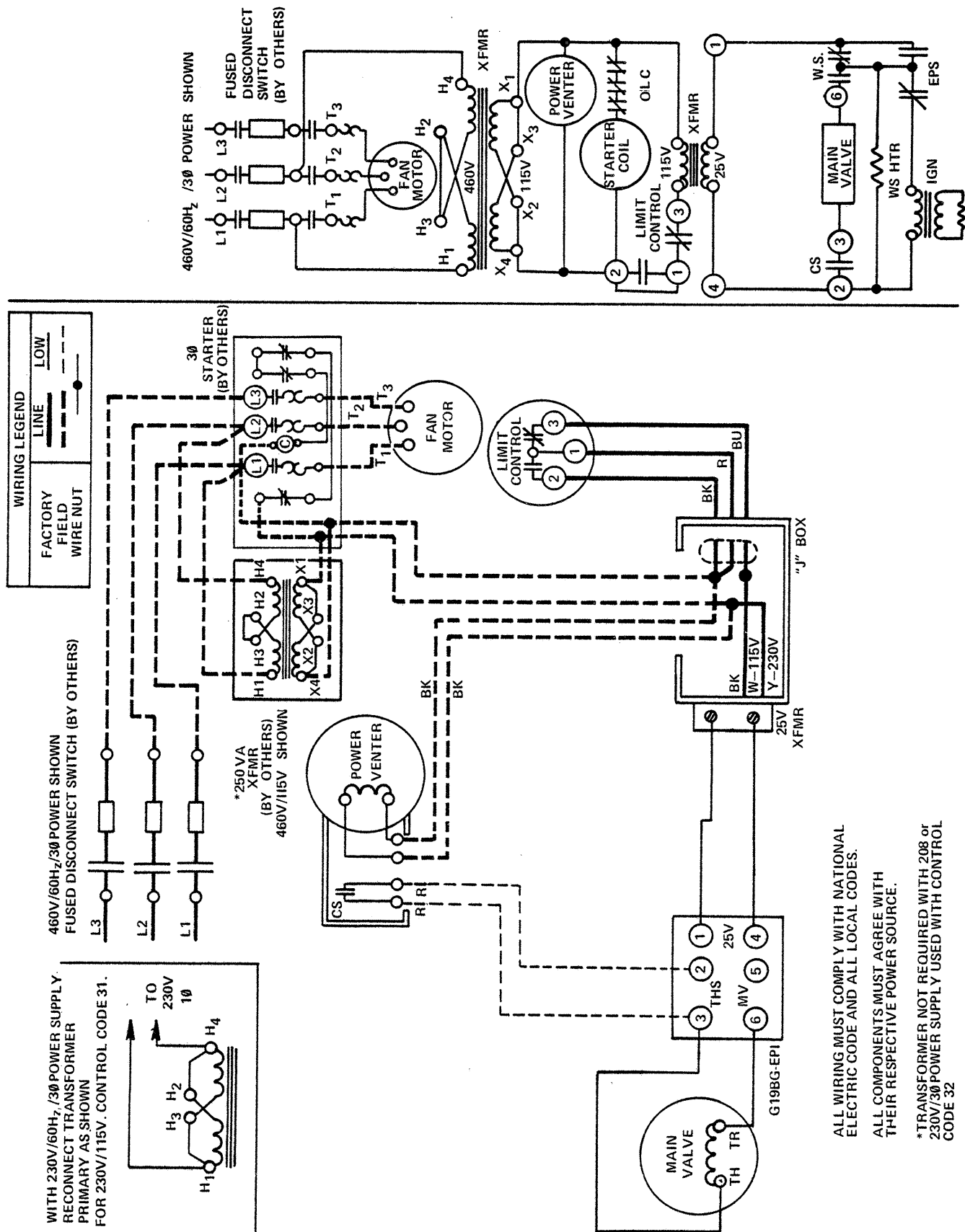


8H5985A181—Straight mechanical modulation, low voltage duct stat, non-100% shut-off, electric pilot ignition, BA-250 thru BA-400, three phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

