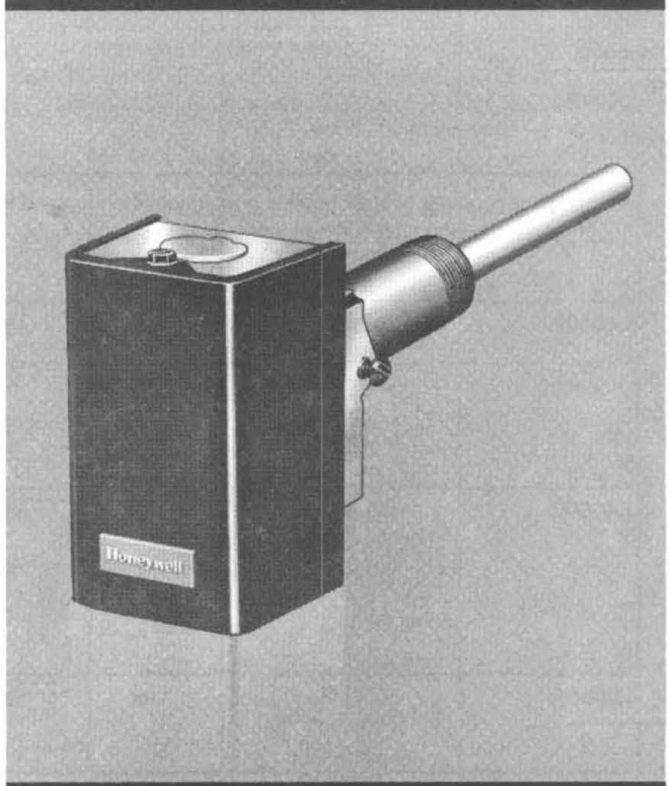
Honeywell

This is a legacy product document supported by Resideo. It is no longer manufactured.

AQUASTAT CONTROLLERS



L4080B,D,F,G
L8080A

THE L4080 AND L8080 ARE IMMERSION TYPE CONTROLLERS FOR HYDRONIC HEATING SYSTEMS THAT TURN OFF THE BURNER WHENEVER THE BOILER WATER TEMPERATURE RISES TO THE SET POINT.

☐ L4080 High Limit Aquastat Controller has adjustable set point.

☐ L4080 models available for use with immersion wells or for direct immersion if faster response is needed.

☐ A factory-set stop is available on L4080 to prevent setting the control at too high a temperature.

☐ L4080 models available with second limit switch to shut off all gas to the burner.

☐ L8080 ECO gas shutoff has fixed set point.

☐ Liquid fill in sensing element expands as the boiler temperature rises.

☐ At the set point temperature, a diaphragm-actuated snap switch breaks the power supply to the burner primary control.

S.M.
REV. 4-86●

Form Number 60-2101—2
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SPECIFICATIONS

IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED AND CALIBRATED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

TABLE I—MODELS

MODEL NUMBER	DESCRIPTION	CASE AND COVER	IMMERSION WELL	STANDARD RANGE	OPTIONAL RANGES
L4080B	High Limit Aquastat Controller	Yes	Yes[a]	180 F to 240 F [82 C to 116 C]; dial marked in 10 F [5.6 C] increments.	140 F to 240 F [60 C to 116 C]; dial marked in 10 F [5.6 C] increments. 120 F to 160 F [49 C to 71 C]; dial marked **WARM-NORMAL-HOT.** Stop set at 150 F, 200 F, or 220 F [66 C, 93 C, or 104 C].
L4080D	High Limit Aquastat Controller	No	Yes[a]	180 F to 240 F [82 C to 116 C]; dial marked in 10 F [5.6 C] increments.	140 F to 240 F [60 C to 116 C], dial marked in 10 F [5.6 C] increments.
L4080F	Dual Limit Aquastat Controller	Yes	Yes	180 F to 240 F [82 C to 116 C]; dial marked in 10 F [5.6 C] increments; stop set at 210 F [98.9 C].	—
L4080G	Dual Limit Aquastat Controller	No	Yes	140 F to 240 F [60 C to 116 C], dial marked in 10 F [5.6 C] increments; stop set at 210 F [98.9 C].	—
L8080A	ECO Gas Shutoff Device	Yes	Yes	Factory-set, 200 F [93 C]. Non-adjustable.	—

[a]On select B and D models, well must be ordered separately. Refer to form 68-0040, "Wells and Fittings for Temperature Controllers," to order well, if necessary.

ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALER OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. **Order number.**
2. **Control range (L4080 only).**
3. **Differential.**
4. **Optional specifications.**

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. **YOUR LOCAL HONEYWELL RESIDENTIAL SALES OFFICE (CHECK WHITE PAGES OF YOUR PHONE DIRECTORY).**
2. **RESIDENTIAL DIVISION CUSTOMER SERVICE**
   HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH
   MINNEAPOLIS, MINNESOTA 55422-4386 (612) 542-7500

IN CANADA—HONEYWELL CONTROLS LIMITED/HONEYWELL LIMITEE, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9. INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

SWITCH ACTION: Breaks contact on temperature rise to set point.

DIFFERENTIAL: Approximately 15 F [8.3 C] non-adjustable. Special models available with 8 F [4.4 C] differential.

ELECTRICAL RATINGS (A):

		L4080	L8080
Running	120 Vac	8	—
	240 Vac	4	—
Locked Rotor	120 Vac	48	—
	240 Vac	24	—
Inductive	24 Vac	50 VA	50 VA
0.25 to 12 Vdc		0.25	—
Powerpile		—	750 mVdc

Second Limit (bimetal switch) on L4080F,G:
Powerpile 750 mV at 0.4 A.
Thermocouple 30 mV at 0.4 A.

PRESSURE RATINGS: 225 psi [1551 kPa] with immersion well.

MAXIMUM TEMPERATURE RATING: 40 F [22 C] above set point, or 265 F [129.4 C], whichever is lower.

DIMENSIONS: See Fig. 1.

INSERTION DEPTH: See Fig. 1.

MOUNTING MEANS: Mounts in well.

SPECIFICATIONS OF SECOND LIMIT (L4080F,G):

Leadwires: No. 14 stranded wire, 1/32" insulation, Underwriters Laboratories and Canadian Standards Association approved for 105 C [221 F] service.

Ending: 1/4" brass, tin plated female quick-connects, crimped and soldered to leadwires; quick-connects insulated with nylon housing.

Length: 39" ± 1" from end to end (tip of switch to tip of quick connect).

Functional Length (exposed length): 34-1/2" (1-1/2" insulation) or 33" (3" insulation).

Bimetal Switch: Powerpile 750 mV at 0.4 A; thermocouple 30 mV at 0.4 A.

OPTIONAL SPECIFICATIONS:

—3/4 in. [19.1 mm] spud.
—3 in. [76.2 mm], 3-5/8 in. [92.1 mm], or 5 in. [127.0 mm] insertion depth.
—45 degree quick-connect terminals.
—control range (Table 1).
—plastic tubing over well.

UNDERWRITERS LABORATORIES INC. LISTED:

L4080B,D,F,G models with well—File No. MP466, Guide No. MBPR; models less well—File No. MP466, Guide No. MBPR2.

CANADIAN STANDARDS ASSOCIATION CERTIFIED:

L4080D—File No. LR1620, Guide No. 400-E-0.

AMERICAN GAS ASSOCIATION DESIGN CERTIFIED:

L4080B,D—Test Report 23-11B.
L8080A—Test Report 22-15A.

