WIRING DIAGRAMS
for models PA, BA, gas-fired unit heaters
manufactured after August 1984
For units manufactured before September 1984 see Bulletin #6-430.3

DIAGRAM SELECTION
Diagrams are provided for both single- and three-phase circuits, and are readily identified in the Selection Table on the following page. The Selection Table enables easy selection of the correct wiring diagram after the electrical components of the unit heater have been determined. The control codes are listed to aid in locating the correct diagram.

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 / 60 Hz / 1Ø diagrams may also be utilized for 230V / 60 Hz / 1Ø by substituting 230-volt components for the 115-volt shown.
The 460V / 60 Hz / 3Ø diagrams may be converted to 208V / 60V / 3Ø by substituting a 208V / 115V transformer for 460V / 115V model shown.
The 460V / 60Hz 3Ø diagrams may be modified to 230V / 60V / 3Ø 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 / 1Ø 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 with their respective power source.

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<th>POWER REQUIREMENTS — PROPELLER AND BLOWER MOTORS</th>
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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.

- **“J” Box**
- **H1, H2, etc.**
- **SUM**
- **WIN**
- **S-W**
- **O.L.C.**
- **C.S.**
- **FTc**
- **SPDT**
- **VA**
- **W**
- **WIRE COLOR CODING**
  - **BK**
  - **BL**
  - **R**
  - **W**
  - **Y**
  - **X1, X2, etc.**
  - **L1, L2, etc.**
  - **L1, T2, etc.**

MODINE MANUFACTURING COMPANY • 1500 DE KOVEN AVENUE, RACINE, WISCONSIN 53401
PHONE: 414/636-1200 TELEX: 26-4447

TLS85 Litho in U.S.A.
6-441 WIRING DIAGRAM MODELS PA/BA

WIRING DIAGRAM SELECTION

A) Field and Submittal Wiring Diagram Selection
Wiring in the field changes little when the brand of the controls furnished on the unit heater changes. Select correct wiring diagrams as follows:
1) Determine unit heater model and size.
2) Select control code number from Table 1.
3) Reference unit heater model in the Page Location Index with control code number and determine correct page number for single-phase or three-phase control. Single-phase wiring diagram page numbers are in the unshaded areas and three-phase diagrams are in the shaded areas.
4) Wiring diagrams for unit heaters with accessories will have the same page number as the wiring diagram for the appropriate unit heater control code, but are suffixed according to Table 2.

B) Service and Trouble Shooting
Because internal or factory wiring may vary depending on controls manufacturer, the wiring diagrams must be selected with the series identity number when servicing or trouble shooting unit heater control system. Wiring diagrams in this bulletin are for unit heaters manufactured after August 1984 and the series identity number is the 5th thru the 7th digits of the unit heater serial number.

EXAMPLE: Serial No. — 02021080984 has a series identity number of 108.

To select the correct wiring diagram:
1) Determine unit heater model and size from serial plate located on the rear of the unit.
2) Determine the control code numbers from box marked Control Code, also on the serial plate.
3) Determine the series identity number from unit serial number.

4) Select the Page Location Index which corresponds to the series identity number of the unit heater, then proceed with Steps 3 and 4 of Field and Submittal Wiring Diagram Selection.

EXAMPLE SELECTION

Locate the Page Location Index which shows the page numbers for units with series identity number 108. Select the page number where the column for the BA-170 intersects with the line for control code 28. The correct single phase wiring diagram for this unit, without accessories, is found on page 15 in the unshaded area. If this unit also had a power venter the correct wiring diagram would be found on page 15b as determined from the page suffixes shown in Table 2.

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.

