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/1φ diagrams may be utilized for 230V/60Hz/1φ by substituting 230-volt components for the 115-volt shown. The 460V/60Hz/3φ diagrams may be converted to 208V/60Hz/3φ by substituting a 208V/115V transformer for the 460V/115V model shown.

The 460V/60Hz/3φ diagrams may be modified to 230/60Hz/3φ 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/1φ 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

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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:

- Transformer: XFRM or TR
- Volts: V
- Cycle or Hertz: Hz
- Phase: φ
- Limit Control: LC
- Thermostat: THERM or TH
- Main Valve: MV
- Pilot Valve: PV
- Shut Off: SO
- Electric Pilot Ignition Controller: EPI
- Ground: G
- Heater: HTR
- Hot: H
- Switch: SW
- Ignitor Coll: IGN
- Electric Pilot Switch: EPS
- High: HI
- Low: LO
- Common: C
- Junction Box: W.S.
- Transformer Primary Terminals: H₁, H₂, etc.
- Summer Contact (Summer-Winter Switch): SUM
- Winter Contact (Summer-Winter Switch): WIN
- Summer-Winter Switch: S-W
- Transformer Relay Contact: TRC
- Overload Contact: O.L.C.
- Power Venter Centrifugal Switch: C.V.
- Fan Timer Contact: FT.
- Single-Pole Double-Throw Switch: SPD
- Volt Ampere: VA
- Watts: W

WIRE COLOR CODING

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

MODINE MANUFACTURING COMPANY • 1500 DE KOVEN AVENUE, RACINE, WISCONSIN 53401

Lithe in U.S.A.
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*Two stage low voltage stat.

Page II
### WIRING DIAGRAMS, MODELS PA, BA, GAS-FIRED UNIT HEATERS

#### SELECTION CHART

<table>
<thead>
<tr>
<th>Power Supply</th>
<th>Low Volt Dust Stat</th>
<th>Low Voltage Stat</th>
<th>Summer Winter Switch</th>
<th>Line Volt Power Venter</th>
<th>Fan Time Delay</th>
<th>Low Volt Power Venter</th>
<th>Non-100% Shut-off E.P.I.</th>
<th>100% Shut-off E.P.I.</th>
<th>2-Stage Gas Valve Low Volt</th>
<th>Mechanical Modulation</th>
<th>Mechanical Modulation w/ Extended Bypass</th>
<th>Control Code</th>
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<th>Drawing No.</th>
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* 2 stage low voltage stat.
▲ BA Models Only.

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

115V/60Hz/10 POWER SHOWN
H(BK) G(W) FUSED DISCONNECT SWITCH (BY OTHERS)
SECOND FUSE REQ'D 230V ONLY

FAN MOTOR
LIMIT CONTROL
1 2 3

MAIN VALVE

"J" BOX

G(W) H(BK) 115V/60Hz/10 POWER SHOWN

8H5985A156—Standard control with line voltage, single phase. Control codes 01, 02, 71, 72.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE

8H5985A167—Standard control with line voltage thermostat, S-W switch, single phase. Control codes 01, 02, 71, 72.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A166—Transformer relay, power venter, low voltage thermostat, single phase. Control codes 06, 07.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A201—Fan time delay, low voltage thermostat, S-W switch, single phase. Control codes 11, 12, 81, 82.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A198—Fan time delay, low voltage controlled power venter, low voltage thermostat, single phase. Control codes 11, 12, 81, 82.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

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

WITH 230V/60Hz/3Ph POWER SHOWN FUSED DISCONNECT SWITCH BY OTHERS

400V/60Hz/3Ph POWER SHOWN 600V/230V POWER SHOWN FUSED DISCONNECT SWITCH BY OTHERS

400V/60Hz/3Ph POWER SHOWN

FACTORY WIRE NUT

WITH 230V/60Hz/3Ph POWER SUPPLY RECONNECT TRANSFORMER FOR 230V/135V CONTROL CODE 16

WIRING LEGEND

LOW

FAN MOTOR

FAN TIMER

MAIN VALVE

SWITCH

LOW VOLT THERMAL LIMITER

LIMITER

TRANSFORMER NOT REQUIRED WITH 298 OR 297 POWER SUPPLY USED WITH CONTROL CODE 17

ALL WIRING MUST COMPLY WITH LOCAL ELECTRICAL CODES. COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H589A214—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, S-W switch, three phase. Control Codes 16, 17.