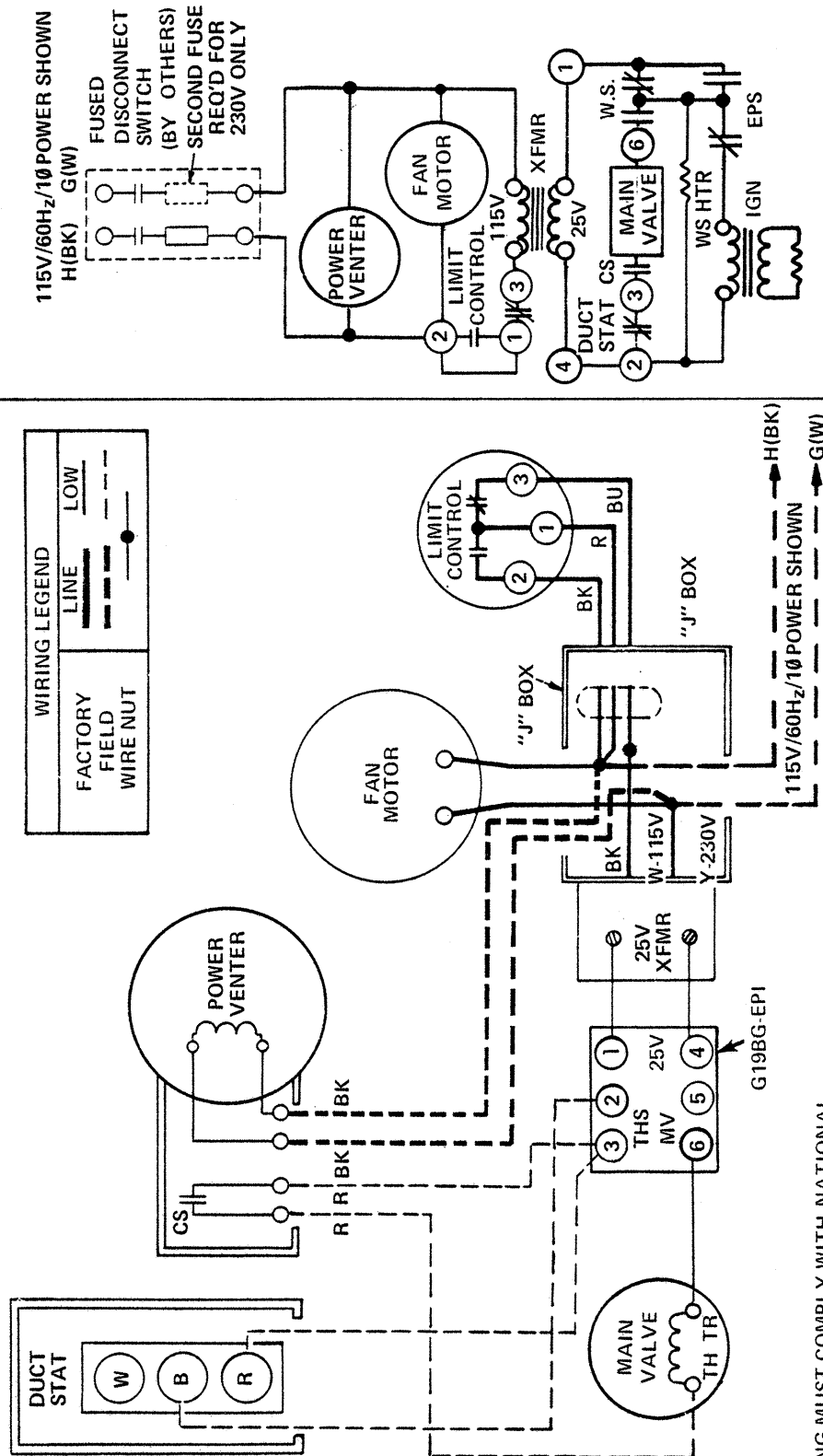


WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A184—Straight mechanical modulation, power venter, non-100 % shut-off, electric pilot ignition, BA-50 thru BA-225, three phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