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<th>CONTROL CODE DESCRIPTIONS</th>
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<td>08, 09 Intermittent Pilot Ignition, Non-Lockout, fan-time delay, low voltage thermostat, Natural Gas.</td>
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<tr>
<td>11, 12 Standing Pilot, 100% Shut-Off, fan-time delay, low voltage thermostat, Natural Gas.</td>
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<td>25, 26 Two Stage, Standing Pilot, 100% Shut-Off, Natural Gas.</td>
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<td>28, 29 Intermittent Pilot Ignition with Lockout, fan-time delay, low voltage thermostat, Natural Gas.</td>
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<td>83, 84 Two-Stage, Standing Pilot, 100% Shut-Off, Propane Gas.</td>
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PAGE LOCATION INDEX: Series Identity Number 109
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

8H6490B61 — Single-phase, 2-stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch. (Rev. A)
8H6490862 — Single-phase, 2-stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
8H6490B65 — Three-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3P POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

115/230V

T1 T2 T3
250VA XFMR
(BY OTHERS)

3W STARTER
(BY OTHERS)

TO L1 XFMR
TO L2 XFMR

CAUTION

FAILURE TO WIRE THIS UNIT ACCORDING
TO THIS WIRING DIAGRAM MAY RESULT
IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND

FACTORY FIELD WIRE NUT

230V/60Hz/3P POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

230V/60Hz/3P POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

3W STARTER
(BY OTHERS)

TO ° FAN TIMER
TO ° FAN TIMER

2-STAGE LOW VOLT THERM
(BY OTHERS)

SPDT SW.

24V RELAY

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*FUSE

*24V XFMR

24V XFMR

*DUMP BOX

*ALTERNATE XFMR.
PRIMARY XFMR WIRE 230V/60Hz/1P/120V OR 2P
208V/60Hz/1P/208V OR 2P
WIRE NUT THE WIRE NOT USED
†FOR CANADIAN UNITS ONLY

† FOR CANADIAN UNITS ONLY

8H6490B66 — Three-phase, 2 stage gas valve, standing pilot, 100% shut-off,
fan time delay, 2-stage low-voltage thermostat, summer/winter switch
low-voltage controlled power venter. (Rev. A)
5H70081B29 — Single-phase, mechanical modulation, intermittent pilot ignition, non-100% (and 100%) shut-off. (Rev. F)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEM RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

#ALTERNATE XFRM.
PRIMARY XFRM WIRES
230V/60Hz/1#-BAYONET D)
200V/60Hz/1#-BAY.
WIRE NUT THE WIRE NOT USED
# FOR CANADIAN UNITS ONLY

5H70081B29 — Three-phase, mechanical modulation, intermittent pilot ignition,
non-100% (and 100%) shut-off. (Rev. F)
CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY L1(2K) L2(2K)
FIELD WIRE NUT
24V.

115V/60Hz/1# POWER SHOWN
FUSED DISCONNECT SWITCH (BY OTHERS)
SECOND FUSE AND SWITCH REG'D FOR 230V, 200V

FAN MOTOR
POWER VENTER

RELAY CONTACT
24V.

FUSED DISCONNECT SWITCH (BY OTHERS)
115V/60Hz/1# POWER SHOWN
SECOND FUSE AND SWITCH REG'D FOR 230V, 200V

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/1# (BK/W OR G)
200V/60Hz/1# (BK/W)
WIRE NUT THE WIRE NOT USED
†FOR CANADIAN UNITS ONLY

8H6490B79 — Single-phase, mechanical modulation, intermittent pilot ignition, non-100% (and 100%) shut-off, low-voltage controlled power venter. (Rev. A)
5H70081B30 — Single-phase, 2-stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat. (Rev. D)
57/008/130 — Three-phase, 2-stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat. (Rev. D)
8H6490B67 — Single-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch. (Rev. A)
8H6490B70 — Three-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch. (Rev. A)
8H6490B68 — Single-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
9M640B71 - Three-phase, 2-stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, low-voltage controlled power vent (Rev. A)

FOR U.S. UNITS ONLY

220V/60Hz/CM POWER SUPPLY

NOT TO SCALE

DIAMER AND SAFETY DEVICE

NOTE TO INSTALLER: ATTACH THIS DIAGRAM NEAR HEATER. ALL WIRE MUST BE CORRECTLY WELDED WITH INACTUAL SERIES CONNECTION WITH CORRECT GAUGE AND WIRE. USE 105°C WIRE FOR REPLACEMENTS.
8H6490869 — Single-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch, low-voltage controlled power venter. (Rev. A)
8H6490B72 — Three-phase, 2 stage gas valve, standing pilot, 100% shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch, low-voltage controlled power venter. (Rev. A)
CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND

FACTORY WIRE
FIELD WIRE
WIRE NUT

115V/60Hz/1# POWER SHOWN
L1(BK) L2(W)

FUSED DISCONNECT
SWITCH (BY OTHERS)

SECOND FUSE AND
SWITCH REG'D
FOR 230V, 208V, 1#

FAN TIMER
CONTACT

FAN TIMER

2-STAGE THERM.