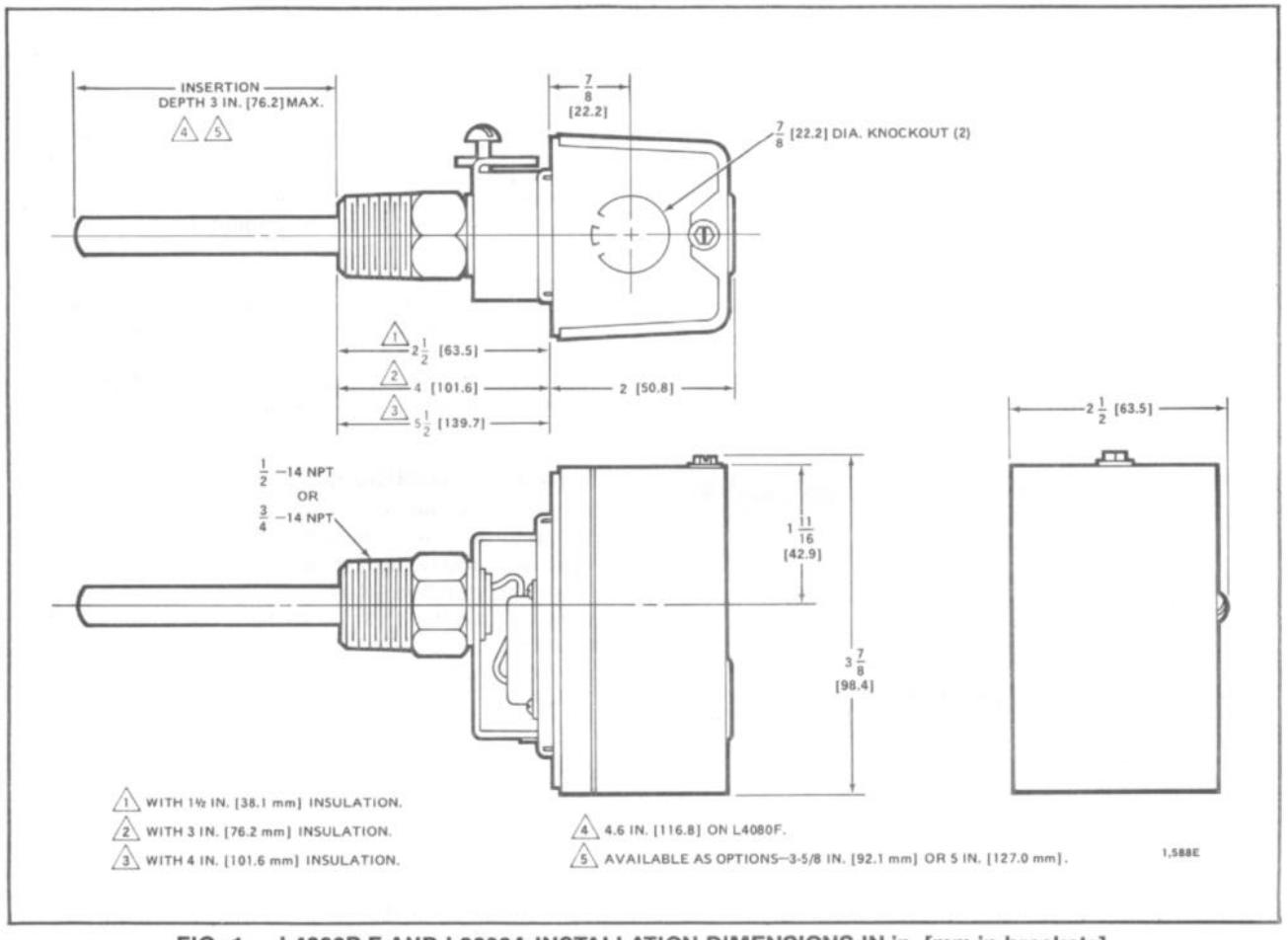


FIG. 1— L4080B,F AND L8080A INSTALLATION DIMENSIONS IN in. [mm in brackets].