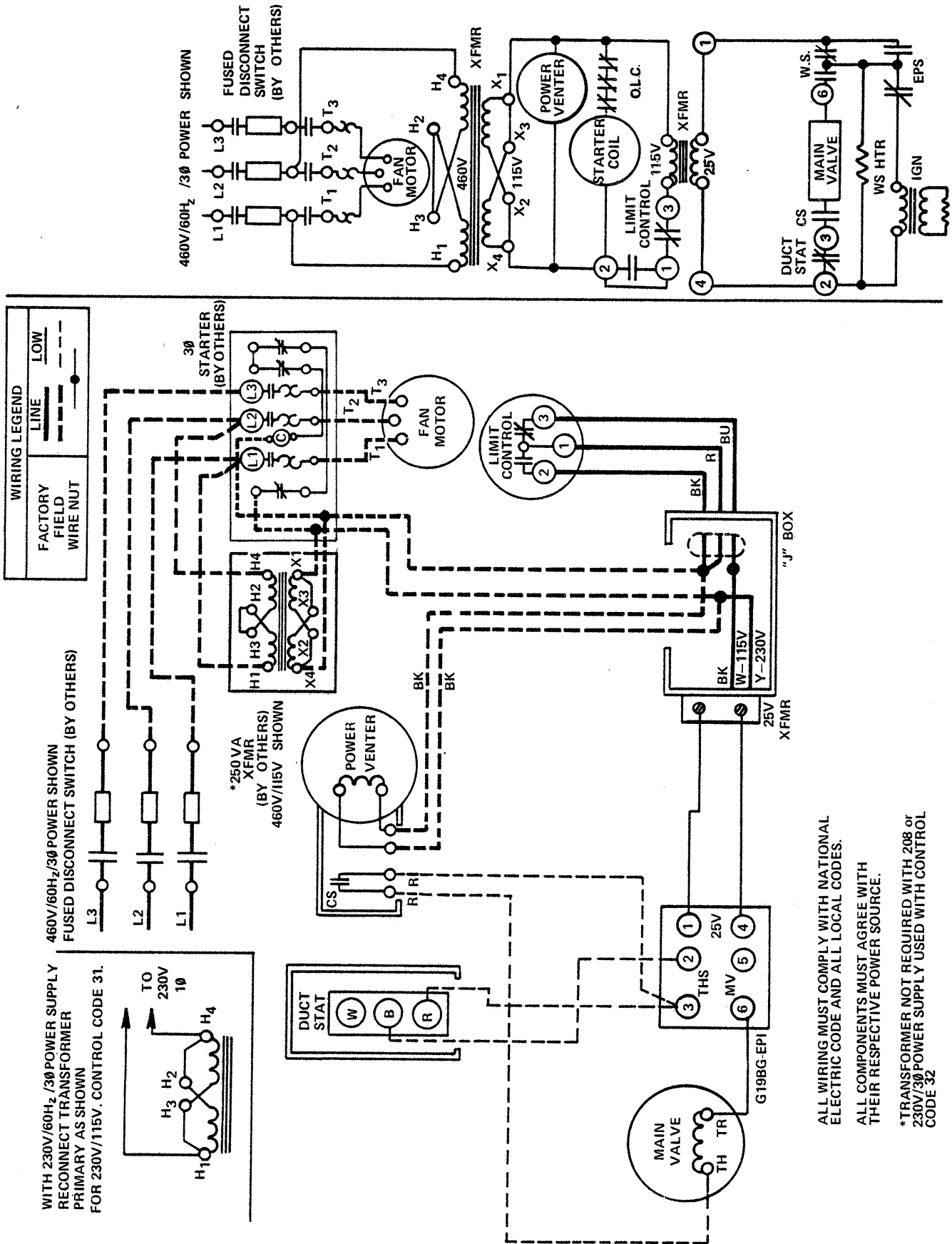


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A183—Straight mechanical modulation, low voltage duct stat, power venter, non-100% shut-off, electric pilot ignition, BA-225 thru BA-400, single phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



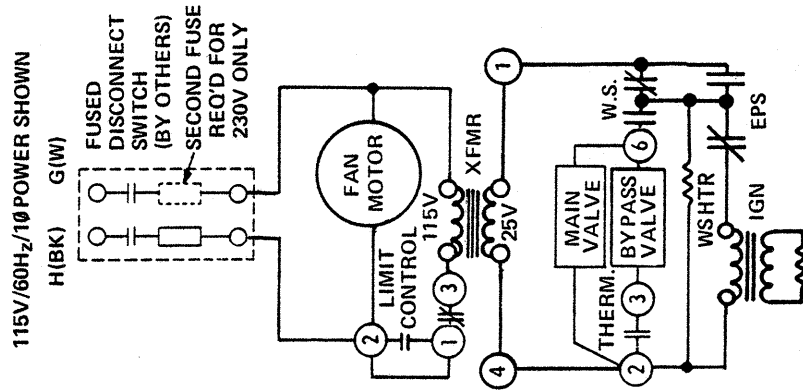
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

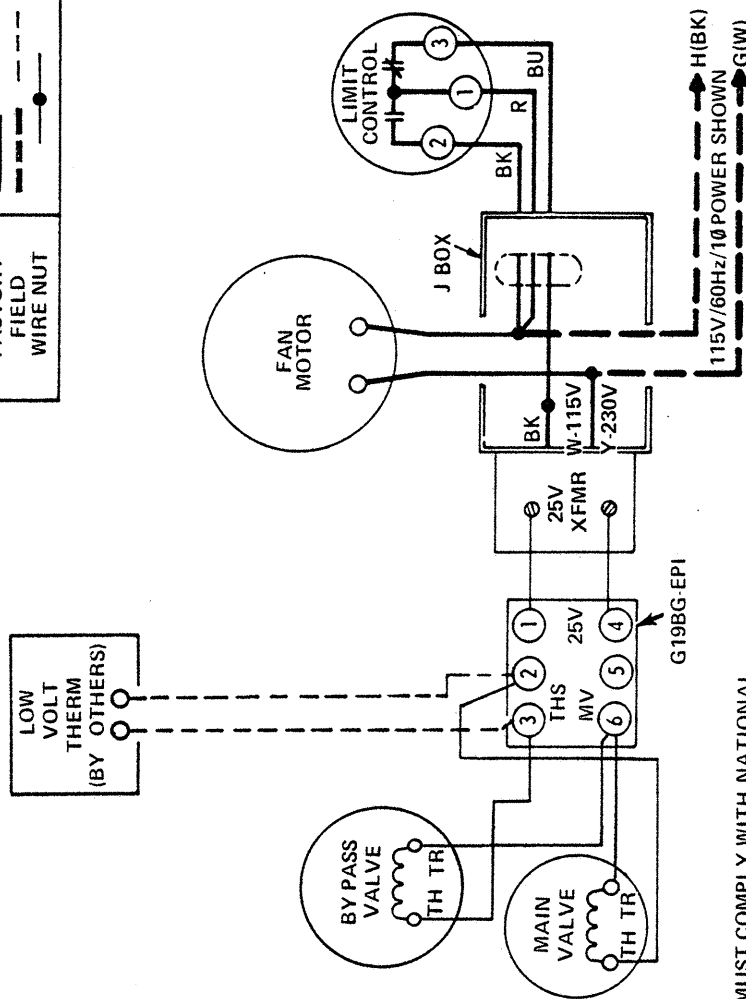
*TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODE 32

8H5985A185—Straight mechanical modulation, low volt duct stat, power venter, non-100% shut-off, electric pilot ignition, BA-250 thru BA-400, three phase. Control codes 31, 32.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