FUSED DISCONNECT
SWITCH (BY OTHERS)
115V/60Hz/1# POWER SHOWN
L1(W)
L2(BK)
SECOND FUSE AND
SWITCH REG'D
FOR 230V, 208V, 1#

"J" BOX

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/1#-BK(W/GR 0)
208V/60Hz/1#-BK(W/GR 0)
WIRE NUT THE WIRE NOT USED

* FOR CANADIAN UNITS ONLY

5H70081B34 — Single-phase, 2-stage gas valve, intermittent ignition, non-100% (and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat. (Rev. B)
5H7081B34 — Three-phase, 2-stage gas valve, intermittent ignition, non-100% (and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat. (Rev. B)
8H6490B87 — Single-phase, 2 stage gas valve, intermittent ignition, non-100% (and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3-φ POWER SHOWN
FUSED DISCONNECT SWITCH
(by others)

115/230V
75VA XFRM
(by others)
T1, T2, T3
3φ STARTER
(by others)
TO L1 XFRMR
TO L2 XFRMR

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(by others)

LIMIT CONTROL
SPOT SW
FAN TIMER
MAIN GAS VALVE
Pilot Valve

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRING
230V/60Hz/1φ-9140 (or 0) 200V/60Hz/1φ-9140
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

8H6490B90 — Three-phase, 2 stage gas valve, intermittent ignition, non-1000%
(and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat,
low-voltage controlled power venter. (Rev. A)
8H6490B88 — Single-phase, 2 stage gas valve, intermittent ignition, non-100% (and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3-phase power shown
Fused disconnect switch
(by others)

2-stage low-voltage thermostat
(120V, 24V)

24V relay

Power vent controller

Fan timer

Limit control

Motor

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRING:
230V/60Hz/14-gauge 0/2
200V/60Hz/14-gauge 0/2
WIRE NOT USED

1 FOR CANADIAN UNITS ONLY

8H6490B91 — Three-phase, 2-stage gas valve, intermittent ignition non-100%
(and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat,
low-voltage controlled power vent. (Rev. A)
8H6490B89 — Single-phase, 2 stage gas valve, intermittent ignition, non-100% (and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat, summer/winter switch, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3Φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

5/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

256 VA XFMR
(BY OTHERS)

TO L1 XFMR
TO L2 XFMR
TO L3 XFMR

2-Stage Low Volt Therm
(BY OTHERS)

SPOT SW

24V RELAY

POWER VENT IL

FAN MOTOR

LIMIT CONTROL

WINTER

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/50Hz/1Φ-BRADOR OR 0)
200V/60Hz/1Φ-BEAR
WIRE NOT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

FOR CANADIAN UNITS ONLY

8H6490B92 — Three-phase, 2 stage gas valve, intermittent ignition, non-100%
(and 100%) shut-off, fan time delay, 2-stage low-voltage thermostat,
summer/winter switch, low-voltage controlled power venter. (Rev. A)
CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER. ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE. USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/1#-BKLY(R OR 0)
200V/60Hz/1#-BKAR
WIRE NUT THE WIRE NOT USED
+FOR CANADIAN UNITS ONLY

FUSED DISCONNECT SWITCH (BY OTHERS)
115V/60Hz/1# POWER SHOWN
L1(BK) L2(CW)

SECOND FUSE AND SWITCH REG'D FOR 230V/200V. 1#

INDICATES TRANSFORMER TERMINAL
+ FOR CANADIAN UNITS ONLY

5H70081B37 — Single-phase, standing pilot, 100% shut-off, fan time delay, low-voltage thermostat. (Rev. B)
5H70081B37 — Three-phase, standing pilot, 100% shut-off, fan time delay, low-voltage thermostat. (Rev. B)

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*FBXFR
PRIMARY XFMR WIRES
230V/60Hz/1φ-BAXY (OR 0)
200V/60Hz/1φ-BAXR
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