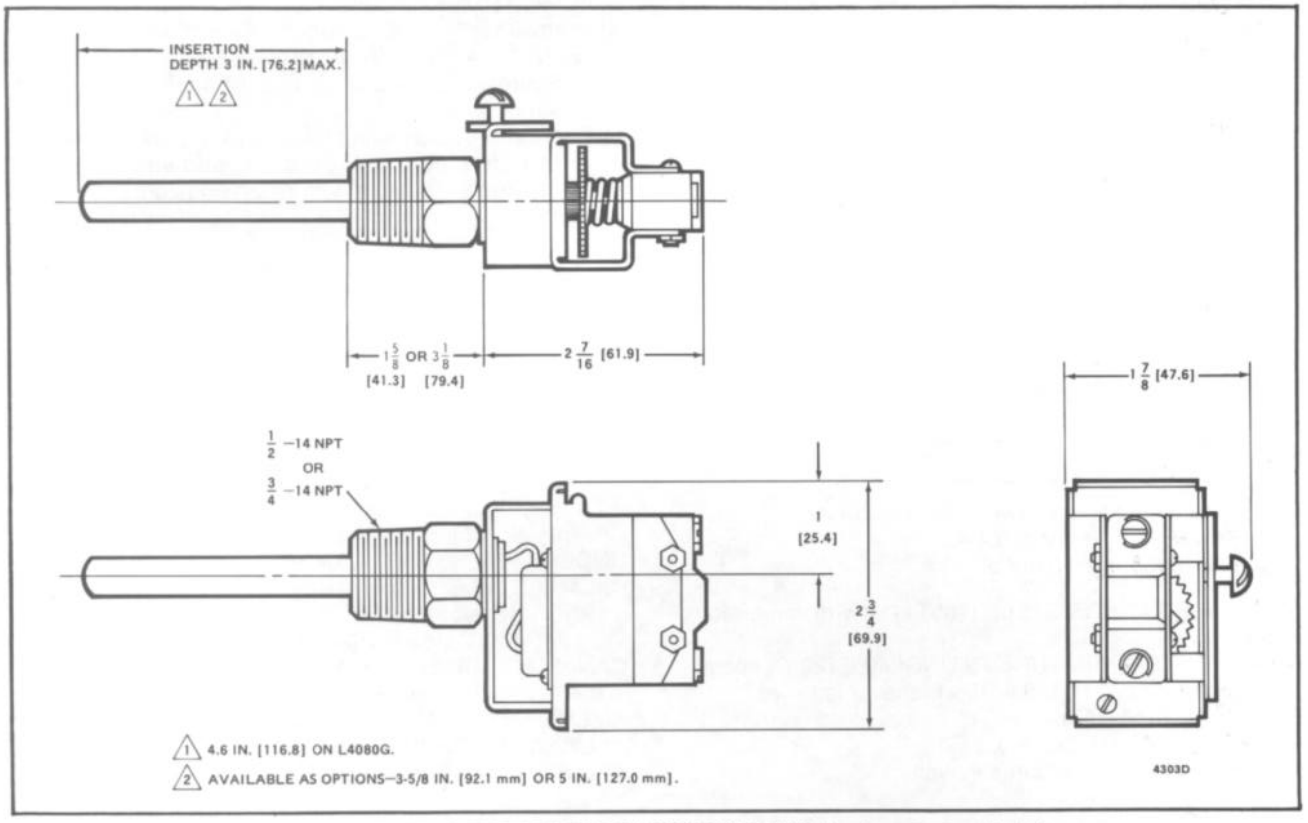


FIG. 2—L4080D,G INSTALLATION DIMENSIONS IN in. [mm in brackets].

INSTALLATION

WHEN INSTALLING THIS PRODUCT . . .

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

CAUTION

Disconnect power supply to prevent electrical shock or equipment damage.

LOCATION AND MOUNTING

CAUTION

The L8080A must be installed within 6 in. [152.4 mm] from the top of the tank.

The L4080 or L8080 is mounted in a tapping which is usually provided by the boiler manufacturer, at a location where it will sense average water temperatures.

1. Disconnect power supply and drain boiler.
2. If no tapping is provided, prepare one at a location that will permit boiler water of average temperature to circulate freely about the element.
3. L4080A—insert in boiler tapping. Using wrench on hex nut only, tighten securely. Do not use the L4080 as a lever to tighten the connection.
4. L4080B,D and L8080A—install immersion well in boiler tapping, tighten securely. Insert sensing element in well, tighten setscrew.
5. Refill boiler and check for water leaks. If well needs tightening, use wrench on hex nut only.

SETTINGS (L4080 only)

Because heating systems differ, follow the burner manufacturer's recommendations when selecting the proper Aquastat controller setting.

Turn the notched wheel until the desired high limit setting coincides with the arrowhead indicator at the side of the switch.

On the L4080F and G, the second high limit is not adjustable.

WIRING

Disconnect power supply before connecting wiring to prevent electrical shock or equipment damage.

All wiring must comply with applicable codes and ordinances.