WIRING LEGEND	
FACTORY FIELD WIRE NUT	LINE
	LOW

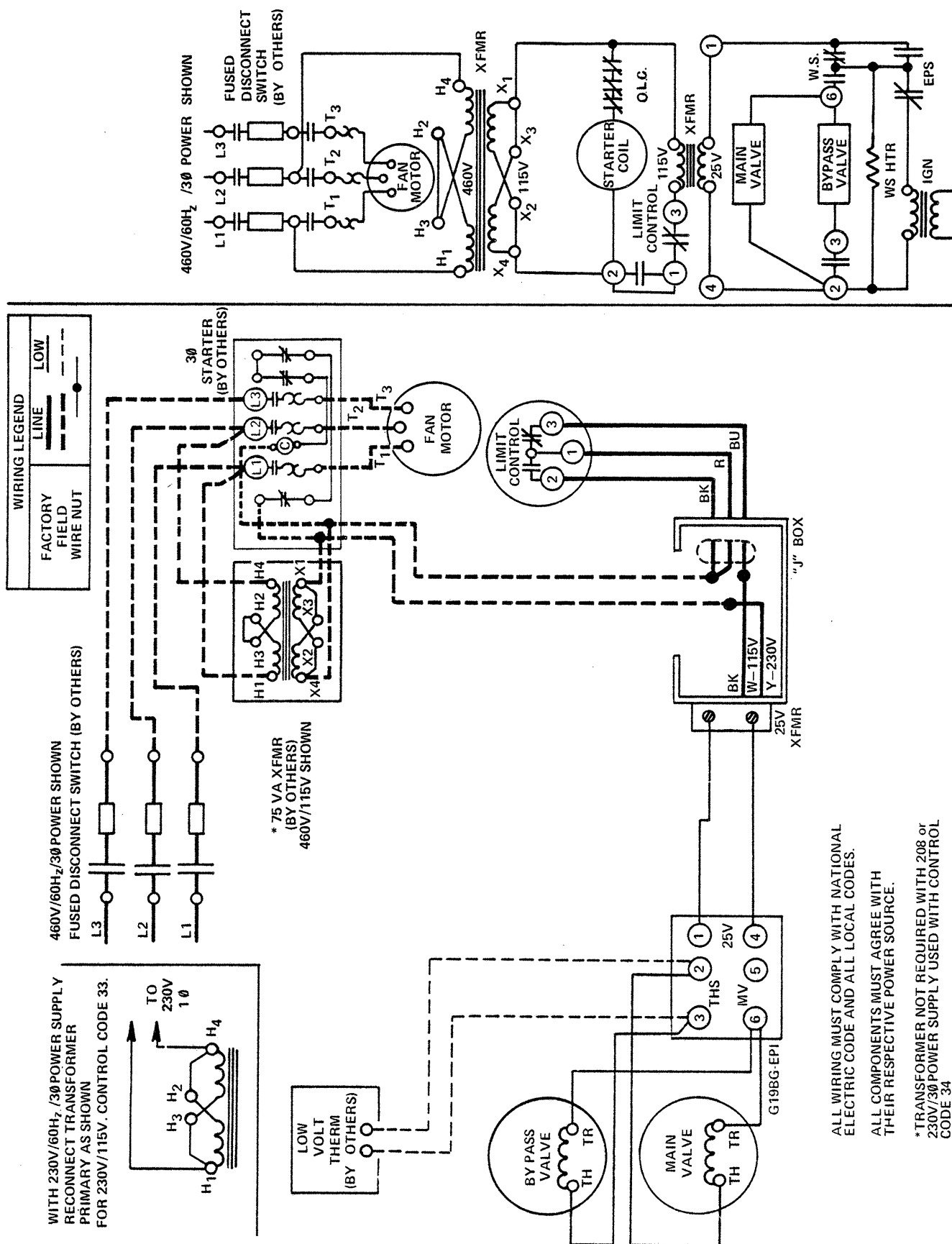


ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

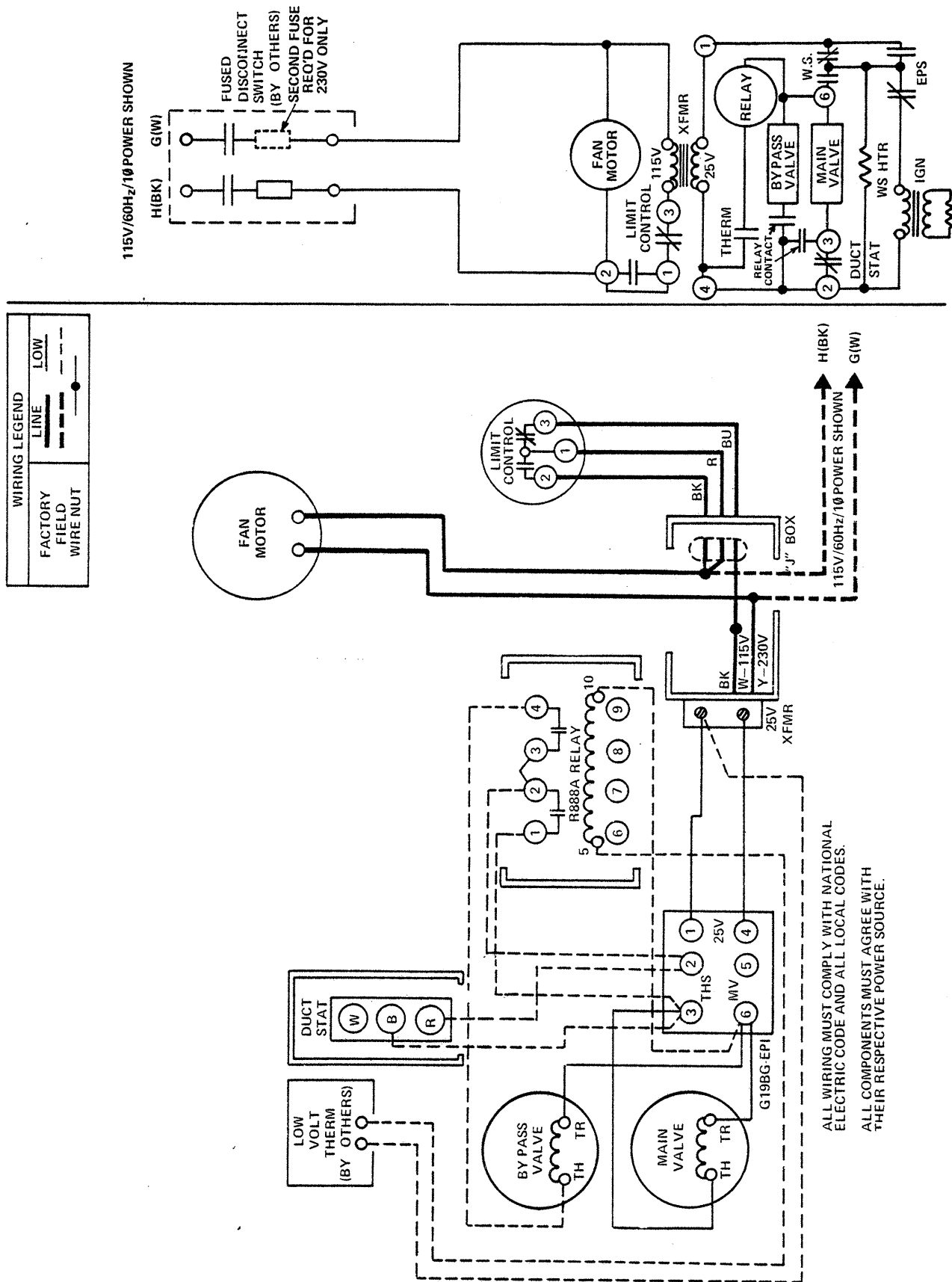
8H5985A153—Straight mechanical modulation with solenoid bypass, low voltage thermostat, non-100% shut-off electric pilot ignition, BA-50 thru BA-225, single phase. Control codes 33, 34.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A194—Straight mechanical modulation with solenoid