FOR U.S. UNITS ONLY
460V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

75VA XFMR
(BY OTHERS)
3φ STARTER
(BY OTHERS)
150°C FAN TIMER

WIRING LEGEND
FACTORY FITED WIRES NUT

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

L3
L2
L1
T1
T2
T3

FAN MOTOR
LIMIT CONTROL

FAN TIMER CONTACT
D.L.C.
STARTER COIL

THERM. 24V
1FUSE

MAIN VALVE
REEDUANT OPERATOR

*FBXFR

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)
For U.S. Units Only

460V/60Hz/3# Power Shown
Fused Disconnect Switch (by others)

115V/230V

75VA XFRM (by others)

T1 T2 T3

(by others)

To L1 XFRM
To L2 XFRM

Low Volt Therm (by others)

Fuse

Main Valve
REDUNDANT OPERATOR

Wiring Legend

Factory Field Wire Nut

Line 24V+

230V/60Hz/3# Power Shown
Fused Disconnect Switch (by others)

3# Starter (by others)

Factory motor

Limit Control

Therm.

1FUSE

Main Valve

Indicates Transformer Terminal

1For Canadian Units Only

*24V XFRM

*24V XFRM

1Alternate XFRM

Primary XFRM Wires
230V/60Hz/1# BRK (OR 0)

200V/60Hz/1# BKMR

Wire Nut The Wire Not Used

#For Canadian Units Only

8H6490B99 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch
CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND

FACTORY FIELDLINE 24V.
WIRE NUT

L1(BK) L2(W)
FUSED DISCONNECT SWITCH (BY OTHERS)
SECOND FUSE AND SWITCH REG'D FOR 230V, 200V, 1#

115V/60Hz/1# POWER SHOWN

FAN TIMER CONTACT
PWR ON/OFF

FAN MOTOR

RELAY CONTACT

POWER VENTER

RELAY COIL

LIMIT CONTROL

MAIN VALVE

INDICATES TRANSFORMER TERMINAL
† FOR CANADIAN UNITS ONLY

FUSED DISCONNECT SWITCH (BY OTHERS)

SECOND FUSE AND SWITCH REG'D FOR 230V, 200V, 1#

ALTERNATEXFMR.
PRIMARY XFMR WIRES
230V/60Hz/1#-BK&WR
208V/60Hz/1#-BK&W
WIRE NUT THE WIRE NOT USED
† FOR CANADIAN UNITS ONLY

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 16G/C WIRE FOR REPLACEMENTS.

8H6490B100 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
MODINE 6-441 WIRING DIAGRAM MODELS PA, BA

FOR U.S. UNITS ONLY

460V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

250VA XFMR
(BY OTHERS)

T1 T2 T3
3φ STARTER
(BY OTHERS)

TO L1 XFMR
TO L2 XFMR

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING
TO THIS WIRING DIAGRAM MAY RESULT
IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY
FIELD
WIRE NUT
LINE 24V

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

3φ STARTER
(BY OTHERS)

TO L1 XFMR
TO L2 XFMR

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/1φ-BKX OR G
200V/60Hz/1φ-BKX
WIRE NUT THE WIRE NOT USED
+ FOR CANADIAN UNITS ONLY

8H6490B100 — Three-phase standing pilot, 100% shut-off, fan time
delay, low-voltage thermostat, low-voltage controlled
power venter.
8H6490B101 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch low-voltage controlled power venter.
8H6490B101 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch, low-voltage controlled power venter.
8H6490B93 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch.
8H6490B93 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch
MODEL 6-441 WIRING DIAGRAM MODELS PA, BA

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
- FACTORY WIRE
- FIELD WIRE
- LINE 24V
- WIRE NUT

115V/60Hz/1φ POWER SHOWN
L1(BK)  L2(W)

FUSED DISCONNECT
SWITCH (BY OTHERS)

SECOND FUSE AND
SWITCH RED'D
FOR 230V, 200V, 1φ

FAN TIMER
CONTACT

FAN MOTOR

RELAY CONTACT

RELAY
COIL

LIMIT CONTROL
COIL

INDICATES TRANSFORMER TERMINAL
1 FOR CANADIAN UNITS ONLY

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR:
PRIMARY XFMR WIRES
230V/60Hz/1φ—BK(W) (OR G)
200V/60Hz/1φ—BK(W)
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