Wire the L4080 in the control circuit. Wire the L8080 in series with the gas control power unit. Figs. 3-10 show typical wiring diagrams.

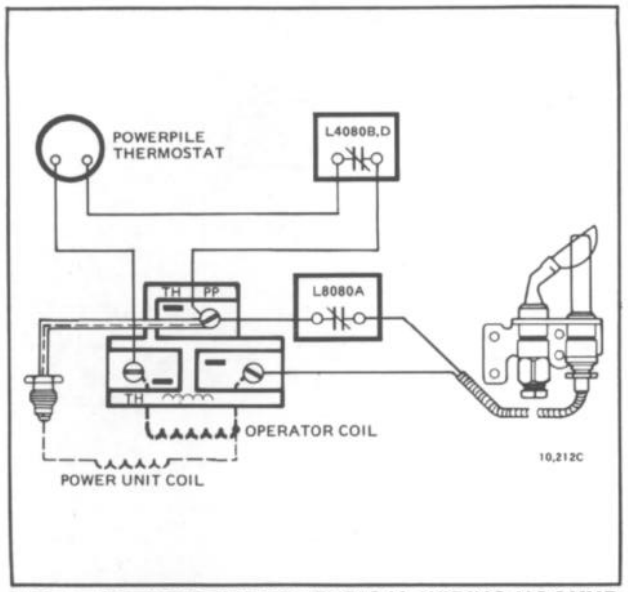


FIG. 3—L4080B,D; L8080A TYPICAL WIRING HOOKUP FOR 3 TERMINAL POWERPILE SYSTEMS.

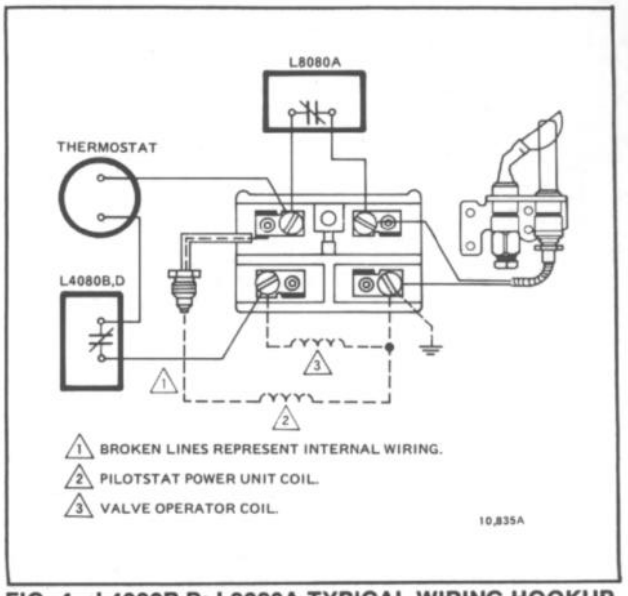


FIG. 4—L4080B,D; L8080A TYPICAL WIRING HOOKUP FOR 4 TERMINAL POWERPILE SYSTEMS.