Page 24
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 Ω POWER SUPPLY USED WITH CONTROL CODES 17 AND PV-224 POWER VENTER.

BH5985A215—Non-100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, low voltage controlled power venter, S-W switch, three phase. Control codes 16, 17.
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.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5986A206—100% shut-off, electric pilot ignition, fan time delay, low voltage thermostat, Summer-Winter switch, low voltage controlled power venter, single phase. Control codes 18, 19, 86, 87.
FOR 230V/60Hz/3P POWER SUPPLY
RECONNECT TRANSFORMER
PRIMARY AS SHOWN FOR 230V/115V
CONTROL CODES 25, 83.

2 STAGE LOW VOLT
THERM

MAIN VALVE HI

MAIN VALVE LO

2 STAGE VALVE

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/3P POWER SUPPLY USED WITH
CONTROL CODES 26-84.

BH6985A229—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, S-W switch, three phase. Control codes 25, 26, 83, 84.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H9695A219—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.
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 230V/3PH POWER SUPPLY USED WITH CONTROL CODES 26 AND 84 AND PV-224 POWER VENTER

8H959A228—2-stage gas valve, fan time delay, 2-stage low voltage thermostat, low voltage controlled power venter, three phase. Control codes 26, 28, 83, 84.
2 STAGE LOW VOLT THERM (BY OTHERS)

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

8HS985A158—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, single phase. Control codes 35, 36.
8HE885A222 — 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.
For 380V/60Hz/3Ø Power Supply
Reconnect Transformer
Primary as shown for 230V/115V
Control codes 35.

Fused Disconnect Switch (by others)

250VA X FMR
460V/115V shown
(by others)

2 Stage Low Volt Therm

2 Stage Valve

25V Relay

Power Venter

Fan Timer

Fan Motor

Jumper

Limit Control

"J" Box & Ext Ring

Main Valve HI

Main Valve LO

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

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

*FOR 230V/40Hz/3Ø POWER SUPPLY
RECONNECT TRANSFORMER
PRIMARY AS SHOWN FOR CONTROL CODES 36 AND PV-224 POWER VENTER

8H6985A232—2-stage gas valve, non-100% shut-off, electric pilot ignition, fan time delay, 2-stage low voltage thermostat, low voltage controlled power vent, three phase. Control codes 35, 36.
8H5985A223—2-stage gas valve, non-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 35, 36.
All wiring must comply with national electric code and all local codes.

All components must agree with their respective power source.

8H985A159 — 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.
WITH 230V/60Hz/3Ø POWER SUPPLY RECONNECT TRANSFORMER PRIMARY AS SHOWN FOR 230V/115V. CONTROL CODE 45, 88.

FUSED DISCONNECT SWITCH (BY OTHERS)

*75VA XFMR 460V/115V SHOWN (BY OTHERS)

2 STAGE LOW VOLT THERM

2 STAGE VALVE

MAIN VALVE HI

MAIN VALVE LO

PILOT VALVE

WIRING LEGEND

FACTORY FIELD WIRE IN

LINE LOW

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 46 AND 89.

8H5995A235—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.
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.
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/38 POWER SUPPLY USED WITH CONTROL CODES 46, 88, AND PV-224 POWER VENTER

8H5986A238—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.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A136—Straight mechanical modulation, BA-50 thru BA-225, single phase. Control codes 21, 22.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5986A137—Straight mechanical modulation, duct stat, BA-250 thru BA-400, single phase. Control codes 21, 22.
WITH 230V/60Hz /38 POWER SUPPLY
RECONNECT TRANSFORMER
PRIMARY AS SHOWN
FOR 230V/115V. CONTROL CODE 21.

460V/60Hz /38 POWER SHOWN
FUSED DISCONNECT SWITCH (BY OTHERS)

L3
L2
L1

TO
230V
18

H1 H3 H2 H4

* 250VA XFMR
(BY OTHERS)
460V/115V SHOWN

H1 H3 H2 H4

POWER VENTER

MAIN VALVE

CS
R
BK
BK

RF

L1 L2 L3

38 STARTER
(BY OTHERS)

460V/60Hz /38 POWER SHOWN

FUSED DISCONNECT SWITCH
(BY OTHERS)

H1 H3 H2 H4

FAN MOTOR

LIMIT CONTROL

1 2

TH TR

20V

XFMAR

"J" BOX

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/38 POWER SUPPLY USED WITH CONTROL
CODE 22

BHS985A178—Straight mechanical modulation, power venter BA-50 thru BA-225, three phase. Control codes 21, 22.
WIRING LEGEND

FACTORY FIELD WIRE NUT

LINE

LOW

115V/60Hz/1Ø POWER SHOWN
H(BK) G(W)

FUSED DISCONNECT SWITCH (BY OTHERS)
SECOND FUSE REQ'D FOR 230V ONLY

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.