8H6490B94 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter
8H6490B94 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
8H6490B95 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch, low-voltage controlled power venter.
8H6490B95 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch low-voltage controlled power venter.
5H70081B38 — Three-phase, standing pilot, 100% shut-off, fan time delay, low-voltage thermostat. (Rev. A)
MODINE 6-441 WIRING DIAGRAM MODELS PA, BA

FOR U.S. UNITS ONLY

460V/60Hz/3# POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

L3
L2
L1

15/230V

75VA XFMR
(BY OTHERS)
T1 T2 T3
3# STARTER
(BY OTHERS)
TO L1 XFMR
TO L2 XFMR

460V

230V/60Hz/3# POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

3# STARTER
(BY OTHERS)

SPOD SW
SUMMER
WINTER

LOW VOLT THERM
(BY OTHERS)

FUSE

LIMIT CONTROL

FAN MOTOR

8H6490B102 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch.
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/#-masyor OR D
200V/60Hz/#-BSKR
WIRE NOT THE WIRE NOT USED
FOR CANADIAN UNITS ONLY

115V/60Hz/# POWER SHOWN
L1(BK) L2(W)
SECOND FUSE AND SWITCH REG'D FOR 230V, 200V, 1#

INDICATES TRANSFORMER TERMINAL
FOR CANADIAN UNITS ONLY

8H6490B102 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch.
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES 230V/60Hz/3#-BK&Y (OR 0)
208V/60Hz/3#-BK&AR
WIRE NUT THE WIRE NOT USED
+ FOR CANADIAN UNITS ONLY

+INDICATES TRANSFORMER TERMINAL
+ FOR CANADIAN UNITS ONLY

8H6490B103 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
8H6490B103 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
8H6490B104 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch, low-voltage thermostat, controlled power venter.
MODINE 6-441 WIRING DIAGRAM MODELS PA, BA

NOTE: To Installer: All Modine outdoor units are listed under National Electric Code and all local codes. Use No. 14 wire for components. Use No. 12 wire for interconnecting wires.

115V/60Hz X4 POWER SUPPLY L1 L2 L3 4-WIRE GROUND L1 L2 L3 4-WIRE 220V/60Hz POWER SUPPLY L1 L2 L3 4-WIRE 220V/60Hz POWER SUPPLY L1 L2 L3 4-WIRE

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THE INSTALLER'S OR USER'S
FOR DEVIATIONS CONTACT THE FACTORY.

1504080B104 — Single-phase standing pilot, 100% shut-off fan line,
delay, low-voltage thermostat, summer/winter switch.
low-voltage thermostat, controlled power vent.
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/1#-BK&YL OR 0
200V/60Hz/1#-BK&R
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

5H70081B32 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat. (Rev. B)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRES
230V/60Hz/14-BK/Y/OL (0)
208V/60Hz/14-BK/R
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

5H70081B32 — Three-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat. (Rev. B)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRE
230V/60Hz/1#-BK&R (OR 0)
200V/60Hz/1#-BK&R
WIRE NUT THE WIRE NOT USED
+FOR CANADIAN UNITS ONLY

FUSED DISCONNECT SWITCH (BY OTHERS)
115V/60Hz/1# POWER SHOWN
L1(BK) L2(W)
SECOND FUSE AND
SWITCH REQ'D
FOR 230V, 200V, 1#

8H6490B81 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shutdown, fan time delay, low-voltage thermostat, summer-winter switch. (Rev. A)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM. PRIMARY XFRM WIRE
230V/60Hz/1φ (REATOR O)
200V/60Hz/1φ (BXR)
WIRE WIT THE WIRE NOT USED
† FOR CANADIAN UNITS ONLY

8H6490B81 — Three-phase, intermittent pilot ignition, non-100% (and 100%) shut-off, fan time delay, low-voltage thermostat, summer-winter switch. (Rev. A)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

24V RELAY

POWER VENTER

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING
TO THIS WIRING DIAGRAM MAY RESULT
IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