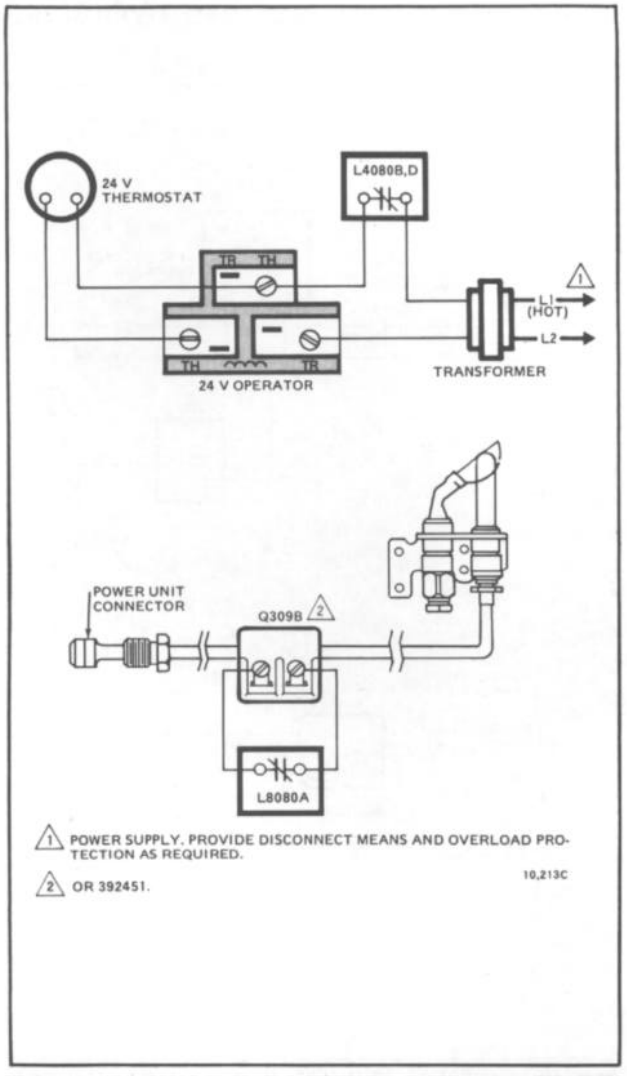


FIG. 5—L4080B,D: L8080A TYPICAL WIRING HOOKUP FOR 24 V SYSTEMS.

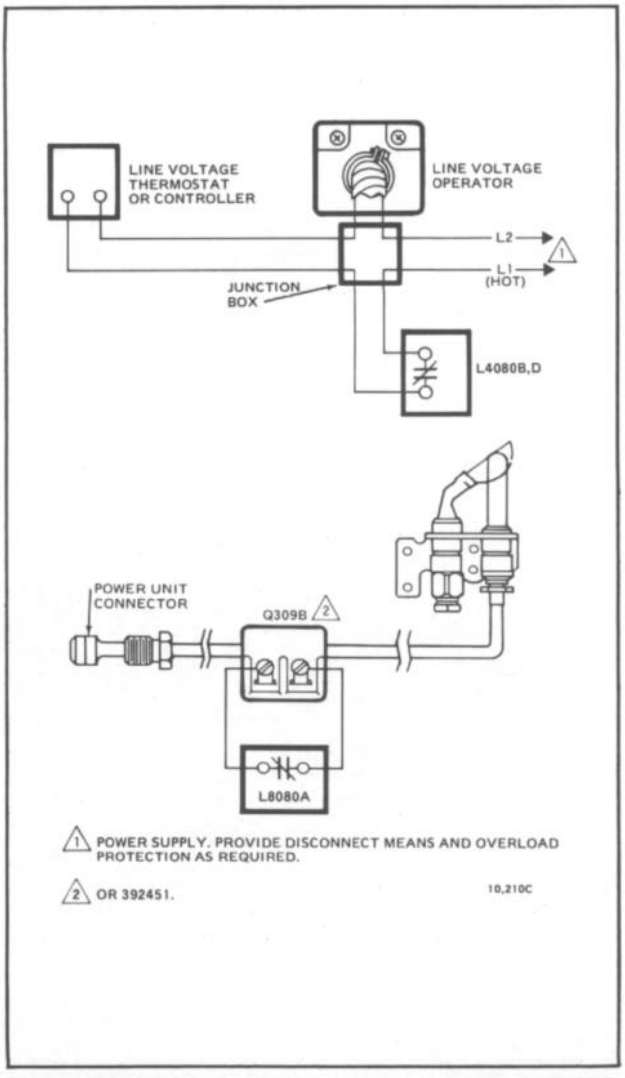


FIG. 6—L4080B,D; L8080A TYPICAL WIRING HOOKUP FOR LINE VOLTAGE SYSTEM.