bypass, low voltage thermostat, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, three phase. Control codes 33, 34.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



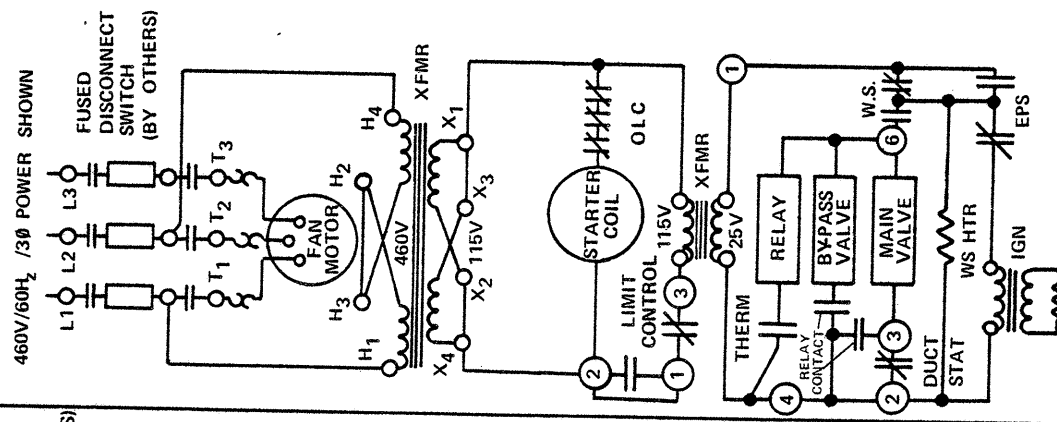
8H5985A154—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, non-100% shut-off, electric pilot ignition, BA-250, BA 300, single phase. Control codes 33, 34.

WITH 230V/60Hz, 30 POWER SUPPLY
RECONNECT TRANSFORMER
PRIMARY AS SHOWN
FOR 230V/115V. CONTROL CODE 33.