8H5985A175—Straight mechanical modulation, low voltage duct stat, power venter BA-250 thru BA-400, single phase. Control codes 21, 22.
FOR 230V/50Hz/3φ POWER SUPPLY RECONNECT TRANSFORMER PRIMARY AS SHOWN FOR 230V/115V CONTROL CODES 21

FUSED DISCONNECT SWITCH (BY OTHERS)

460/60Hz/3φ POWER SHOWN

FUSED DISCONNECT SWITCH (BY OTHERS)

*250VA X FRM
460V/115V SHOWN (BY OTHERS)

POWER VENTER

FAN MOTOR

STARTER

LIMIT CONTROL

DUCT STAT

MAIN VALVE

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/3φ POWER SUPPLY USED WITH CONTROL CODE 22.

BH5985A179—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

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

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/3PH POWER SUPPLY USED WITH CONTROL CODE 24

8H5985A192—Straight mechanical modulation with solenoid bypass, low voltage thermostat, power venter, BA-50 thru BA-225, three phase. Control codes 23, 24.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5985A151—Straight mechanical modulation, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, single phase. Control codes 31, 32.
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 32

BH5885A180—Straight mechanical modulation, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225, single phase. Control codes 31, 32.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

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.
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/38 POWER SUPPLY USED WITH CONTROL CODE 32

BH5985A181—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

115V/60Hz/10POWER SHOWN

FUSED DISCONNECT
115V

MAIN VALVE

FAN MOTOR

LIMIT CONTROL

115V

25V

WS

V

WS HTR

IGN

H BK

G W

"J" BOX

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

G 985 EPI

CS

R R BK

115V/60Hz/10POWER SHOWN

Page 81
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/3PH POWER SUPPLY USED WITH CONTROL CODE 32

8H5985A184—Straight mechanical modulation, power venter, non-100% shut-off, electric pilot ignition, BA-50 thru BA-226, three phase. Control codes 31, 32.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

BH6985A183—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.
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.
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-228, single phase. Control codes 33, 34.
WIRING DIAGRAM, MODELS PA, BA, GAS-FIRED UNIT HEATERS

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8H985A194—Straight mechanical modulaton with solenoid bypass, low voltage thermostat, non-100% shut-off, electric pilot ignition, BA-50 thru BA-225. Three phase. Control codes 33, 34.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

8H5986A154—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/3Ø POWER SUPPLY
RECONNECT TRANSFORMER
PRIMARY AS SHOWN
FOR 230V/115V. CONTROL CODE 33.

LOW VOLT THERM
(BY OTHERS)

DUCT STAT
N
R
W

BY-PASS VALVE
TH TR

MAIN VALVE
TH TR

LIMIT CONTROL
1
2
3

FUSED DISCONNECT SWITCH (BY OTHERS)

60V/60HZ/3Ø POWER SHOWN
* 75 VA
XFMR
(BY OTHERS)
460V/115V SHOWN

WIRING LEGEND
FACTORY FIELD WIRE NUT
LINE LOW

60V/60HZ/3Ø POWER SHOWN
FUSED DISCONNECT SWITCH (BY OTHERS)

460V/60HZ/3Ø POWER SHOWN

STARTER
(BY OTHERS)

FUSED DISCONNECT SWITCH (BY OTHERS)

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 34.

8H5985A195—Straight mechanical modulation with solenoid bypass, low voltage thermostat, low voltage duct stat, non-100% shut-off, electric pilot ignition, BA-250, BA-300, three phase. Control codes 33, 34.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

BH5985A188—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.
WITH 230V/60HZ/3Ø POWER SUPPLY RECONNECT TRANSFORMER PRIMARY AS SHOWN FOR 230V/115V, CONTROL CODE 33.

LOW VOLT THERM (BY OTHERS)

BY-PASS VALVE TH TR

MAIN VALVE TH TR

G198G-EPH

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 34

8H6985A186—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.