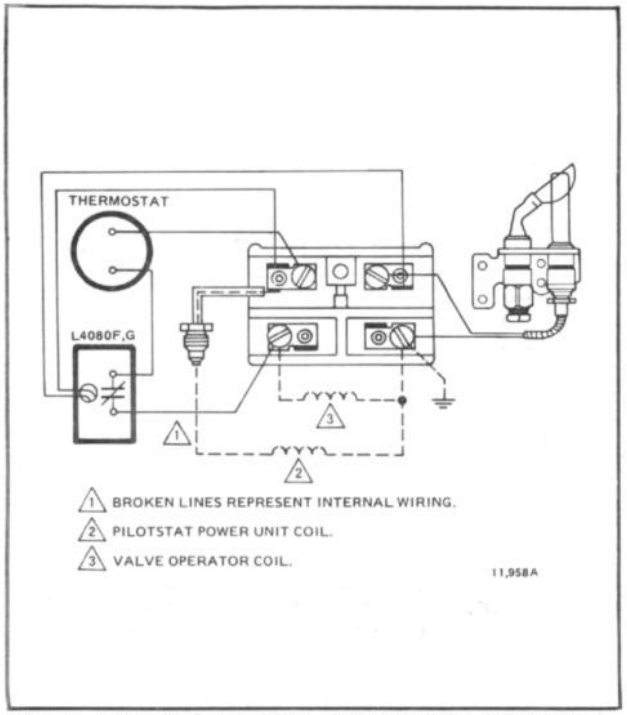


FIG. 7—L4080F,G TYPICAL WIRING HOOKUP FOR 4-TERMINAL POWERPILE CONTROL SYSTEMS.

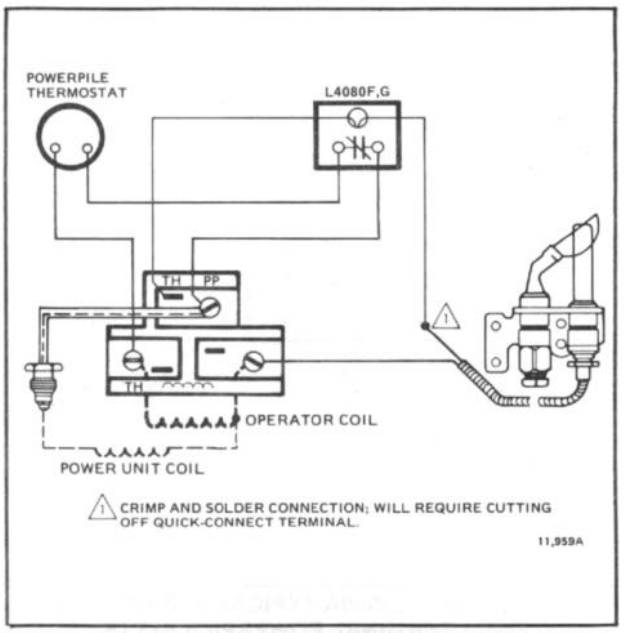


FIG. 8—L4080F,G TYPICAL WIRING HOOKUP FOR 3-TERMINAL POWERPILE CONTROL SYSTEMS. (SUGGESTED AS FIELD REPLACEMENT ONLY; FOR NEW SYSTEMS, USE 4-TERMINAL MODEL.)