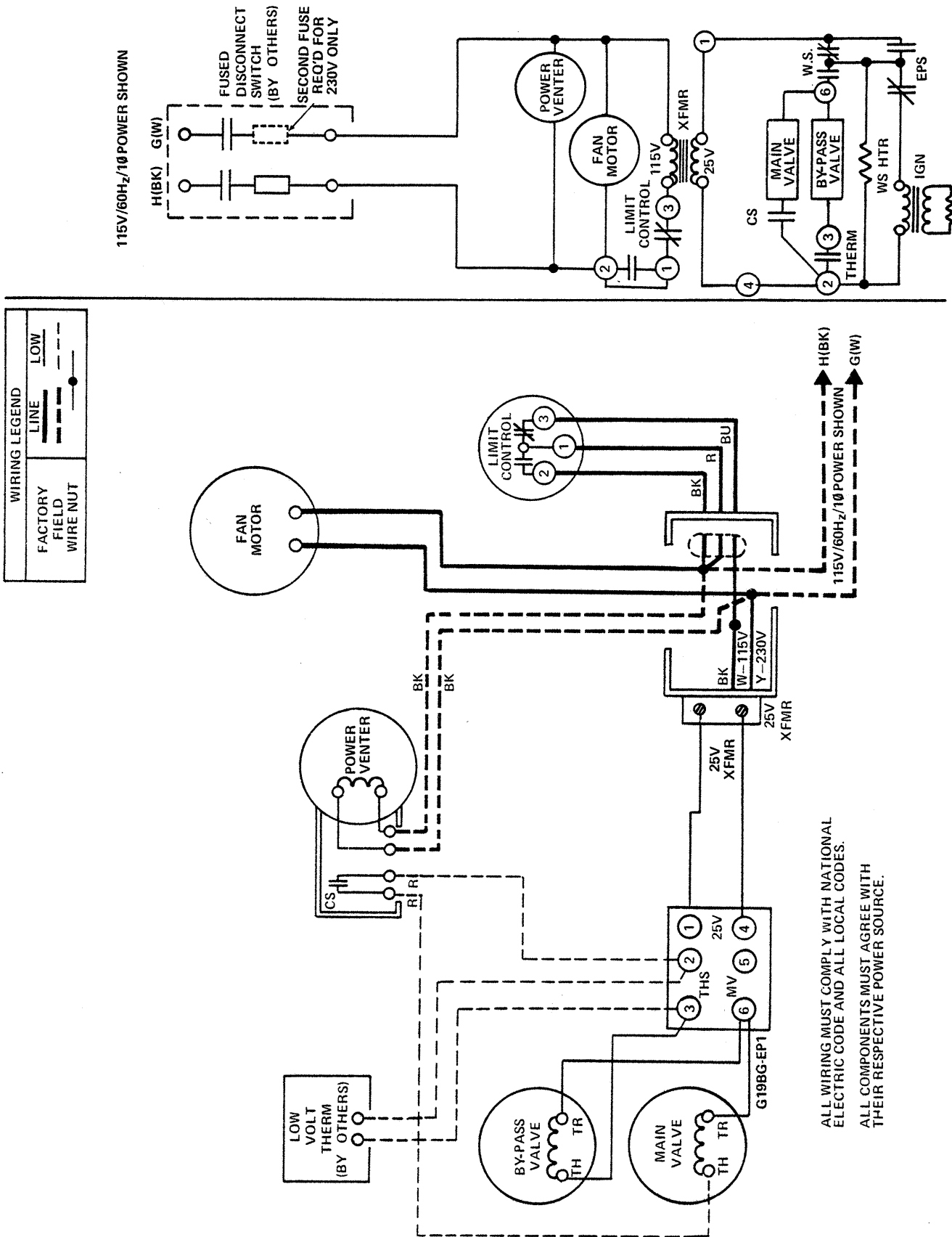
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