FAN TIMER

RELAY CONTACT

FAN MOTOR

LIMIT CONTROL

\[ 115V/60Hz/1\# \text{ POWER SHOWN} \]
\[ L1(BK) \text{ L2(W)} \]

FUSED DISCONNECT
SWITCH (BY OTHERS)
SECOND FUSE AND
SWITCH REQUIRED
FOR 230V, 200V, 1\#

FUSED DISCONNECT
SWITCH (BY OTHERS)
SECOND FUSE AND
SWITCH REQUIRED
FOR 230V, 200V, 1#

\[ 115V \text{ XFMR} \]

\[ 24V \]

\[ \text{SPARK} \]

INDICATES TRANSFORMER TERMINAL

INDICATES IPI CONTROLLER TERMINALS

+ FOR CANADIAN UNITS ONLY

8H6490BB2 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat,
low-voltage controlled power venter. (Rev. A)
NOTE TO INSTALLER: ATTACH THIS DIAGRAM NEAR HEATER. ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES. ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE. USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR WIRE:
230V/60Hz/1φ-MAX (OR 0 )
208V/60Hz/1φ-MAK
WIRE NOT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

8H6490B82 — Three-phase, intermittent pilot ignition, non-100% (and 100%) shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
8H6490B83 — Single-phase, intermittent pilot ignition, non-100% (and 100%) shut-off, fan time delay, low-voltage thermostat, summer-winter switch, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

600V/60Hz/3-phase power shown
FUSED DISCONNECT SWITCH
(BY OTHERS)

250V XFRM
(BY OTHERS)

TO LI XFRM
(BY OTHERS)

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY FIELD WIRE WET

230V/60Hz/3-phase power shown
FUSED DISCONNECT
SWITCH
(BY OTHERS)

3PH STARTER
(BY OTHERS)

TO LI XFRM
(BY OTHERS)

24V RELAY
POWER VENTER
FAN MOTOR

LIMIT CONTROL
1 FUSE

*J* BOX

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRING
230V/60Hz/1+1 (MAX) OR 0
208V/60Hz/1+1 (MAX)
WIRE MUST NOT BE USED
FOR CANADIAN UNITS ONLY

864900B83 — Three-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat, summer-winter switch.
low-voltage controlled power venter. (Rev. A)
CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO
THIS WIRING DIAGRAM MAY RESULT IN
INJURY TO THE INSTALLER OR USER,
FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY FIELD LINE 24V.
WIRE NUT

LOW VOL.
THERM
(BY OTHERS)

†FUSE

LIMIT
CONTROL
†FUSE

SB6 CONTROLLER
MAIN GAS VALVE
PILOT VALVE

FAN MOTOR

FAN TIMER

†BOX

FUSED DISCONNECT
SWITCH (BY OTHERS)
SECOND FUSE AND
SWITCH REQ'D FOR 230V, 200V, 1†

115V/60Hz/1† POWER SHOWN
L1(BK), L2(W)

TH

115V
XFR
24V

TH

FUSED DISCONNECT
SWITCH (BY OTHERS)
SECOND FUSE AND
SWITCH REQ'D FOR 230V, 200V, 1†

5H70081B33 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat. (Rev. B)
5H70081B33 — Three-phase, intermittent pilot ignition, non-100% (and 100%) shut-off, fan time delay, low-voltage thermostat. (Rev. B)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR,
PRIMARY XFMR WIRES
230V/60Hz/1#-BK&Y (OR O)
200V/60Hz/1#-BK&Y
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

†FOR CANADIAN UNITS ONLY

8H6490B84 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat, summer/winter switch. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

75VA XFRM
(BY OTHERS)

3φ STARTER
(BY OTHERS)

TO L1 XFRM
TO L2 XFRM

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

3φ STARTER
(BY OTHERS)

WIRING LEGEND

FACTORY FIELD WIRE NUT

LINE 24V.

L1
L2
L3
L1
L3
L2

CAUTION

FAILURE TO WIRE THIS UNIT ACCORDING
TO THIS WIRING DIAGRAM MAY RESULT
IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

SPDT 5W
LOW VOLTAGE THERM.

1 FUSE

LIMIT CONTROL.