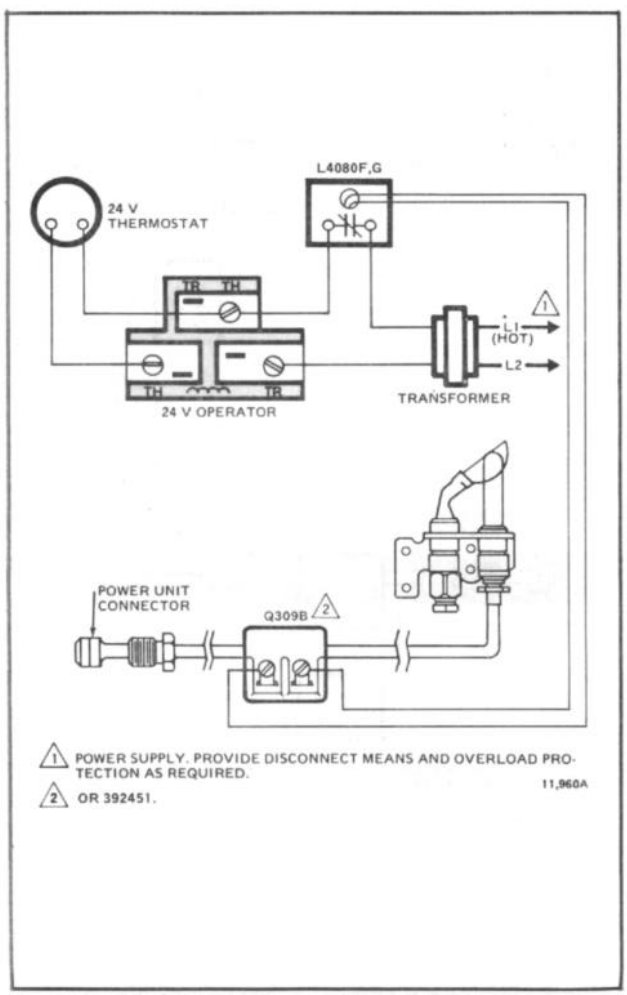


FIG. 9—L4080F,G TYPICAL WIRING HOOKUP FOR 24 V SYSTEMS.

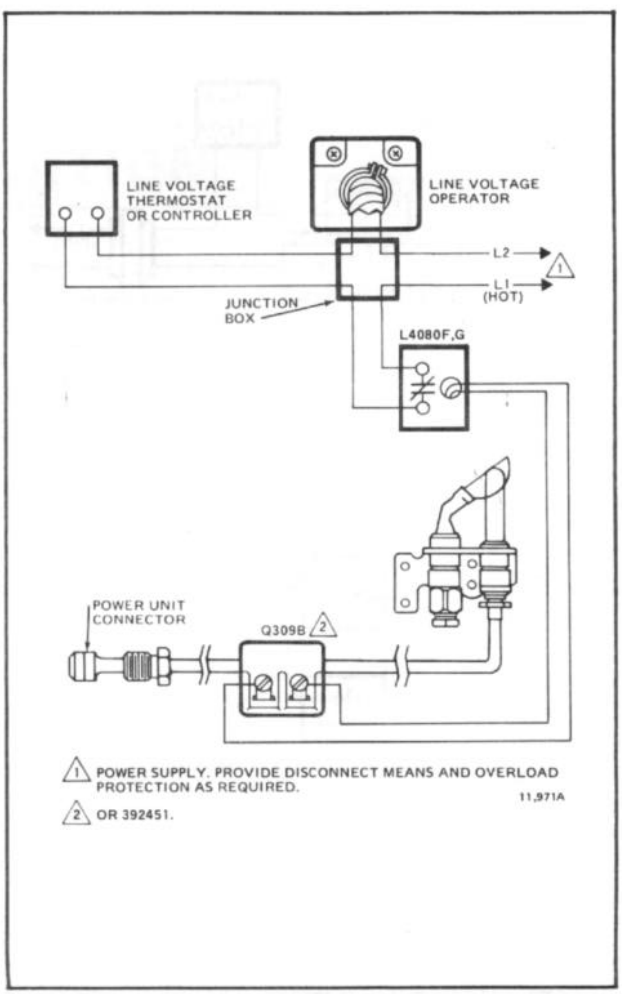


FIG. 10—L4080F,G TYPICAL WIRING HOOKUP FOR LINE VOLTAGE SYSTEMS.

OPERATION

When the water temperature rises to the L4080 or L8080 set point, the liquid fill in the sensing unit expands, actuating a diaphram which interrupts the power supply to the burner primary control (L4080) or the Pilotstat power unit (L8080).

When the L4080 interrupts power to the burner primary control, the system automatically recycles when the water cools and the L4080 switch closes.

On the L4080F and G, when the second limit is reached, the Pilotstat power unit circuit opens, shutting off all gas to the heater. Manual reset of the system is required to restart.

When the L8080 interrupts power to the Pilotstat power unit, the water must cool to approximately 120 F [49 C] and the gas control's power unit must be reset before the system will operate.

CHECKOUT

CAUTION

Do not operate burner by jumpering gas valve terminals; this bypasses the temperature and limit controls.

Turn on the power supply. Start the heating system according to instructions supplied with the burner control or main gas valve. Turn the L4080 to the low end of its range, and be sure the control shuts off the burner when the set point is reached. Set the L4080 High Limit Aquastat Controller to the manufacturer's recommended setting before leaving job.

The L8080A is factory-set and nonadjustable. Check that the power unit drops out and that gas flow is interrupted when the L8080's set point is reached (200 F [93 C]. Reset power unit before leaving job.

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