*TRANSFORMER NOT REQUIRED WITH 208 or 230V/3Ø POWER SUPPLY USED WITH CONTROL CODE 34



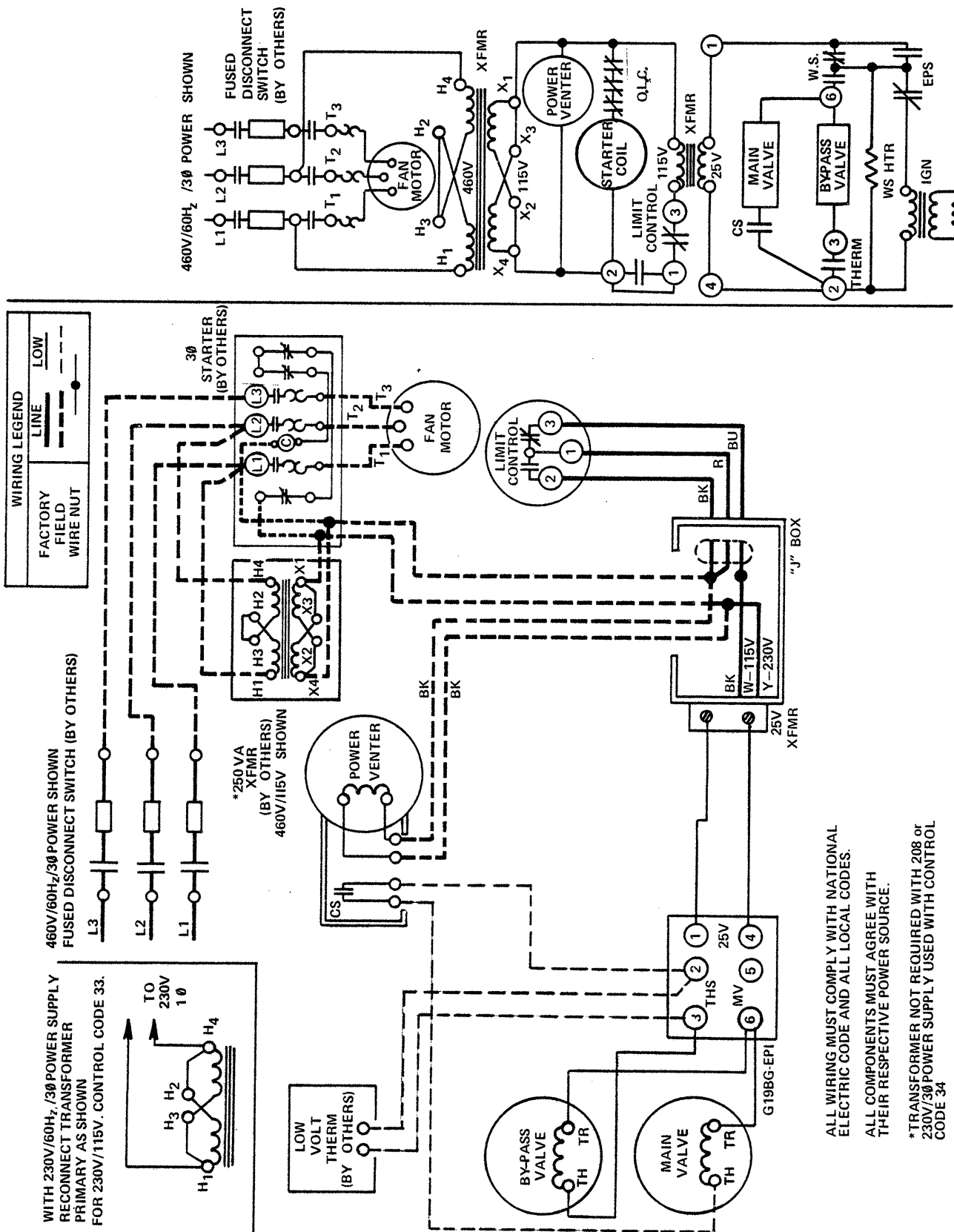
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WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



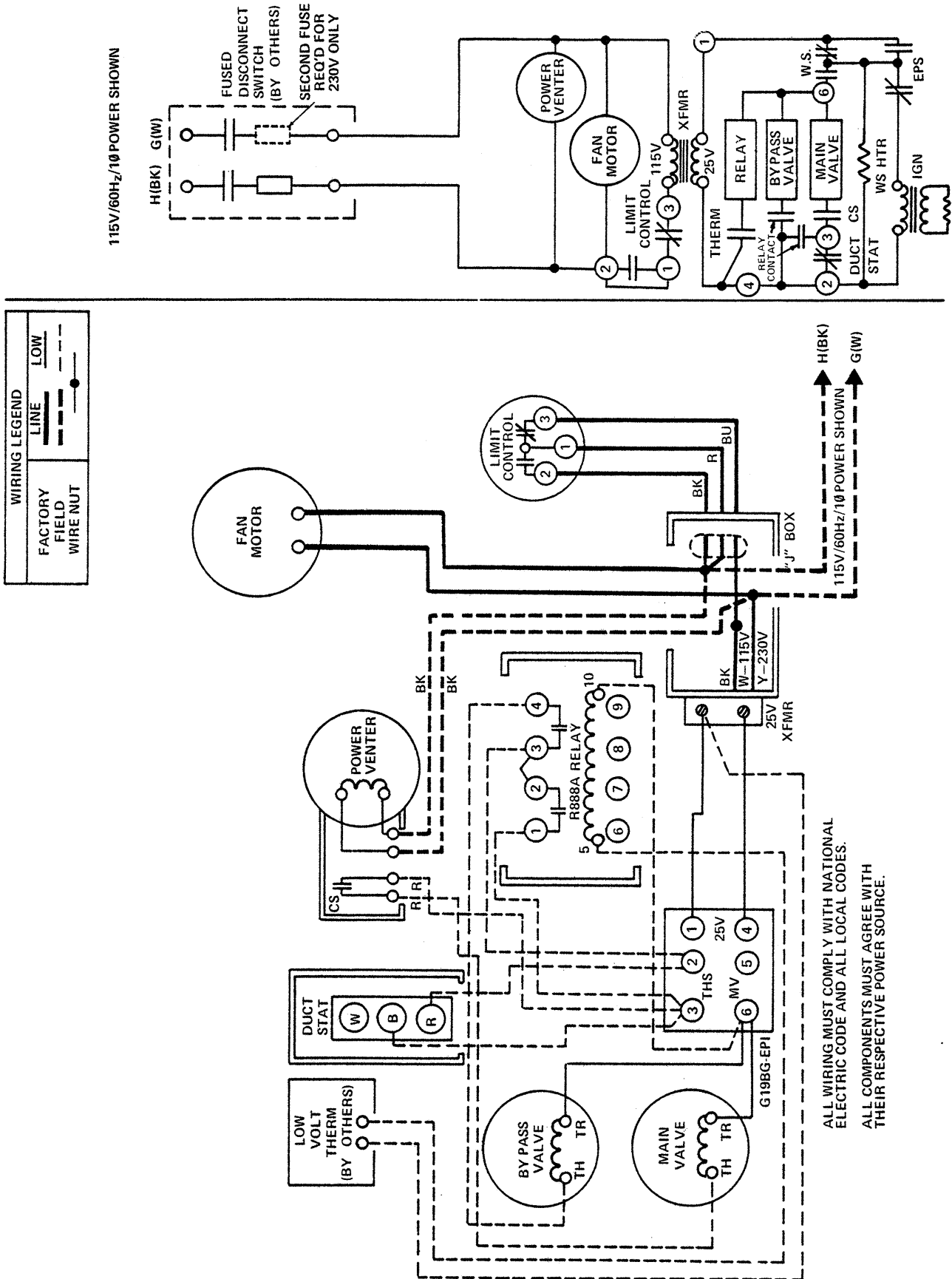
8H5985A188—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, single phase. Control codes 33, 34.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