230V XFRM

FUSED DISCONNECT
SWITCH
(BY OTHERS)

10A O.L.C.
STARTER COIL

FAN MOTOR

FAN TIMER CONTACT

24V

SUMMER

WINTER

FAN TIMER

SB6 CONTROLLER

25V1
MV

MV/PV

MV/PV

PV

QND

PILOT VALVE

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL
ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH
THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRING
230V/60Hz/1φ-BXBY (OR 0)
208V/60Hz/1φ-BB6E
WIRE NUT THE WIRE NOT USED
*FOR CANADIAN UNITS ONLY

8H6490B84 — Three-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat, summer/winter switch. (Rev. A)
MODINE 6-441 WIRING DIAGRAM MODELS PA, BA

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY FIELD LINE 24V. WIRE NUT

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

ALTERNATE XFRM.
PRIMARY XFRM WIRES 230V/60Hz/1#-BK(W)/OR D) 200V/50Hz/1#-BK(W)
WIRE NUT THE WIRE NOT USED.
† FOR CANADIAN UNITS ONLY

8H6490B85 — Single-phase, intermittent pilot ignition, non-100% (and 100%) shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

460V/60Hz/3ϕ POWER SHOWN FUSED DISCONNECT SWITCH (BY OTHERS)

250V TRANSFORMER (BY OTHERS)
TO L1, L2, L3

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY FIELD WIRE NOT
LINE 24V.

230V/60Hz/3ϕ POWER SHOWN FUSED DISCONNECT SWITCH (BY OTHERS)

# STARTER (BY OTHERS)

FUSED DISCONNECT SWITCH (BY OTHERS)

230V/60Hz/3ϕ POWER SHOWN

24V RELAY

RELAY CONTACT

POWER VENTER

FAN TIMER CONTACT

G.L.C.

STARTER COIL

LIMIT CONTROL 5 V3

FUSED DISCONNECT SW.

230V TRANSFORMER

24V

THERM

Neither

24V

FAN TIMER

MAIN GAS VALVE

Note to Installer:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

* ALTERNATE TRANSFORMER WIRING
PRIMARY TRANSFORMER WIRING:
230V/60Hz/1ϕ (EXCEPT OR 0)
200V/60Hz/1ϕ - EXCEPT OR 3
WIRE NOT THE WIRE NOT USED
* FOR CANADIAN UNITS ONLY

8H6490B85 — Three-phase, intermittent pilot ignition, non-100% and 100%
shut-off, fan time delay, low-voltage thermostat,
low-voltage controlled power venter. (Rev. A)
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFMR.
PRIMARY XFMR MIES:
230V/60Hz/1#-BK/48V OR 0
208V/60Hz/1#-BK/R
WIRE NUT THE WIRE NOT USED.
+FOR CANADIAN UNITS ONLY

8H6490B86 — Single-phase, intermittent pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat,
summer/winter switch, low-voltage controlled power venter. (Rev. A)
FOR U.S. UNITS ONLY

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND
FACTORY FIELD WIRED NUT LINE 24V.

230V/60Hz/3ph POWER SHOWN
FUSED DISCONNECT SWITCH (BY OTHERS)

250VA XFRM (BY OTHERS)
AP STARTER (BY OTHERS)
TO #1 XFMR

(LP FAN PANTHER)

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

8H6490B86 — Three-phase intermittend pilot ignition, non-100% (and 100%)
shut-off, fan time delay, low-voltage thermostat,
summer/winter switch, low-voltage controlled power venter. (Rev. A)
**WARNING**

FAIL URE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER. FOR DEVIATIONS CONTACT THE FACTORY.

**WIRING LEGEND**

<table>
<thead>
<tr>
<th>FACTORY</th>
<th>LINE</th>
<th>24V.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIELD</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>WIRE NUT</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

* PRIMARY XFMR WIRES
  230V/60Hz/1#-BK & OR D
  200V/60Hz/1#-BK & AR
  WIRE NUT THE WIRE NOT USED
  + FOR CANADIAN UNITS ONLY

115V/60Hz/1# POWER SHOWN
L1(BK) L2(W)

FUSED DISCONNECT SWITCH (BY OTHERS)
SECOND FUSE AND SWITCH REQ'D FOR 230V.200V.1#

FAN TIMER CONTACT
2 1 4 3

FAN MOTOR

MAIN VALVE

INDICATES TRANSFORMER TERMINAL
+ FOR CANADIAN UNITS ONLY

5H70081B39 — Single-phase, standing pilot, 100% shut-off, fan time delay, low-voltage thermostat.
FOR U.S. UNITS ONLY

460V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

1 L1
2 L2
3 L3

15/230V

△ 75VA XFMR
(BY OTHERS)

T1 T2 T3

FAN TIMER
(L1 XFMR)
TO L2 XFMR

CAUTION
FAILURE TO WIRE THIS UNIT ACCORDING TO THIS WIRING DIAGRAM MAY RESULT IN INJURY TO THE INSTALLER OR USER.
FOR DEVIATIONS CONTACT THE FACTORY.

WIRING LEGEND

FACTORY FIELD WIRE NUT

WIRING DIAGRAM

230V/60Hz/3φ POWER SHOWN
FUSED DISCONNECT SWITCH
(BY OTHERS)

3φ STARTER
(BY OTHERS)

T1 T2 T3

FAN MOTOR

LIMIT CONTROL

ECO

MAIN VALVE

THROTTLE

FAN TIMER

"J" BOX

* PRIMARY XFMR WIRES
230V/60Hz/1φ-BKG/(OR 0)
200V/60Hz/1φ-BKG
WIRE NUT THE WIRE NOT USED
1 FOR CANADIAN UNITS ONLY

△ TRANSFORMER NOT REQUIRED WITH
230V/3φ POWER SUPPLY AND
230V/25V CONTROL TRANSFORMER

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

5H700881B39 — Three-phase, standing pilot, 100% shut-off, fan time delay, low-voltage thermostat.
8H6490B105 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch.
MODINE 6-441 WIRING DIAGRAM MODELS PA, BA

FOR U.S. UNITS ONLY

460V/60Hz/3# POWER SHOWN
FUSED DISCONNECT SWITCH (BY OTHERS)

460V
115/230V

75VA XFMR
(BY OTHERS)

1T, 2T, 3T
3# STARTER
(BY OTHERS)

170 #8 FANTIMER
TO L1 XFMR

LOW VOLT THERM
(BY OTHERS)

FUSE

MAIN VALVE

ECO

NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105 °C WIRE FOR REPLACEMENTS.

*P BOX

ALTERNATE XFMR
PRIMARY XFMR WIRE
230V/60Hz/1#-BK&Y OR 0 )
200V/60Hz/1#-BK&W
WIRE NUT THE WIRE NOT USED
1 FOR CANADIAN UNITS ONLY

INDICATES TRANSFORMER TERMINAL
† FOR CANADIAN UNITS ONLY

8H6490B105 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch.
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.
ALL WIRING MUST COMPLY WITH NATIONAL ELECTRIC CODE AND ALL LOCAL CODES.
ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.
USE 105°C WIRE FOR REPLACEMENTS.

*ALTERNATE XFRM.
PRIMARY XFRM WIRES
230V/60Hz/1P BK&YE OR 0
200V/60Hz/1P BK&BR
WERE NOT THE WIRE NOT USED
†FOR CANADIAN UNITS ONLY

8H6490B106 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
8H6490B106 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, low-voltage controlled power venter.
8H6490B107 — Single-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch low-voltage controlled power venter.
NOTE TO INSTALLER:
ATTACH THIS DIAGRAM NEAR HEATER.

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

ALL COMPONENTS MUST AGREE WITH THEIR RESPECTIVE POWER SOURCE.

USE 105°C WIRE FOR REPLACEMENTS.

* ALTERNATE XFMR.
PRIMARY XFMR WIRES
230V/60Hz/120V/120V (OR 0)
209V/60Hz/120V/120V WIRE NUT THE WIRE NOT USED
1 FOR CANADIAN UNITS ONLY

* 1 FOR TRANSFORMER TERMINAL

8H6490B107 — Three-phase standing pilot, 100% shut-off, fan time delay, low-voltage thermostat, summer/winter switch low-voltage controlled power vented.