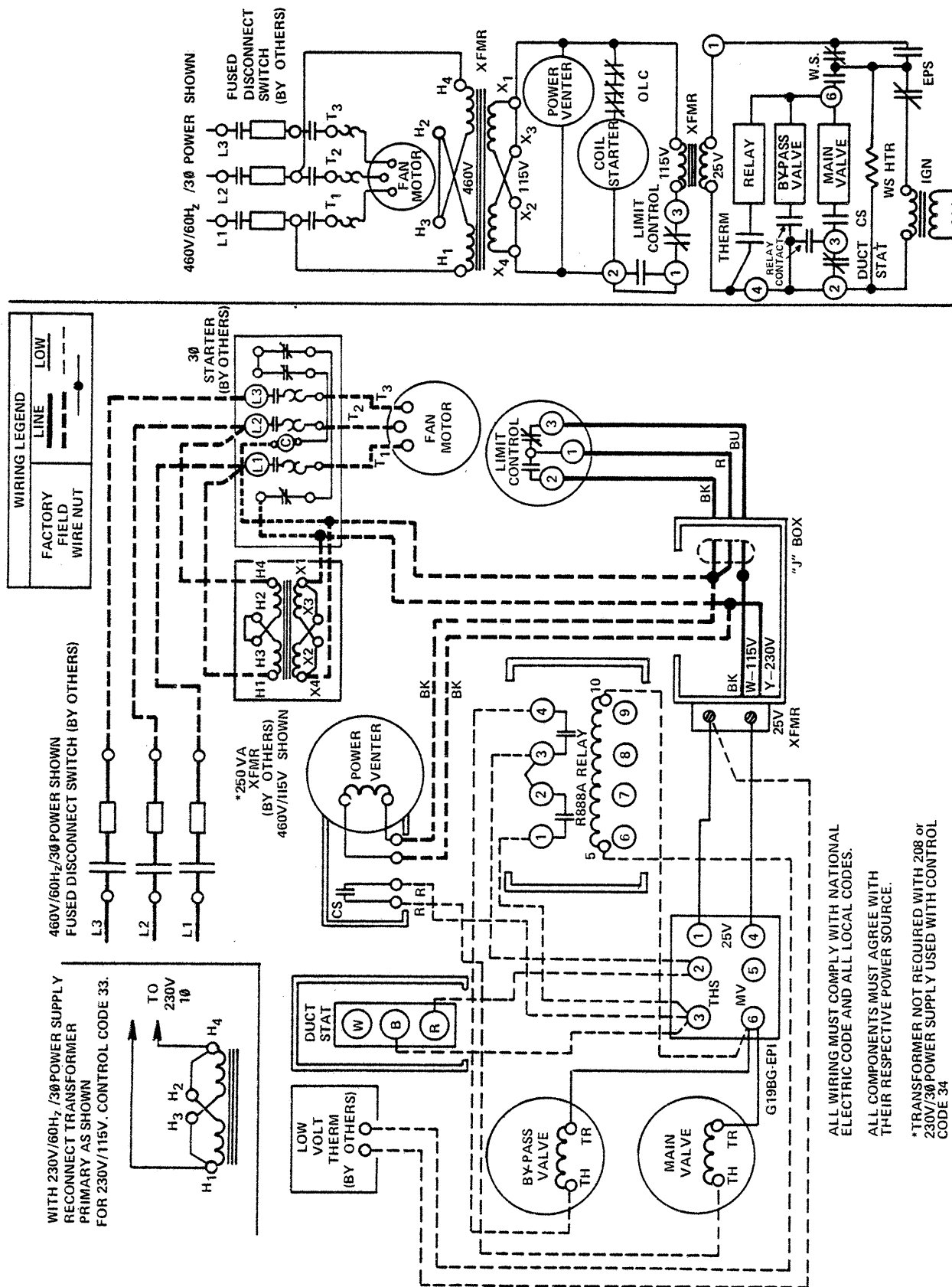
8H5985A196—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, three phase. Control codes 33, 34.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A189—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, non-100% shut-off, electric pilot ignition, BA-250, BA-300, single phase. Control codes 33, 34.

WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS



8H5985A 197—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, power venter, non-100% shut-off, electric pilot ignition, BA-250, BA-300, three phase. Control codes 33, 34.